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Witnesses:	L. Garris J. Ishiguro R. Nanda E. Roddick R. Sekhon K. Sweetser

(U 338-E)

2025 General Rate Case
Rebuttal Testimony

Enterprise Technology and OU Capitalized Software

PUBLIC VERSION

Before the

Public Utilities Commission of the State of California

Rosemead, California
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SCE-17 Vol. 01: Enterprise Technology and OU Capitalized Software

Table Of Contents

Section	Page	Witness
I. INTRODUCTION	1	E. Roddick
A. Summary of Rebuttal Position	1	
1. O&M Summary	1	
2. Capital Expenditures Summary	2	
a) Enterprise Technology (SCE-06, Volume 1)	2	
b) OU Capitalized Software (SCE-06, Volume 2)	3	
II. TECHNOLOGY DELIVERY	5	J. Ishiguro
A. O&M Expenses	5	
1. SCE Application	5	
2. Cal Advocates' Position	6	
3. SCE's Rebuttal To Cal Advocates' Position	6	
a) Cal Advocates Misinterprets SCE's Forecasting Method For Non-Labor O&M	6	
b) SCE's Modified Itemized Forecast Is A More Reasonable Forecast Method Than The Last Year Recorded For Technology Delivery's Non-Labor Expense	7	
c) The Underspend Of Authorized Compared To Recorded For 2021-2022 Does Not Void The Reasonableness Of The Modified Itemized Forecast Method	8	
4. Conclusion	8	
III. DIGITAL & PROCESS TRANSFORMATION	10	K. Sweetser
A. O&M Expenses	10	
1. SCE Application	10	
2. Cal Advocates' Position	11	

SCE-17 Vol. 01: Enterprise Technology and OU Capitalized Software

Table Of Contents (Continued)

Section	Page	Witness
3. SCE's Rebuttal To Cal Advocates' Position	11	
a) Cal Advocate Misstates SCE's Request For Additional Resources And Its Recommendation Does Not Consider The Demonstrated Increase In Demand For DPT Work	11	
b) Cal Advocates' Recommendation Fails To Consider Benefits Included In This Rate Case Based On Projects Implemented From The Last Rate Case.	13	
c) Cal Advocates' Recommendation To Use 2022 Recorded Costs For O&M Is Not Representative Of Future Costs Needed To Deliver Required Solutions	14	
4. Conclusion	15	
B. Capital Expenditures	15	
1. SCE Application	15	
2. Cal Advocates' Position	16	
3. SCE's Rebuttal to Cal Advocates' Position	17	
a) The Capital Forecast is Necessary to Fund Additional Resources to Achieve the Future Savings From DPT's Projects	17	
b) Cal Advocates' Argument That DPT Resources Will Continue To Charge OU Capitalized Software Is Incorrect	18	
c) Cal Advocates' Assertion That Internally Developed DPT Solutions That May Meet Capital Guidelines Is A Reason For Reducing The Capital Request Is Wrong	19	
4. Conclusion	19	
IV. SOFTWARE MAINTENANCE & REPLACEMENT	21	R. Nanda L. Garris

SCE-17 Vol. 01: Enterprise Technology and OU Capitalized Software

Table Of Contents (Continued)

Section	Page	Witness
A. O&M Expenses	21	
1. SCE Application	21	
2. Cal Advocates' Overall Position	22	
3. SCE's Rebuttal to Cal Advocates' Overall Position	23	
4. Cloud And Perpetual License	24	R. Nanda
a) SCE Application	24	
b) Cal Advocates' Position On SCE's Cloud Forecast	25	
c) SCE's Rebuttal To Cal Advocates' Position - Cloud	26	
(1) SCE's Itemized Approach Is Based On Actual Vendor Contract Agreements	26	
(2) Cal Advocates' Recommended Forecast Method of Last Year Recorded Plus $3 Million Increase Does Not Consider All Historical Increases	28	
d) Cal Advocates' Position On SCE's Perpetual License Forecast	31	
e) SCE's Rebuttal To Cal Advocates' Position - Perpetual License	32	
(1) Cal Advocates' Recommended Last Recorded Year Forecast Does Not Address New Contracted Services Impacting SCE's Forecast	32	
(2) Cal Advocates Ignores Vendor Contractual Agreements That Factually Support The Perpetual License Forecast	34	

SCE-17 Vol. 01: Enterprise Technology and OU Capitalized Software

Table Of Contents (Continued)

Section	Page	Witness
(3) Cal Advocates' Comparison Of Perpetual License To OU Capitalized Software Is Unsupported	36	
(4) Cal Advocates' Depiction And Analysis Of The Perpetual License Historical Underspend Does Not Consider The Overspend In Cloud	36	
(5) Historical Reasons For Underspend Of Authorized Compared To Recorded Are Less Likely To Impact Future Years	39	
f) Conclusion	40	
5. Application Refresh	40	L. Garris
a) SCE Application	40	
b) Cal Advocates' Position	42	
(1) O&M Projects	42	
(2) Consulting And Professional Services	43	
(3) Ongoing Maintenance	43	
c) SCE's Rebuttal To Cal Advocates' Position	43	
(1) O&M Projects	43	
(2) Consulting And Professional Services	48	
(3) Ongoing Maintenance	50	
d) Conclusion	50	
B. Capital Expenditures	51	
1. Application Refresh	51	
a) SCE Application	51	

SCE-17 Vol. 01: Enterprise Technology and OU Capitalized Software

Table Of Contents (Continued)

Section	Page	Witness
b) Cal Advocates' Position	53	
c) SCE's Rebuttal To Cal Advocates' Position	53	
(1) Cal Advocates Did Not Consider New Demand In This GRC Period	53	
(2) Cal Advocates' Use Of Projected 2023 Capital Does Not Support Its Last Recorded Year Forecast Method, As SCE's 2023 Recorded Capital Costs Were Higher Than Cal Advocates' Forecast	55	
(3) Cal Advocates' Recommendation For 2025 Is Based On Mistaken Assumptions Of SCE's 2023 Forecast Inaccuracies And Does Not Consider Work Planned In 2025	59	
d) Conclusion	59	
V. TECHNOLOGY INFRASTRUCTURE MAINTENANCE & REPLACEMENT	61	R. Nanda
A. O&M Expenses	61	
1. SCE Application	61	
2. Cal Advocates' Position	62	
3. SCE's Rebuttal To Cal Advocates' Position	62	
4. Conclusion	63	
B. Capital Expenditures	63	
1. Data Center Infrastructure	63	
a) SCE Application	63	
b) Cal Advocates' Position	64	
c) SCE's Rebuttal To Cal Advocates' Position	65	

SCE-17 Vol. 01: Enterprise Technology and OU Capitalized Software

Table Of Contents (Continued)

Section	Page	Witness
(1) An Itemized Forecast Provides A More Reasonable Forecast Of DCI Assets Requiring Replacement During The GRC Period	65	
(2) Cal Advocates' Comparison Of DCI Hardware Replacement To OU Capitalized Software As Justification For A Multi-Year Historical Averaging Forecast Is Inaccurate	67	
(3) The Eight Percent Annual Price Escalation Used In The Forecast Is The Most Reasonable Estimate Of Future Pricing Increases For Technology Advancements And Market Cost Pressures	68	
(4) Cal Advocates' Three-Year Historical Average Forecast Uses The Same "Old" Purchase Order Information It Finds Unreasonable	69	
(5) At A Minimum, Cal Advocates' Recommended Forecast Must Be Corrected To Account For Clear Errors And Omissions	70	
(6) Cal Advocates' Assessment Of SCE's Cost Drivers Is One-Sided And Fails To Address SCE's Data Center Landscape In Its Entirety	74	
d) Conclusion	76	
2. End User Computing Maintenance, Services And Replacement	77	
a) SCE Application	77	
b) Cal Advocates' Position	78	
c) SCE's Rebuttal To Cal Advocates' Position	79	

SCE-17 Vol. 01: Enterprise Technology and OU Capitalized Software

Table Of Contents (Continued)

Section	Page	Witness
(1) The Windows 11 Upgrade Does Not Meet The Inclusion Parameters Established For OU Capitalized Software And Should Remain In End User Computing	79	
(2) Cal Advocates' Proposed Reduction For Tablets In 2024 And 2025 Is Based On An Incorrect Assumption Using Outdated Data	81	
d) Conclusion	82	
VI. OU CAPITALIZED SOFTWARE	83	E. Roddick
A. Capital Expenditures	83	
1. SCE Application	83	
2. Operational Excellence Savings	83	
3. Cal Advocates' Position	84	
4. SCE's Rebuttal to Cal Advocates' Position	84	
a) SCE Proposes To Use 2023 Recorded Capital Expenditures In Place Of Its 2023 Forecast	84	
b) Cal Advocates' Proposed Five-Year Average Forecast Method For 2023 Does Not Consider The Consistent Historical Trend In Capital Expenditures From 2019-2022	84	
5. Conclusion	86	
VII. NEXTGEN ERP MEMORANDUM ACCOUNT	87	R. Sekhon
A. SCE's Application	87	
B. Intervenors' Position	88	
1. Cal Advocates' Position	88	
2. TURN's Position	88	

Table Of Contents (Continued)

Section	Page	Witness
C. SCE's Rebuttal	88	
1. Next Gen ERP Solution Analysis Costs Are Predicated On The Approval Of The NGESMA For Tracking Program Implementation Costs, Until SCE's Next Gen ERP Application Is Reviewed And Approved By The Commission	88	
D. Conclusion	90	
Appendix A Enterprise Technoology Rebuttal Data Request Responses		
Appendix B Enterprise Technology Rebuttal Workpapers		

I.
INTRODUCTION

This Volume addresses various recommendations raised by Cal Advocates related to Southern California Edison's (SCE) 2025 Test Year Operations and Maintenance (O&M) expense and 2023-2028 capital expenditures forecasts for the Enterprise Technology Business Planning Element (BPE). This BPE includes the activities and infrastructure to support SCE's broader Information Technology (IT) needs which are foundational to the operation of SCE. SCE's Enterprise Technology forecast of $287.438 million (constant 2022 dollars) in O&M expenses for Test Year 2025 and capital expenditures of $551.264 million for 2023-2025 will allow SCE to continue necessary work to manage our increasingly complex technology environment. This also includes 2023-2025 capital expenditures of $390.249 million for OU capitalized software to support business capabilities across the enterprise. Additionally, SCE requests to establish a memorandum account for the Next Gen SAP replacement project's implementation costs and filing of a standalone application to seek Commission approval of the project.

A. Summary of Rebuttal Position

1. O&M Summary

Table I-1 provides SCE's Enterprise Technology recorded 2018-2022 expenses, the 2025 Test Year forecasts of SCE and Cal Advocates, and the respective variances by GRC activity. Cal Advocates was the only party to contest SCE's forecasts and recommends a total reduction of $61.117 million comprised of the following GRC activities: (1) $1.599 million in Technology Delivery, (2) $7.110 million in Digital & Process Transformation, and (3) $52.408 million in Software Maintenance & Replacement. The following activities are uncontested: (1) Technology Planning, Design & Support, (2) Fixed Price Technology & Maintenance, and (3) Technology Infrastructure Maintenance and Replacement. SCE respectfully recommends the Commission approve these forecasts for the uncontested activities. SCE addresses the issues raised by Cal Advocates' recommendations in Chapters II-V of this testimony.

Table I-1
Enterprise Technology
2025 O&M Forecast
Summary of SCE and Cal Advocates' Positions
(2022 Constant $000)

Line No.	Enterprise Technology	2025 Forecast					
		SCE Application	SCE Adjustment	SCE Revised Forecast	Cal Advocates	Cal Advocates Variance from SCE	SCE Rebuttal Position
1	Technology Planning, Design & Support	7,267		7,267	7,267	0	7,267
2	Technology Delivery	10,096	(790)	9,306	8,497	(809)	9,306
3	Digital & Process Transformation	11,408		11,408	4,298	(7,110)	11,408
4	Fixed Price Technology & Maintenance	73,855		73,855	73,855	0	73,855
5	Software Maintenance & Replacement	161,456	(459)	160,997	108,590	(52,407)	156,337
6	Infrastructure Maintenance &	24,605		24,605	24,605	0	24,067
7	**Total**	288,687	(1,249)	287,438	227,112	(60,326)	282,240

2. Capital Expenditures Summary

a) Enterprise Technology (SCE-06, Volume 1)

Table I-2 provides a summary of the Enterprise Technology 2018-2022 recorded capital expenditures and the forecast for 2023-2025. Cal Advocates is the only party to propose reductions to the 2023-2025 capital forecasts within Ex. SCE-06, Volume 1 (Enterprise Technology) which include: (1) $10.863 million Digital & Process Technology, (2) $42.906 million Software Maintenance and Replacement, and (3) $101.083 million Technology Infrastructure Maintenance & Replacement.

Consistent with SCE's proposal for the Commission to authorize SCE's 2023 forecast expenditures at SCE's 2023 recorded levels, SCE's Rebuttal Position reflects this modification, as well as errata from the original Application.[1] For IT capital expenditures, this proposal results in a

[1] *See* Ex. SCE-11 for SCE's 2023 recorded capital expenditures and Ex. SCE-18, Vol. 01, Ch. VI for SCE's proposal that the Commission authorize SCE's 2023 recorded expenditures in place of SCE's original 2023 forecast across the case.

total increase of $21.937 million to SCE's 2023 capital forecast.[2] The delta between 2023 recorded versus forecast expenditures is primarily attributed to implementation of the following software licenses that provided additional functionalities: SAP/Open Text, Github, HP/Merito products in Software Maintenance & Replacement Perpetual License activity, which is further addressed in Chapter IV.

Table I-2
Enterprise Technology
Capital Expenditures 2023-2025 Forecast
Summary of SCE and Cal Advocates Positions
(Nominal $000)

Line No.	Business Planning Element	2023 - 2025 Forecast					
		SCE Application	SCE Adjustment	SCE Revised Forecast	Cal Advocates	Cal Advocates Variance from SCE	SCE Rebuttal Position
1	Digital & Process Transformation	28,329		28,329	17,466	(10,863)	30,047
2	Software Maintenance & Replacement	181,587		181,587	137,681	(43,906)	202,913
3	Technology Infrastructure Maintenance & Replacement	352,457	(11,109)	341,348	240,265	(101,083)	339,641
4	**Subtotal**	562,373	(11,109)	551,264	395,412	(155,852)	572,601
5	OU Capital (SCE-6, Vol. 2)	390,249		390,249	341,416	(48,833)	346,395
6	**Total**	952,622	(11,109)	941,513	736,828	(204,685)	918,996

b) <u>OU Capitalized Software (SCE-06, Volume 2)</u>

As shown in Table I-3 below, Cal Advocates was the only party to make a forecast recommendation regarding SCE's OU Capitalized Software projects funding request contained in SCE-06, Volume 2 (OU Capitalized Software). Cal Advocates' issue pertains only to the 2023 forecast. SCE's rebuttal position for OU Capitalized Software makes two proposed adjustments to the forecast. The first adjustment, consistent with SCE's companywide position in Exhibit SCE-18, Vol 01, proposes the Commission authorize SCE's 2023 recorded expenditures in place of SCE's original 2023 forecast across the case. This results in a decrease of $33.854 million (or 21%) below SCE's 2023 forecast as a result of underspend in the NextGen ERP project due to deferral of Solution Analysis 2 scope from 2023 to 2024.[3] Such variances may occur as a result of changes in scope, architectural design, or changing business needs. The second adjustment recognizes a $10 million forecast reduction for 2025 for operational excellence. These cost savings are a culmination of portfolio optimization and

[2] $172.519 million - $150.582 million = $21.937 million.

[3] *See* Ex SCE-11.

cost efficiency measures that will be implemented in 2025 and continue each year thereafter.[4] As further described in Chapter VI of this testimony, SCE also respectfully requests that the Commission approve SCE's 2023-2025 OU Capitalized Software forecast of $346.395 million shown in Table I-3 below.

Table I-3
Technology Solutions
OU Capitalized Software Expenditures 2023-2025 Forecast
Summary of SCE and Cal Advocates Positions
(Nominal $000)

Line No.	Business Planning Element	2023 - 2025 Forecast			
		SCE Application	Cal Advocates	Cal Advocates Variance from SCE	SCE Rebuttal Position
1	OU Captalized Software	390,249	341,416	(48,833)	346,395
2	**Total**	390,249	341,416	(48,833)	346,395

Line No.	Business Planning Element	SCE Recorded					SCE Rebuttal Position			
		2018	2019	2020	2021	2022	2023 Recorded	2024 Forecast	2025 Forecast	Total 2023-2025
1	OU Captalized Software	121,000	97,604	98,035	117,677	129,288	127,650	117,883	100,862	346,395
2	**Total**	121,000	97,604	98,035	117,677	129,288	127,650	117,883	100,862	346,395

[4] SCE-06, Vol. 2, p. 5.

II.

TECHNOLOGY DELIVERY

A. O&M Expenses

1. SCE Application

The Technology Delivery work activity is responsible for the execution of non-routine system enhancements and implementation of the capital software projects for SCE's OUs that are requested in Ex. SCE-06, Volume 02, OU Capitalized Software. This includes the overall project management required end-to-end across the necessary planning, design, business case approvals, and implementation. In addition to the execution of the project, the Technology Delivery activity encompasses management of transitioning the software to a live state in production and post-implementation stabilization activities, as well as verifying business readiness of the technology deployment. In instances where technology deployment impacts many users, the Technology Delivery team also leads the organizational change management (OCM) activities.

In addition to the delivery services, this GRC activity also includes O&M expenses incurred to support capitalized software projects across SCE's BPGs. These O&M expenses consist of the non-capital activities required to develop and implement capitalized software including pre-project planning activities, delivery of end-user training associated with the technology, and OCM.

Finally, this GRC activity includes certain projects which are mostly or completely O&M. These projects are typically small (<$250,000) and address targeted requirements in a specific area of our business or are not focused on new assets. These O&M projects primarily involve minor installation of small-scale new products when SCE does not have the software capability within our existing portfolio.[5]

Table II-4 below shows Technology Delivery O&M 2018-2022 recorded amounts and the 2025 Application forecast, adjustment for errata discovered in the process of developing rebuttal testimony, and SCE's rebuttal forecast. The errata for non-labor is reflected in the updated SCE-06, Vol. 1, Workpapers, p. 20 and is included in the Appendix to this testimony. The revised 2025 O&M forecast totals $9.306 million, which is also SCE's rebuttal position.

[5] See Ex. SCE-06, Vol. 1, pp. 25-37.

Table II-4
Technology Delivery O&M
Recorded 2018-2022 And Forecast 2025
Summary Of SCE And Cal Advocates Positions
(2022 Constant $000)

Line #	Category	SCE Recorded					2025 Forecast			
		2018	2019	2020	2021	2022	SCE Application	Cal Advocates	Cal Advocates Variance from SCE	SCE Rebuttal Position
1	Labor	3,524	5,958	6,070	5,439	6,218	6,450	6,450	-	6,450
2	Non-Labor	9,356	5,814	3,752	2,091	2,047	3,646	2,047	(1,599)	2,856
3	Other								-	
4	**Total**	12,881	11,772	9,821	7,530	8,265	10,097	8,497	(1,599)	9,306

2. Cal Advocates' Position

Cal Advocates opposes SCE's adjusted Non-Labor forecast of $2.856 million. Cal Advocates describes SCE's forecast method for Non-Labor as based on identifying individual projects and their respective costs (i.e., itemization) for each year from 2026 - 2028, and then increasing the forecast by 3%.[6]

Cal Advocates recommends a Test Year non-labor forecast of $2.047 million, a reduction of $1.599 million based on the Last Year Recorded forecast method. Cal Advocates selects the Last Recorded Year as the appropriate forecast method because of a downward trend in historical non-labor costs and a purported lack of evidence on whether the itemized forecast method is better indicator than the Last Recorded Year as well as the itemized forecast method used for this area in the last GRC resulting in significant overcollection.[7]

3. SCE's Rebuttal To Cal Advocates' Position

a) Cal Advocates Misinterprets SCE's Forecasting Method For Non-Labor O&M

Cal Advocates describes SCE's Test Year 2025 forecast for Non-Labor as based on identifying individual projects and their respective costs (i.e., itemization) for each year from 2026 – 2028; increasing that itemized forecast by 3% for the years 2026 – 2028; and then summing the forecast and dividing by six (6) to "normalize" the forecast.[8] This description of SCE's forecast inaccurate.

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[6] *See* Ex. CA-17, pp. 8-9.

[7] *See* Ex. CA-17, p. 9.

[8] *See* Ex. CA-17, pp. 8-9.

Technology Delivery's Non-Labor forecast uses a modified itemized forecast. The forecast was developed based on 1) itemized forecast for *known* O&M resulting from OU Capitalized Software projects forecast in 2023-2028; 2) adding an adjustment of the non-itemized portion of the OU Capitalized Software forecast from 2025-2028 to account for the related O&M in those years because not all of the projects forecast for those years are itemized and therefore no O&M forecast exists, up to 3% of the OU Capitalized Software Projects; 3) miscellaneous O&M expenses; and 4) normalizing the resulting forecast for the years 2025-2028. The forecast was normalized by summing the individual forecast for each of the four years (2025-2028) and dividing the sum by four.[9]

Cal Advocates' description is not correct as SCE's forecast was itemized for known O&M for 2023-2028, then was adjusted *up to* 3% of the OU Capitalized Software Projects, not *by* increasing the forecast by 3%. The description of SCE's forecast by Cal Advocates exaggerates the adjustment that was made for unknown projects. Additionally, the forecast was normalized by summing the individual forecast for each of the four years 2025-2028 and dividing the sum by four, not dividing by six (6).

b) <u>SCE's Modified Itemized Forecast Is A More Reasonable Forecast Method Than The Last Year Recorded For Technology Delivery's Non-Labor Expense</u>

The modified itemized forecast method (described above) is the more appropriate forecasting method for Technology Delivery Non-labor O&M expenses compared to the Last Recorded Year forecast method proposed by Cal Advocates. As detailed in testimony, Technology Delivery's non-labor forecast is dependent on the OU Capitalized Software forecast, which drives the Non-labor expense. The modified itemized forecast method includes a portion of identified forecast projects with detailed non-labor forecasts and a second portion of forecast that does not have detailed project non-labor forecasts developed yet. This hybrid method is more appropriate given the fact that technology products and operating systems change rapidly and pinpointing an exact forecast multiple years in the future can be challenging and lead to large variances.

On the other hand, the Last Year Recorded method focuses on past performance in a single year only, to predict future spend, without taking into account both the historical, as well as

[9] *See* Appendix B: Workpapers, Technology Delivery Non-Labor Rebuttal. Normalizing the forecast is necessary so the 2025 Test Year forecast does not over or under forecast the O&M for the entire GRC period.

the forecasted, fluctuations in the underlying cost driver – the OU Capitalized Software forecast.[10] By way of example only, for 2023, Technology Delivery recorded $2.338 million of Non-Labor expenses, which is higher than the amount Cal Advocates forecasts for 2025 using its Last Year Recorded method based on a single year of recorded costs.

SCE's forecast should be adopted as reasonable and a more appropriate method than the last recorded year method because it is based upon the known and unknown OU Capitalized Software project forecast. Cal Advocates recommendation to use the Last Year recorded method should be rejected because it does not consider the underlying driver of OU Capitalized Software projects forecast – a forecast that Cal Advocates generally does not challenge[11] – in its calculation.

c) The Underspend Of Authorized Compared To Recorded For 2021-2022 Does Not Void The Reasonableness Of The Modified Itemized Forecast Method

As explained in testimony, Technology Delivery's underspend compared to authorized was driven by changes in capital-related expenses and O&M projects, namely (1) further assessment of planned work that determined capital treatment to be the more appropriate treatment for the project, and (2) the optimization of expenses in the delivery phases for certain software.[12] More specifically, the underspend in 2021-2022 is explained by the overall improvements in efficiencies and the lower costs of project deliverables. This does not invalidate the reasonableness of the itemized forecast methodology for the 2025 Test Year. The efficiencies and improvements SCE was able to achieve, resulting in lower recorded costs, is then built into SCE's modified itemized forecast going forward. SCE's past underspend to authorized, particularly in one or two years, are not expected to reoccur in this GRC period, and should not be used as a basis to reduce SCE's Technology Delivery Non-Labor forecast.

4. Conclusion

The Technology Delivery Non-Labor work required to maintain quality and reliability of project implementation of the capital software projects for SCE's OU Capitalized Software is most

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[10] SCE notes here that Cal Advocates only challenged SCE's 2023 forecasted costs for OU Capitalized Software. Cal Advocates did not challenge SCE's OU Capitalized Software forecast for 2024-2028. SCE also notes that SCE's "forecast" for 2023 is now a recorded amount, and no longer a "forecast," and therefore the recorded amount (SCE-11) should be adopted. *See* Ex. SCE-18, Vol.1, Ch. VI.

[11] Cal Advocates only challenges SCE's 2023 OU Capitalized Software forecast.

[12] Ex. SCE-06, Vol. 1, p. 21.

reasonably forecast with the modified itemized forecast method, as described above. SCE's Technology Delivery Non-Labor O&M forecast of $2.856 million should be approved.

III.

DIGITAL & PROCESS TRANSFORMATION

A. O&M Expenses

1. SCE Application

The Digital & Process Transformation (DPT) work activity is responsible for transforming the most critical processes within SCE through process analysis and user-centered design. DPT enables business operations with digital solutions, supported by advanced analytics for data driven decision making. This approach is aligned with the overall continuous improvement culture which is one of SCE's core values. The priority areas for DPT solutions include the development and implementation of software tools that leverage Digital & Mobile Solutions, Advanced Analytics, Robotic Process Automations, and Emerging Technologies. The team works closely with core IT to review software architecture, provide engineering best practices, and guide teams on technology strategy. This enables SCE to respond to digital trends and leverage technologies to address the needs of employees, contractors, and customers. Over the past four years, the team delivered solutions in the areas of mobile applications, robotic process automations, and advanced analytics, which span the functional areas of T&D field operations, Customer Service operations, and back-office operations. Each of these solutions contributed to risk buy-downs, quality improvements, customer satisfaction, and operational efficiency, resulting in estimated cumulative benefits of over $84 million through 2023 and ongoing benefits of over $45 million annually.[13] We expect a similar benefit to cost ratio (BCR) of over 120% for future solutions going forward.

Table III-5 below shows DPT's O&M 2018-2022 recorded amounts, the 2025 Application forecast, SCE's rebuttal forecast, and Cal Advocates' forecast position. For Test Year 2025, DPT forecasts $11.408 million in O&M expenses. SCE developed this forecast based on the continued high demand for Digital & Mobile Solutions, Advanced Analytics, Robotic Process Automations, and Emerging Technologies, and as such the labor forecast includes increases of 20%, 15% and 14% for 2026, 2027, and 2028 respectively, year over year.[14]

[13] *See* Data Request Response for PubAdv-SCE-150-LMW Q.4; PubAdv-SCE-235-LMW Q.1 and Q.4b.

[14] Note that these 2026-2028 increases have been normalized.

Table III-5
Digital & Process Transformation O&M
2018-2022 Recorded/2025 Forecast
Summary Of SCE And Cal Advocates Position
(2022 Constant $000)

Line #	Category	SCE Recorded					2025 Forecast			
		2018	2019	2020	2021	2022	SCE Application	Cal Advocates	Cal Advocates Variance from SCE	SCE Rebuttal Position
1	Labor	133	3,681	3,256	2,872	2,879	9,989	2,879	(7,110)	9,989
2	Non-Labor	774	2,007	2,150	2,319	1,419	1,419	1,419	-	1,419
3	Other								-	
4	**Total**	908	5,688	5,405	5,191	4,298	11,408	4,298	(7,110)	11,408

2. Cal Advocates' Position

Cal Advocates forecasts $4.298 million for DPT, using 2022 recorded costs as its Last Recorded Year (LRY) forecast method in comparison to SCE's Test Year forecast of $11.408 million, a reduction of $7.110 million. Cal Advocates' bases its forecast recommendation on the purported lack of adequate justification for SCE's request for additional employees. Cal Advocates further notes that SCE's expects cost savings from the DPT-developed solutions are not included in this application because the future solutions/savings are unknown at this time.[15]

3. SCE's Rebuttal To Cal Advocates' Position

a) Cal Advocate Misstates SCE's Request For Additional Resources And Its Recommendation Does Not Consider The Demonstrated Increase In Demand For DPT Work

DPT includes in its forecast an additional 93 full time resources[16] over a six-year period from 2023-2028 (an average of 15.5 resources per year), not the over 100 that Cal Advocates described. As stated in testimony[17] and in data request responses,[18] demand for DPT work continues to outpace the capacity of SCE's existing resources to deliver technology solutions.

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15 *See* Ex. CA-17, pp. 11-12.

16 Cal Advocates' statement that SCE adds more than 100 employees includes part time employees. See Ex. SCE-06, Vol. 1, Workpapers, pp. 31-35.

17 *See* Ex. SCE-06, Vol. 01, pp. 26 – 28 and 36.

18 *See* PubAdv-SCE-150-LMW Q.8.a, PubAdv-SCE-235-LMW Q.5a, PubAdv-SCE-236-LMW Q.4.c & Q.5.

In developing our GRC request, DPT forecasted demand based on our historical experience. This included estimating the addition of new use cases each year, the removal of use cases that may not be feasible or have a positive business case, and the number we expect to complete based on our resource level. Cal Advocates recommendation does not consider the backlog of 150+ use cases that SCE provided as a starting point for our forecast at the end of 2022,[19] nor the continued growth in demand.

As evidence of the continued growth in demand, in 2023, DPT added 255 new use cases (against an estimated number of 150 new use cases annually[20]), which is a 70% ((255-150)/150) increase over our original forecasted demand. Business demand to further utilize technologies like artificial intelligence, robotic process automation and other emerging technologies as discussed in testimony,[21] creates a strong need for the DPT team to deliver solutions that provide more value to the company. For transparency and to depict the basis of our forecast, Table III-6 below shows the forecasted amount of use cases for 2023 versus the actual use cases that were added, removed and completed. The table clearly depicts that the actual demand for DPT developed solutions surpassed our forecasted demand.

Table III-6
Digital & Process Transformation
Forecast And Recorded Use Cases For 2023[22]

Line	Description	2023 Forecast	2023 Actual
1	Begining Backlog	150	153
2	New Use Cases Added	150	255
3	Use Cases Removed	-45	-46
4	Use Cases Completed	-35	-62
5	Ending Backlog	220	300

To achieve anticipated benefits in the 2025-2028 GRC period, SCE will need to have its requested increase in the size of DPT's workforce (93 additional employees between 2023 and

[19] *See* Data Request Response to PubAdv-SCE-235-LMW Q.5a-f.

[20] *See* Data Request Response to PubAdv-SCE-236-LMW, Q.5.

[21] *See* Ex. SCE-06, Vol. 01, p. 37.

[22] Appendix B, CONFIDENTIAL Workpapers: DPT Recorded Use Cases for 2023.

2028). In 2023, the first full year after the pandemic, DPT hired 13 new full-time resources and delivered 41% more solutions than in 2022. SCE's ability to deliver additional projects that help mitigate operational risks and avoid added costs to customers is commensurate with the increase in SCE's DPT forecast. The additional labor resources in the forecast, will enable DPT to proactively analyze many of SCE's current and future operational challenges in a timely manner, reducing inefficiencies, unresolved problems, and the risk of higher costs for customers.

b) Cal Advocates' Recommendation Fails To Consider Benefits Included In This Rate Case Based On Projects Implemented From The Last Rate Case.

The IT demand intake process provides a framework for capturing new use case opportunities and dispositioning the work to the appropriate group for execution. Those that fall into one of the four DPT categories of Digital and Mobile Applications, Advanced Analytics, Robotic Process Automation and Emerging Technology go through a scoring and classification exercise (including high level costs and benefits) and are then prioritized based on their feasibility and value (to the customer or OU and SCE). These are then reviewed and approved to proceed with a Proof of Technology (POT), Proof of Concept (POC) or Minimum Viable Product (MVP) solution as appropriate. The beginning of the MVP process includes the completion of a detailed business case (cost and benefits) and the rest of the process utilizes key methodologies including design thinking, process optimization and agile development to ensure an effective solution. Following the completion of the MVP, the solution is capitalized as appropriate and a well-defined acceptance criteria employed to transition the solution to operations.[23] Depending on the solution implemented, the savings for every project will vary and produce benefits in one, two, or more years after implementation.[24,25] In this rate case, SCE factored in cost savings for DPT projects implemented before December 2022, that resulted in a benefit-to-cost (BCR) ratio of 126% for both hard and soft benefits,[26] and a BCR of 57% if only considering hard savings.[27] It is important to emphasize the importance of the soft benefits which include avoided costs,

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[23] *See* Data Request response to PubAdv-SCE-235-LMW, Q.6.

[24] *See* Data Request response to PubAdv-SCE-068-LMW, Q.2 revised.

[25] For example, as depicted in SCE's response to PubAdv-SCE-235-LMW, Q.4.b, benefits for project such as Arbora, WorkIt, and Small Tools were realized one or two years post the implementation.

[26] *See* Data Request response to PubAdv-SCE-150-LMW, Q 4 Revised.

[27] *See* Data Request response to PubAdv-SCE-150-LMW, Q 4 Revised, PubAdv-SCE-235-LMW, Q.4a and Q4g, Revised 2.

efficiency improvements, improved reliability, data quality and safety as well as reductions in risk[28] in achieving SCE's goals.

In its testimony, Cal Advocates argues that SCE has not accounted for these cost savings in this rate case, and so recommends that SCE's forecast be reduced to its 2022 recorded costs only. In making this recommendation, Cal Advocates fails to acknowledge that DPT's work from the last rate case period (2021-2023) has resulted in savings that reduced SCE's 2025 request within this rate case. For example, SCE included hard savings of approximately $18 million for Arbora, $11 million for WorkIt and $1.5 million for Small Tools in 2025 and continuing through this rate case.[29] As such, SCE has accounted for the recognized cost savings from DPT's work in this rate case, and will do the same with the anticipated savings in future years in its next rate case.

Lastly, an additional benefit of the methodology that DPT uses is improved insight for operational investment decisions. Providing quick, cost-effective evaluations and solutions using agile delivery techniques, such as those provided by DPT, are valuable in understanding the maturity of technology capabilities and the viability of specific solutions to avoid making unsuitable investment decisions. DPT's solution analysis minimizes purchase of solutions that haven't been vetted through a proof of technology, a proof of concept or minimal viable product, prior to making a full development and rollout investment decision. For example, purchasing wearables[30] that do not take into account personal protective equipment requirements, or emerging technologies that haven't been proven in a working SCE environment (e.g., smart hard hats and smart arm bands, or early versions of digital twin or block chain technologies) can lead to unnecessary cost for customers.

c) Cal Advocates' Recommendation To Use 2022 Recorded Costs For O&M Is Not Representative Of Future Costs Needed To Deliver Required Solutions

Cal Advocates' recommendation to reduce SCE's DPT forecast to 2022 recorded costs ignores the following three key factors that make 2022 unrepresentative of what SCE's future costs will be. First, in 2022, a number of DPT labor resources were funded by other activity areas to deliver solutions. For example, IT OU project funding was used for the DPT MVP work for WorkIt, and Wildfire accounts were used to fund the DPT MVP work for Arbora and advanced analytics computer

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[28] *See* SCE's data request response to PubAdv-SCE-235-LMW, Q.4.c.

[29] *See* Data Request response to PubAdv-SCE-150-LMW, Q 4 Revised, PubAdv-SCE-235-LMW, Q.1.

[30] Wearable technology is any kind of electronic device designed to be worn on the user's body. Common types of wearable technology include smart watches and smart glasses.

vision models for inspections.[31] Going forward, DPT labor resources will be funded by and focused on DPT use cases.

Second, the worldwide COVID pandemic impacted our ability to fill open positions. The difficulty SCE and many other companies had in hiring and retaining skilled workers during this period is well documented in business publications, supporting the challenges SCE has described. In 2023, the first full year after the pandemic, DPT hired 13 new full-time resources, increasing our O&M spend for labor by $1.26 million over 2022, and delivering 41% more solutions. DPT is forecasted to spend $5.7 million in O&M in 2024, delivering even more solutions.

Finally, SCE's 2023 recorded labor costs of $3.94 million (2022 constant), which was $1.06 million over 2022 recorded costs, provide further proof that using a LRY forecast methodology (2022 recorded costs) is not sufficient to address DPT's current and future labor needs.

4. Conclusion

SCE's testimony demonstrates the existing and continued increasing demand for innovative solutions that provide real value to customers. DPT's services have a proven track record of delivering value to customers through cost savings as well as operational efficiencies. Cal Advocates' proposed reductions to SCE's forecast are simply not justified. Without the additional funds to hire additional resources, SCE will not be able to deliver on DPT's full potential. SCE's labor forecast of $9.989 million should be adopted.

B. Capital Expenditures

1. SCE Application

Capital expenditures in DPT are necessary to execute digital application solutions, advanced analytics, robotic process automations and emerging technology prototypes. Planning, development, and implementation work for DPT solutions include targeted use cases (excluded from the OU capitalized software project portfolio) to meet specific capability needs for the business, as well as multiple technology solutions packaged together in support of end-to-end process transformations.[32] These projects include capital costs such as contract labor for software development, software tool purchases and accompanying prepaid maintenance, tool implementation costs, and hardware costs.

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[31] *See* Data Request PubAdv-SCE-235-LMW, Q. 7.

[32] *See* Ex. SCE-06, Vol. 1, pp. 36-38.

Table III-7 below shows DPT's 2018-2022 recorded capital expenditures, the Application forecast, SCE's rebuttal forecast, and Cal Advocates' forecast position. SCE's forecast is based on the costs necessary to execute digital application solutions, advanced analytics, robotic process automations and emerging technology prototypes, based on the forecasted demand for solutions each year. DPT forecasted the demand based on our historical experience. This included estimating the addition of new use cases each year, the removal of use cases that may not be feasible or have a positive business case, and the number we expect to complete based on our resource level. SCE estimated these expenditures based on the level of staffing necessary to support the volume of initiatives that it forecasts will be undertaken in each year.[33] SCE's rebuttal position recommends update of the 2023 forecast to the actual recorded amount for 2023.[34]

Table III-7
Digital & Process Transformation Capital Expenditures
2023-2025 Forecast
Summary Of SCE And Cal Advocates Positions
(Nominal $000)

Line No.	Business Planning Element	2023 - 2025 Forecast			
		SCE Application	Cal Advocates	Cal Advocates Variance from SCE	SCE Rebuttal Position
1	Digital & Process Transformation	28,329	17,466	(10,863)	30,047
2	**Total**	28,329	17,466	(10,863)	30,047

Line No.	Business Planning Element	SCE Recorded					SCE Rebuttal Position			
		2018	2019	2020	2021	2022	2023 Recorded	2024 Forecast	2025 Forecast	Total 2023-2025
1	Digital & Process Transformation	3,336	3,703	4,940	5,735	5,822	11,026	9,473	9,548	30,047
2	**Total**	3,336	3,703	4,940	5,735	5,822	11,026	9,473	9,548	30,047

2. Cal Advocates' Position

For 2023-2025, Cal Advocates recommends $5.822 million per year for DPT's capital forecast based on the LRY of 2022 recorded expenditures. Cal Advocates states that part of its rationale

[33] *See* Ex. SCE-06, Vol. 1, pp. 25-37.

[34] *See* Ex. SCE-11 for SCE's 2023 recorded capital expenditures and Ex SCE-18, Vol. 01, Ch. VI for SCE's proposal that the Commission authorize SCE's 2023 recorded expenditures in place of SCE's original 2023 forecast across the case. For DPT, the 2023 recorded capital expenditures were $11.026 million compared to a forecast of $9.308 million.

to support its forecast method is for the same reasons as it opposed the addition of additional FTEs[35] – lack of support and SCE's non recognition of savings in this GRC.[36] Additionally, Cal Advocates argues that there is no proof that capital costs would be charged to the DPT activity, as opposed to continuing to be charged to OU Capitalized Software.[37] Cal Advocates further justifies its recommendation based on the possibility that SCE will internally develop capital assets that may meet SCE's capitalization guidelines.[38]

3. SCE's Rebuttal to Cal Advocates' Position

a) The Capital Forecast is Necessary to Fund Additional Resources to Achieve the Future Savings From DPT's Projects

The capital request is required to deliver the solutions necessary to achieve future operational benefits from DPT projects. As discussed in Section 3.a above, in making its recommendation to reduce SCE's forecast to LRY, Cal Advocates did not consider the high DPT demand backlog, and a backlog that in 2023 actually grew at a rate of 42% greater than forecasted. DPT has a track record of delivering benefits since the group was established, with a benefit to cost ratio (BCR) of 126% [39] for hard and soft benefits and 57% [40] when looking at just the hard financial savings.[41] SCE's ability to deliver additional projects that help mitigate operational risk and avoid added costs to customers is commensurate with the increase reflected in SCE's DPT forecast levels. The additional labor resources[42] in the forecast, will enable DPT to proactively analyze many of SCE's

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35 Cal Advocates' representation that SCE plans to add over 100 FTEs is incorrect. SCE's GRC forecast accounted for 93 FTEs over 2023-2028 (an average of 15.5 resources per year). See SCE-06, Vol. 1, Workpapers, pp. 31-35.

36 *See* Ex. CA-17, pp. 29-32.

37 *See* Ex. CA-17, p. 31.

38 *See* Ex. CA-17, p. 32.

39 *See* Data Request Response to PubAdv-SCE-150-LMW, Q. 4 Revised.

40 *See* Data Request Response to PubAdv-SCE-235-LMW, Q 4.g Revised 2.

41 It is important to emphasize the importance of the soft benefits which include avoided costs, efficiency improvements, improved reliability, data quality and safety as well as reductions in risk in achieving SCE's goals. See SCE's data request response to PubADV-SCE-235-LMW, Q.4.c.

42 The forecasted increase for additional resources from 2023-2028 is relevant to both the capital and O&M requests as the cost for these activities are split between capital and O&M as outlined in SCE's data request response to PubAdv-SCE-150-LMW, Q.8.A.

current and future operational challenges in a timely manner, reducing inefficiencies, unresolved problems and the risk of higher costs for customers.

b) Cal Advocates' Argument That DPT Resources Will Continue To Charge OU Capitalized Software Is Incorrect.

Cal Advocates states that there is no definitive proof that capital costs would be charged to the DPT activity, as opposed to continuing to be charged to other budgets, especially relative to the historic data.[43] This is incorrect. While a number of DPT labor resources were funded by other activity areas to deliver solutions in 2022 (e.g., IT OU project funding was used for the DPT MVP work for WorkIt, and Wildfire accounts were used to fund the DPT MVP work for Arbora and advanced analytics computer vision models for inspections,[44]) in 2023, these DPT resources were funded through DPT, which will continue going forward. This is demonstrated by the higher 2023 recorded capital costs of $11.026 million.[45] In other words, SCE did not transfer resources out of the DPT team to complete WorkIt and Wildfire projects, but rather funds from those areas were allocated to DPT to develop and implement the solutions. This was not a transfer of work or resources, but rather an accounting exercise. Going forward, as explained and demonstrated above, DPT will be funding this work.

DPT works closely with the IT Portfolio groups who manage the OU Capitalized software budgets. However, the demand backlog in the DPT area is unique and separate from the list of projects targeted for delivery using OU Capitalized Software. This means the capital requested by DPT is required to develop and deliver the DPT-identified demand and associated benefits separate from OU Capitalized solutions. As discussed above, this demand has outpaced the capacity of the team needed to deliver these solutions, requiring approval of SCE's full capital request here.

Moreover, DPT solutions will result in benefits for customers regardless of which GRC activity is funding the project. The fungibility of capital funds allows the Company to allocate capital to fund DPT resources and work (whether they are charged to DPT or elsewhere), which contributes to more efficient and cost-effective operations.

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[43] Ex. CA-17, p. 31.

[44] *See* Data Request PubAdv-SCE-235-LMW, Q.7.

[45] *See* Ex. SCE-11 for SCE's 2023 recorded capital expenditures and Ex SCE-18, Vol. 01, Ch. VI for SCE's proposal that the Commission authorize SCE's 2023 recorded expenditures in place of SCE's original 2023 forecast across the case.

c) Cal Advocates' Assertion That Internally Developed DPT Solutions That May Meet Capital Guidelines Is A Reason For Reducing The Capital Request Is Wrong

Cal Advocates considers its recommendation reasonable because SCE based its forecast on the possibility of internally developing capital assets that may meet SCE's capitalization guidelines, as opposed to purchased assets, similar to software subscriptions or licenses or hardware, that upon purchase meet SCEs capitalization guidelines.[46] Cal Advocates argument misses the point. It does not matter whether solutions are purchased or internally developed; if the solutions meet capital accounting guidelines, SCE will capitalize them. Additionally, DPT's capital expenditures include project costs such as software tool purchases and accompanying prepaid maintenance, tool implementation costs, hardware costs and the associated labor to develop and implement the solutions.[47] These solutions typically require development and customizations *even if* there are purchased licenses, subscriptions, or hardware as part of the initiatives. In addition, we have already reduced our capital request to take into account projects that may not meet capital guidelines,[48] to ensure we are requesting only the capital required to perform the services necessary to deliver business solutions.

Finally, DPT has a proven track record of delivering internally developed capital project solutions such as Arbora, Small Tools, and WorkIt. Together, these projects result in $29.3 million hard financial benefits (O&M and capital) in 2025, directly to the benefit of customers.[49] DPT also developed approximately 140 other solutions from 2019-2022[50] delivering additional cumulative soft benefits estimated at $69.9 million.[51]

4. Conclusion

DPT's capital forecast of $9.548 million in 2025 is necessary to deliver the required solutions to achieve the benefits described in testimony for our customers. Additional capital resources are needed to deliver on the continued increasing demand for our services. DPT has a demonstrated

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[46] Ex. CA-17, p. 32.

[47] *See* Ex. SCE-06, Vol. 1, p. 38.

[48] *See* Data Request Response to PubAdv-SCE-150-LMW, Q.8.a.

[49] *See* Data Request Response to PubAdv-SCE-235-LMW, Q.4.b.

[50] *See* Data Request Response PubAdv-SCE-235-LMW, Q.5.e.

[51] *See* Data Request Response to PubAdv-SCE-235-LMW, Q.4.a-b.

track record of delivering value to customers through cost savings and operational efficiencies. SCE's DPT capital forecast should be adopted.

IV.

SOFTWARE MAINTENANCE & REPLACEMENT

A. O&M Expenses

1. SCE Application

The Software Maintenance and Replacement work activity includes costs required to maintain SCE's operating software assets through on-premise licenses, off-premise licenses (cloud), subscription, and maintenance contract agreements. This activity also includes refreshes of the core Operating Software comprised of operating systems, business intelligence systems, database management systems, cross-system integration tools, IT monitoring tools, and end-user productivity and collaboration software which enable business applications enterprise wide to take advantage of the underlying hardware features and functions to deliver efficient and high-quality services to our customers. Lastly, this work activity includes application refresh activities, which consist of the management, upgrade, maintenance, optimization, monitoring, and testing of about 700 existing IT business applications and more than 5,000 interfaces through their lifecycles. This work is divided into four sub-work activities: (1) Perpetual License; (2) Software as a Service (SaaS); (3) Cloud; and (4) Application Refresh and were estimated utilizing itemized forecasting methodology.[52] Perpetual License, SaaS, and Cloud are discussed together below due to their interrelationship, with Application Refresh following. Table IV-8 below shows Software Maintenance & Replacement O&M 2018-2022 recorded amounts, the 2025 Application forecast, SCE's rebuttal forecast, and Cal Advocates' forecast position. Cal Advocates' overall position and SCE's response is summarized below.

[52] Ex. SCE-06, Vol. 1, pp. 48-50.

Table IV-8
Software Maintenance & Replacement O&M
2018-2022 Recorded/2025 Forecast
Summary Of SCE And Cal Advocates Positions
(2022 Constant $000)

Line No.	Category	SCE Recorded					2025 Forecast					
		2018	2019	2020	2021	2022	SCE Application	SCE Adjustment	SCE Revised Forecast	Cal Advocates	Cal Advocates Variance from SCE	SCE Rebuttal Position
1	Application Refresh	12,181	12,757	15,061	15,267	25,091	36,158	(459)	35,699	18,404	(17,295)	31,039
2	Cloud	18,822	25,002	28,108	36,491	39,861	57,010		57,010	53,361	(3,649)	57,010
3	Perpetual License	51,503	40,898	38,643	36,253	36,825	68,288		68,288	36,825	(31,463)	68,288
4	Software Maint. & Replacement		1,522	307	187	22			0		0	0
5	Software as a Service (SAAS)				(1)				0		0	0
6	**Total**	82,506	80,179	82,119	88,199	101,799	161,456	(459)	160,997	108,590	(52,407)	156,337

2. Cal Advocates' Overall Position

Cal Advocates opposes SCE's Test Year forecast for each Cloud, Perpetual License, and Application Refresh and states that SCE has not provided enough evidence to support an overall incremental increase of almost 59% from the Last Recorded Year (2022) to Test Year 2025. Cal Advocates argues that SCE has not provided enough evidence to support an increase of 94% in Test Year 2025 based on a 4-year average ($83.251 million) of historical costs from 2018-2021. Additionally, Cal Advocates notes that SCE's previous GRC forecast was based on a similar itemized approach resulting in large underspends. Cal Advocates opposes using the same methodology in this instant GRC.[53] Cal Advocates proposes an overall Software Maintenance & Replacement O&M forecast of $108.590 million. The forecast methods Cal Advocates recommends by category are: Cloud – Last Recorded Year increased by $3 million and then normalized;[54] Perpetual License – Last Recorded Year;[55] Application Refresh – opposes the non-labor forecast for the three sub-categories of a) O&M projects – forecast method uses the recorded expenses for 2021 as the forecast for 2025,[56] b) Consulting and Professional Services – Last Recorded Year,[57] and Ongoing Maintenance – zero forecast based on no cost tracking.[58]

[53] Ex. CA-17, p. 14.

[54] Ex. CA-17, pp. 3 and 13, 18.

[55] Ex. CA-17, pp.18- 19.

[56] Ex. CA-17, p. 24.

[57] Ex. CA-17, p. 26.

[58] Ex. CA-17, p. 27.

3. SCE's Rebuttal to Cal Advocates' Overall Position

As discussed in SCE's testimony,[59] Software Maintenance and Replacement has experienced tremendous growth in recent years. SCE's forecast increase is mostly due to growing business needs to digitize our environment and support SCE initiatives impactful to customer satisfaction, affordability, reliability, safety, and quality in both Perpetual License, Cloud, and Application refreshes.[60] Cal Advocates' overall and subcategory forecast recommendations – which are largely based on a Last Year Recorded forecast method – simply ignore the business drivers of the forecast increases.[61]

SCE forecasts an incremental increase of 59% from 2022 to Test Year 2025 that is reasonable and supported by evidence of this tremendous growth. From 2021 GRC to this GRC period, the number of software license maintenance & subscription agreement line items have grown from 327 to 753 for Cloud and Perpetual Licenses. For the Application Refresh activity, the assets have grown from zero digital tools forecasted in the 2021 GRC to over 400 digital technologies currently in our environment. Moreover, the Application Refresh sub work activity is taking on initiatives that will manage the increasing data, which has led to increased costs. SCE, in general, is taking in more data as our interactions with customers continue to move towards more technology-based transactions, our customer meter-usage interval read transition from 60-minute to 15-minute collection, and our grid is becoming more modernized. SCE's forecast is reasonable, and following Cal Advocates' recommendation will be detrimental to reliability and security of our technology environment.

Lastly, Cal Advocates' four-year average (2018-2021) used to support its argument conveniently ignores 2022, which shows a sharp increase, ignores the variability between each sub work activity and Cal Advocates specific recommendations. In 2023, Software Maintenance & Replacement as a whole recorded $103.180 million, slightly above 2022 recorded of $101.800 million. Specifically, the four-year average Cal Advocates made was not used for any of the individual forecast recommendations, thus it should not be considered in determining the reasonableness in SCE's proposed forecast. Given the rapid pace at which technology is advancing, it should not be surprising that an average incorporating the earlier years of the GRC's historical period is going to be lower than SCE's

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[59] *See* Ex. SCE-06, Vol. 1, p. 49.

[60] *See* Ex. SCE-06, Vol. 1, p. 49.

[61] Ex. CA-17, pp. 13-14.

forecast. Specific Cal Advocates position recommendations and SCE's rebuttal for each sub work activity are discussed in the following sections.

4. Cloud And Perpetual License[62]

a) SCE Application

Most IT software license management is centralized in the Cloud and Perpetual License activity for technical, legal, and financial oversight and governance. The regular renewal of vendor maintenance contracts for our perpetually licensed products, as well as renewal of cloud and subscription agreements for our cloud and SaaS products, is necessary to ensure timely support in the event of critical system failures as well as uninterrupted access to Cloud and SaaS offerings. Maintenance renewals provide security updates, defects, performance improvements, and support for operating system upgrades. The maintenance support costs here are summarized in the O&M cost section of SCE's direct testimony.[63] If SCE does not implement the required maintenance, inclusive of critical security patches, the security of customer data and critical system infrastructure could be at risk. For example, in 2021, there was a global security flaw in the Log4j framework allowing cybercriminals to compromise vulnerable systems with just a single malicious code injection.[64] If SCE was not current with our maintenance agreements, SCE systems would have been impacted by this global security flaw, allowing cyber criminals the opportunity to take control of full systems. Additionally, many of our maintenance agreements are for proprietary products, where SCE does not have the source code for applications. In other words, SCE must depend on vendors to fix/address issues and receive security patches to these products.

The Cloud, Perpetual License, and SaaS sub-activity also monitors system capacity and asset lifecycles (obsolescence), reducing risk to system reliability and business productivity. Centralizing this activity for enterprise tools or technologies in IT helps provide consistent service terms with the vendors and helps to minimize duplication of tools or services across the company.

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62 Cloud also includes Software as a Service (SaaS).

63 *See* Ex. SCE 06, Vol. 1, pp. 60-62.

64 *See* Ex. SCE-06, Vol. 1, pp. 55-56.

Table IV-9 below shows the O&M 2018-2022 recorded amounts, the 2025 Application forecasts, SCE's rebuttal forecasts, and Cal Advocates' forecast positions for both Cloud and Perpetual License.

Table IV-9
Cloud And Prepetual License O&M
2018-2022 Recorded/2025 Forecast
Summary Of SCE And Cal Advocates Positions
(2022 Constant $000)

Line No.	Category	SCE Recorded					2025 Forecast			
		2018	2019	2020	2021	2022	SCE Application	Cal Advocates	Cal Advocates Variance from SCE	SCE Rebuttal Position
1	Cloud	18,822	25,002	28,108	36,491	39,861	57,010	53,361	(3,649)	57,010
2	Perpetual License	51,503	40,898	38,643	36,253	36,825	68,288	36,825	(31,463)	68,288
3	**Total**	51,503	40,898	38,643	36,255	36,825	125,298	90,186	(35,112)	125,298

b) Cal Advocates' Position On SCE's Cloud Forecast

Cal Advocates opposes SCE's "itemized" plus increase for capacity growth forecast approach. Instead, Cal Advocates recommends a reduction of $3.649 million based on a forecast method that begins with the Last Recorded Year (2022) and adds $3 million per year from 2023-2028 to account for the approximate historical increases (e.g., in 2015-2016, 2019-2020 and 2021-2022), and then normalizes the 2025-2028 period. Cal Advocates' forecast method based on the historical data reflects an upward trend and results in a Test Year 2025 forecast increase of 43%. Cal Advocates agrees that there is an upward trend but opposes SCE's itemized forecast and asserts that its forecast would "best represent the costs required for operational support of existing applications."[65]

[65] See Ex. CA-17, pp. 16-18. See also Ex. SCE-06, Vol. 01, p. 62 (lines 13-17).

c) SCE's Rebuttal To Cal Advocates' Position - Cloud

(1) SCE's Itemized Approach Is Based On Actual Vendor Contract Agreements

SCE's Cloud 2025 O&M forecast of $57.010 million is based on an itemized forecast method, which includes 251 separate line-items for the cloud software in inventory. These line items are primarily supported by signed vendor contract agreements.[66]

Yet, in arriving at its forecast, Cal Advocates ignores SCE's detailed forecast method and the supporting vendor agreements. Cal Advocates requested a copy of the 63 agreements that were over $800,000 during discovery.[67] Cal Advocates' testimony does not question the validity of these contracts nor does Cal Advocates even suggest that the contract terms or pricing contained therein are unreasonable. In Cal Advocates' recommendation for annual increases of $3.0 million per year, it cites SCE's Data Request response as support that stated software maintenance renewals increase by an average of approximately $3.0 million per year for on-going subscription/cloud costs transitioned from projects that previously were capitalized.[68] SCE based this statement on an analysis of itemized vendor agreements that were provided to Cal Advocates.[69] Cal Advocates implicitly accepts the validity of these vendor agreements, by using them to support its recommendation that the Cloud forecast be based on LRY, plus a $3 million per year upward adjustment and normalized for the years 2025-2028. However, Cal Advocates conveniently overlooks these same contracts when selecting the Last Recorded Year base for its forecast method recommendation for 2025. The resulting difference between using the Last Recorded Year versus the actual vendor contracts as the forecast base is a $3.649 million reduction in the 2025 Test Year forecast ($57.010 million in vendor contracts less 2022 LRY 2022 $53.361 = $3.649 million).[70] Cal Advocates did not provide any explanation why it used the result of the data analysis from the itemized contracts forecast to determine its proposed $3 million annual

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66 Out of 251 line items, 37 line items are costs based on planned OU Cap Software projects that will transition into this sub work activity. See SCE-06, Vol. 1, CONFIDENTIAL Workpaper pp. 1-71.

67 In Data Request response to Cal Advocates CONFIDENTIAL PubAdv-SCE-188-LMW, Q.16, Cal Advocates asked for evidence of items greater than $800,000, SCE provided 63 vendor agreement documents which provided the basis of our forecast.

68 SCE's response to data request PubAdv-SCE-083-LMW, Q.4e.

69 SCE's response to data request PubAdv-SCE-188-LMW, Q.7.a-b.

70 Ex. CA-17, p. 14.

increases, yet rejects those very same vendor agreements in recommending use of the LRY method as the base for its proposed Cloud forecast.

The vendor agreements bind SCE to contractual terms, including the price for the Cloud services. As such, the vendor agreements are the best indicator of what SCE's base and future costs will be for these services. SCE's itemized forecast is based on just that, the vendor agreements, and should be accepted as reasonable.

In addition, Cal Advocates did not express any concerns regarding SCE's explanation of the reasons for the increases in the Cloud Category: (1) Growing business needs to digitize our environment and support SCE's initiatives, (2) Movement to the cloud from on-premise solutions, and (3) year-over-year vendor pricing increases and growth.[71] SCE quantified the costs of each of these drivers for both 2022 (recorded costs) as well as for TY 2025. These amounts, shown in Table IV-10 were developed using the vendor agreements that form the basis of SCE's itemized forecast.[72] It is clear that Cal Advocates simply did not take into account these uncontested reasons for increased costs in Cloud Software, when it recommended its lower forecast.

[71] *See* Data Request Response to PubAdv-SCE-243-LMW, Q.6.

[72] *See* Appendix B, Workpapers, CONFIDENTIAL Cloud Increases, for detailed information regarding the vendor agreements and the reasons for the cost increases in the Cloud sub-activity.

Table IV-10
Cloud Software
2022 Recorded Vs. Test Year 2025- Reasons For Increases[73]
Constant 2022 $ Millions

Line	Category	2022 Recorded	2025 Normalized (Average of 2025-2028)	2025 Normalized (Average of 2025-2028) versus 2022 Recorded
1	Growing business needs to digitize our environment and support SCE initiatives impactful to customer satisfaction, affordability, reliability, safety, and quality	12.46	22.70	10.25
2	Movement to the Cloud as most new functionalities are primarily not available on premises and related limitations on accounting rules	11.77	18.83	7.05
3	Year-over-year vendor pricing increases and growth in licenses for new users	15.63	15.48	(0.15)
4	**Total**	**39.86**	**57.01**	**17.15**

(2) Cal Advocates' Recommended Forecast Method of Last Year Recorded Plus $3 Million Increase Does Not Consider All Historical Increases

Cal Advocates asserts that utilizing the Last Recorded Year forecast method and adding a $3 million increase annually "approximates historical increases (e.g., 2015 - 2016, 2019 - 2020, and 2021 - 2022)."[74] However, in arriving at the $3 million annual increase, Cal Advocates cherry-picked certain years and ignored other years where the annual increase was actually *higher* than $3 million. Cal Advocates' Last Recorded Year plus historical annual increase of $3 million with normalization is designed to lower the forecast for this activity. Table IV-11 below shows SCE's historical recorded Cloud costs from 2015 to 2023 (Line 1), and also illustrates calculations for historical increases considering several possible options that do not omit contiguous years (Lines 2-5); each of these options results in average annual historical increases that are higher than $3 million ranging from

[73] SCE's response to data request PubAdv-SCE-243-LMW, Q.6.

[74] Ex. CA-17, p. 18.

$4.194 - $5.295 million, and would result in a *higher* normalized TY 2025 forecast than what SCE is requesting here.

Table IV-11
Historical Averages Of Historical Recorded Cloud Costs[75]
2022 Constant $000

Line	Category	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average Increases	Total Normalized Forecast
1	Historical Amount	10,444	12,817	21,441	18,822	25,002	28,108	36,491	39,861	43,994		
2	Year-to-Year Difference		2,373	8,624	(2,619)	6,180	3,106	8,383	3,370	4,133	4,194	58,733
3	Average Increase (2015-2022)		2,373	8,624	(2,619)	6,180	3,106	8,383	3,370		4,202	58,772
4	Average Increase (2020-2022)						3,106	8,383	3,370		4,953	62,150
5	Average Increase (2021-2023)							8,383	3,370	4,132	5,295	63,689
6	Cal Advocates Chosen Years: Year-to-Year Difference		2,373				3,106		3,370		2,950	53,361
7	SCE's Forecast											57,010

Table IV-12 below shows the calculations for arriving at the normalized forecast for 2025-2028 shown in Table IV-11, which utilizes Cal Advocates' methodology, but does not omit contiguous years.

[75] Average increases are calculated based on taking the difference between each year and taking an average.

Table IV-12
Forecast Calculations Utilizing Historical 2015-2023 And 3 Year Averages
2022 Constant $000

Line	Category	2022	2023	2024	2025	2026	2027	2028
1	LYR + Average Increase Year-to-Year Difference	39,861	44,055	48,249	52,442	56,636	60,830	65,024
2	Normalized				58,733			
3	LYR + Average Increase (2015-2022)	39,861	44,063	48,266	52,468	56,671	60,873	65,076
4	Normalized				58,772			
5	LYR + Average Increase (2020-2022)	39,861	44,814	49,767	54,720	59,673	64,626	69,579
6	Normalized				62,150			
7	LYR + Average Increase (2021-2023)	39,861	45,156	50,451	55,746	61,041	66,336	71,631
8	Normalized				63,689			

Taking the historical period that Cal Advocates considered (2015-2022), and adding in the omitted years (e.g., 2016-2017, 2017-2018, 2018-2019, and 2020-2021), results in an average increase of $4.2 million per year (Line 3 in Table IV-11).[76] Utilizing Cal Advocates' methodology of LRY plus increasing historical average, with normalization, results in a Test Year 2025 forecast of $58.7 million (an increase of $5.4 million compared to Cal Advocates' flawed method).[77] This is $1.69 million ***higher*** than SCE's actual forecast, based on its itemized vendor agreements, of $57.010 million.

Additionally, Cal Advocates' use of historical data beyond three years (older than 2020) is not representative of costs in the current IT environment and future state of technological advances and adoption in the cloud, since the cloud technology has been evolving rapidly in recent years, a trend that is expected to continue during the GRC period. Utilizing Cal Advocates' recommended forecast method of Last Recorded Year plus average recorded cost increases from 2020 to 2022 of $4.95 million per year (Line 4 in Table IV-11), results in a Test Year forecast of $62.2 million (an increase of $8.9 million compared to Cal Advocates method), and again, $5.19 million ***higher*** than

[76] *See* Table IV-10 and Appendix B, Workpapers: Cloud All Historical Increases To Forecast.

[77] *See* Table IV-11 and Appendix B, Workpapers: Cloud All Historical Increases To Forecast.

SCE's itemized forecast of $57.010 million.[78] If we utilize even more recent data, utilizing Cal Advocates' recommended forecast method of Last Recorded Year plus average recorded cost increases from 2021 to 2023 of $5.295 million dollars per year (Line 5 in Table IV-11), the result is a Test Year forecast of $63.7 million (an increase of $10.328 million compared to Cal Advocates method) and, once again, $6.69 million higher than SCE's itemized forecast of $57.010 million. It is clear that Cal Advocates, without justification or support, cherry-picked certain historical years to back into its proposed forecast. Cal Advocates' recommended forecast lacks merit and should be disregarded.

d) Cal Advocates' Position On SCE's Perpetual License Forecast

For the Perpetual License activity forecast, Cal Advocates recommends using the Last Recorded Year of $36.825 million because historical costs have been relatively stable for three or more years. Cal Advocates Last Recorded Year method results in a reduction of $31.463 million to SCE's Perpetual License forecast. Cal Advocates opposes SCE's forecast based on recorded expenses being stable or trending in a certain direction, the number of line items SCE attempts to forecast, and the poor results of a similar method in the previous GRC. Cal Advocates states that given all the factors (external challenges posed by market trends, growing business needs, and limitations with accounting rules) that impact a forecast and trying to itemize over 500 separate Project IDs will not be the "best" forecast choice.[79]

Cal Advocates' also asserts that SCE's approach used to forecast OU Capitalized Software Projects (itemized and historical) can also apply to Perpetual Licenses, based on the external challenges SCE discusses in its testimony including market trends, growing business needs, and limitations with accounting rules.[80]

Cal Advocates opposes SCE's use of an "itemized" forecast, arguing that this forecast methodology is unreliable. SCE used this forecast methodology in the 2021 GRC, and it resulted in an underspend of over $91 million. Cal Advocates argues that an itemized forecast consisting of hundreds of line-item costs (projects) is unreliable and lacks evidence that itemizing is a better predictor of future costs.[81]

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[78] *See* Table IV-11 and Appendix B, Workpapers: Cloud All Historical Increases To Forecast.

[79] Ex. CA-17, pp. 19-20.

[80] Ex. SCE-06, Vol. 1, p. 62

[81] Ex. CA-17, p. 21.

e) SCE's Rebuttal To Cal Advocates' Position - Perpetual License

(1) Cal Advocates' Recommended Last Recorded Year Forecast Does Not Address New Contracted Services Impacting SCE's Forecast

In its testimony, Cal Advocates recommends using Last Recorded Year as SCE's Test Year 2025 forecast for Perpetual License based on the Commission's principle: if recorded expenses have been relatively stable and/or if recorded expenses have shown a trend in a certain direction for three or more years, the LRY is an appropriate base estimate.[82] This is problematic for this activity because the Last Recorded Year forecast method does not take into account ***known*** new capital projects that will be transitioning to operations, resulting in Perpetual License O&M increases.

At the outset, SCE notes that the Last Recorded Year base expense of $36.83 million is not expected to decrease in this GRC period for multiple reasons including: 1) Grid Data Center costs needing to remain on premise due to NERC CIP requirements; 2) While some applications are available on the Cloud, it is more cost effective to remain on premise due to its vendor license pricing model; and 3) Applications such as SAP are now available on the Cloud, however, migration to the cloud would require some vendors to also act as a managed service provider in SCE's environment, which will duplicate existing services we currently contractually receive as part of the Fixed Price Technology & Maintenance activity.[83] Additionally, SCE also needs to stay on premise for SAP for some modules even after its end of its life in 2027, and possibly pay extended maintenance support (O&M), until some of the modules are migrated to the next SAP solution that aligns to SCE's business requirements.

In addition to these base expenses, ***known*** new capital projects will be transitioning to operations during the GRC period, resulting in Perpetual License O&M increases. Specifically for Perpetual License, the increase of $31.4 million from Last Recorded Year (2022) to Test Year 2025 is for the following three reasons, as depicted in Table IV-13 below.[84]

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[82] Ex. CA-17, p. 19.

[83] Ex. SCE-06, Vol. 1, pp. 39-46.

[84] *See* also Appendix B -Workpapers, CONFIDENTIAL Perpetual License Increases.

Table IV-13
Reasons for Perpetual License Increase
From 2022 To Test Year 2025 With Normalization For 2025-2028[85]
2022 Constant $ Millions

Line	Description for Increase	2022 Recorded	Normalized (2025-2028)	2022 Recorded versus 2025 Normalized	Total Amount
1	2022 Perpetual License O&M (Recorded 2022)				36.83
2	Cap to O&M for licenses: GE Energy Management Services, Hewlett Packard, Open Link, OsiSoft, Itron, and others	0.00	20.02	20.02	
3	SAP	2.68	10.93	8.25	
4	Year-over-year vendor pricing increases	34.15	37.34	3.19	
5	Total	36.83	68.29	31.46	31.46
6	2025 Normalized Forecast				68.29

These license maintenance expenses for SCE's on-premise software products discussed above are essential in keeping the reliability and availability of our suite of business-critical applications. Cal Advocates' utilization of the Last Recorded Year forecast method does not include any of these necessary costs that will undoubtedly be part of SCE's 2025 costs. These additional maintenance costs result primarily from OU Cap Software projects that were *implemented* at least 5 years prior to the forecast year (i.e., projects completed in 2020 would result in increased perpetual license maintenance costs in 2025). The specific uses for these product licenses are as follows:

- **GE Energy Management Services ($2.36 million):** GE products are business critical applications that are necessary to ensure reliability and security of Grid Control Center systems, which provide situational awareness, control, and electrical protection for our high voltage transmission system 24/7. Without the GE agreements in place, it could impact the reliability, security, and restoration time of the transmission grid.
- **Hewlett Packard ($1.37 million):** This license and maintenance support is utilized for bill and check printing, which is essential for SCE to send out physical bills to our customers who do not opt for online bill presentment, and to print out physical checks for normal SCE business transactions.
- **OpenLink ($1.06 million):** This license and maintenance support is for OpenLink's Endur product, which is used to manage SCE's renewable, tolling and conventional

[85] *See* Data Request Response to PubAdv-SCE-083-LMW, Q.11.b.

power contracts. SCE uses this application to settle and pay contract vendors based on their contracts every month.

- **OsiSoft ($1.0 million):** The solution collects large volumes of high-speed data in real time and stores data for many years at the desired fidelity and rate. OsiSoft has a large number of installations, and a world-wide user community that SCE can leverage to satisfy business use cases. Over the next ten years, SCE will need to collect 50–70 million data points used to manage SCE's electricity distribution network effectively.
- **Itron ($0.7 million)**: The license and maintenance support for the ITRON suite of applications ensures the reliability of SCE's metering services. This enables SCE to promptly and accurately collect meter data for billing purposes and empowers our customers and third parties to make informed energy management decisions.
- **Other vendors contracts, each less than $0.7 million ($13.6 million)**: Licenses from various software products that will roll off from Capital to O&M in 2025 under SCE's capitalization guidelines.[86]
- **SAP ($8.2 million):** All of SCE's customer transactional processing, such as customer interactions, customer usage and billing, customer products and programs, customer devices and field equipment management, happens through SAP's solutions. Additionally, all enterprise and corporate functions (Finance, Human Resources, Supply management) also use SAP. Lastly, SCE's data management functions such as data warehousing, data modeling, and reporting are done through SAP's data and analytics tools. License and maintenance support for SAP is critical to SCE's operations. The SAP agreement renegotiation was executed in 2018 and expenses have started to incur O&M costs as of 2024.

The Last Recorded Year base expense of $36.825, in addition to the known increases of $31.46 million discussed above and summarized in Table IV-13 result in SCE's Perpetual License O&M forecast of $68.29 million.

(2) Cal Advocates Ignores Vendor Contractual Agreements That Factually Support The Perpetual License Forecast.

Aside from ignoring the reasons SCE provided for the increases it expects in Perpetual License in 2025, Cal Advocates utilizes SCE's testimony as reasons against itemized

[86] Appendix B -Workpapers, CONFIDENTIAL Perpetual License Increases.

forecasts. In testimony, SCE explained that "IT faces many external challenges posed by market trends, growing business needs, and limitations with accounting rules, *which* are all contributing to the significant growth in our forecasts. Similar to historical non-labor, due to the variability in software license maintenance agreements and timing of renewals, an itemized forecast best represents the costs required for operational support of existing applications."[87] Cal Advocates states that due the external factors and variability SCE cited in our testimony, the itemized approach is not the "best choice."[88]

SCE's forecast consists of 502 perpetual license maintenance[89,90] line items based primarily on vendor *contracts* that factually demonstrate the resulting forecast is more reasonable and accurate than Cal Advocates' Last Recorded Year forecast method. SCE manages and interacts with each vendor for each software license purchase and maintenance contract renewal. The contracts are individually renewed with vendors at different times according to different contract schedules. In the Perpetual License category, just as it did with Cloud, Cal Advocates chooses to ignore the foundational Purchase Orders and agreements (itemized contracts) made with vendors, which are the basis for SCE's itemized forecast.[91] As stated above, the Last Recorded Year forecast method does not include any costs transitioning from Capital (which include already implemented capital projects) to O&M from 2022 to 2025 ($20 million), as well as an already executed SAP deal, which will result in an increase of $8.2 million in Perpetual License costs during the GRC period.

Cal Advocates does not dispute the fact that these line items consist of signed and executed agreements with vendors, which SCE is obligated to abide by, including the payment of the perpetual license costs. These executed agreements show an *increase* of vendor agreements in the 2021 GRC of 306[92] to this GRC period. SCE's Perpetual License forecast of $68.288 million, based on signed contracts with vendors, is reasonable and should be approved.

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87 *See* Ex. SCE-06, Vol. 1, p. 62.

88 *See* Ex. CA-17, pp. 19-20.

89 There are a total of 753 line items, including 251 for Cloud, in this sub work activity. Out of 502 perpetual license category line items, five line items are costs based on planned OU Cap Software projects that will transition into this sub work activity. *See* Ex. SCE-06, Vol. 1, CONFIDENTIAL Workpaper pp. 1-71.

90 As of September 23, 2022.

91 See Data Request Response to PubAdv-SCE-083-LMW, Q.11.b; SCE-06, Vol. 02, p. 141; Data request response to PubAdv-SCE-188-LMW, Q.16.

92 There are a total of 327 line items, including 21 for Cloud, in this sub work activity in 2021 GRC.

(3) Cal Advocates' Comparison Of Perpetual License To OU Capitalized Software Is Unsupported

In its attempt to defend its recommended Last Recorded Year forecast method, Cal Advocates makes unsupported comparisons between SCE forecast methods for OU Capitalized Software and Perpetual License. Cal Advocates cites to SCE's testimony for *OU Capitalized Software,* wherein SCE stated: "the rapid pace of changing technology no longer supports an itemized forecast for OU Capitalized Software Projects more than two years in the future."[93] Cal Advocates' position that the approach used to forecast OU Capitalized Software Projects can also apply to Perpetual Licenses is simply without support.[94] OU Capitalized Software focuses on work associated with developing *new functionalities* or capabilities to support the work performed in the various Operational Units.[95] This means that the rapid pace of changing technology has a significant impact, since technology solutions cannot be determined until prior to implementation. Perpetual Licenses, on the other hand, are software license maintenances that are already in our operational environment 5 years *after* each OU Capitalized Software project is completed. Therefore, the perpetual licenses are already in our operational environment, have defined contractual expiration or renewal dates, and are not unknown like the blanket forecast used for OU Capitalized Software projects. This fundamental difference in the unknown nature of OU Capitalized Software projects and known Perpetual License costs makes Cal Advocates assertion that both activities should use the same forecast method unreasonable.

(4) Cal Advocates' Depiction And Analysis Of The Perpetual License Historical Underspend Does Not Consider The Overspend In Cloud

An analysis of SCE's Perpetual License costs cannot be divorced from its spending on the Cloud. The historical underspend from the Perpetual License forecast needs to be combined with the overspend from the Cloud forecast to present an accurate picture of the overall costs within the Software Maintenance and Replacement Perpetual License and Cloud activity.[96] Perpetual License and Cloud categories need to be combined for a useful analysis of assessing whether recorded amounts are over- or under-authorized because vendors are quickly changing their software product offerings. In recent years, vendors have been moving their software offerings from on-premise more and

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[93] Ex. SCE-06, Vol. 02, p. 141.

[94] *See* Ex. CA-17, p. 20.

[95] *See* Ex. SCE-06, Vol. 1, p. 66, footnote 82.

[96] *See* PubAdv-SCE-083-LMW Q.14.a Revised.

more towards the Cloud, and SCE must transition its technology according to vendor offerings. Because Cloud technology is evolving at such a rapid pace, SCE is often notified of this vendor transition only when it renews the license agreement. As such, agreements forecast as in the Perpetual License category are moved to the Cloud category.

As detailed in testimony, vendors rapidly began moving away software offerings from Perpetual License towards the Cloud category.[97] This resulted in underspending of authorized amounts in the Perpetual License category, coupled with overspending of authorized amounts in the Cloud category. Cal Advocates' analysis did not consider the spending for Perpetual License and Cloud together. Additionally, Cal Advocates' analysis incorrectly compares the 2021 GRC forecasts for Perpetual License and Cloud without considering the normalized forecast that was actually authorized in its analysis.

Table IV-14 below shows the 2019-2023 Cloud and Perpetual License recorded amounts, GRC forecast amounts (with normalization) and authorized versus recorded amounts. The Cloud and Perpetual License categories combined for 2019-2022 result in an underspend from authorized of $9.5 million or 3.3% ($9.5 million / $291.6 million = 3.3%) over four years. When 2023 recorded data is included, the comparison results in an underspend from authorized of $5.6 million or 1.5% ($5.6 million / $370.9 million = 1.5%) over five years (2019-2023), compared to the amounts authorized in the 2021 GRC and the 2018 GRC. Notably, the table below on line 18 for the years 2021-2023 shows that the underspend for recorded compared to authorized in 2021 and 2022 has reversed itself in 2023 to an overspend.

[97] *See* Ex. SCE-06, Vol. 1, p. 49 and p. 61.

Table IV-14
Cloud & Perpetual License
Recorded vs. GRC Forecast and GRC Authorized
2019-2023
2022 Constant $000[98]

Line	Category	2019	2020	2021	2022	2023	Total 2019-2022	Total 2019-2023	Forecast Normalized Amount (2021-2023)
1	**CLOUD**								
2	Forecast 2021 GRC	14,939	16,844	19,939	20,588	22,686	72,310	94,996	21,071
3	Authorized*	12,729	12,891	21,071	20,408	20,290	67,099	87,389	
4	Recorded	25,002	28,108	36,491	39,861	43,994	129,462	173,456	
5	Forecast vs. Recorded	10,063	11,264	16,552	19,273	21,308	57,152	78,460	
6	Authorized vs. Recorded	12,273	15,217	15,420	19,453	23,704	62,363	86,067	
7	**PERPETUAL LICENSE**								
8	Forecast 2021 GRC	56,429	55,278	59,302	64,714	59,903	235,723	295,626	61,306
9	Authorized*	51,564	52,234	61,306	59,377	59,034	224,482	283,516	
10	Recorded	40,898	38,643	36,253	36,825	39,233	152,619	191,852	
11	Forecast vs. Recorded	(15,531)	(16,635)	(23,049)	(27,889)	(20,670)	(83,104)	(103,774)	
12	Authorized vs. Recorded	(10,666)	(13,591)	(25,053)	(22,552)	(19,801)	(71,863)	(91,664)	
13	**PERPETUAL LICENSE & CLOUD**								
14	Forecast 2021 GRC	71,369	72,122	79,241	85,302	82,590	308,033	390,622	82,377
15	Authorized*	64,293	65,125	82,377	79,785	79,324	291,581	370,904	
16	Recorded	65,900	66,751	72,744	76,686	83,227	282,081	365,308	
17	TOTAL Forecast 2021 GRC vs. Recorded	(5,469)	(5,371)	(6,497)	(8,616)	637	(25,952)	(25,314)	
18	TOTAL Authorized (Normalized) vs. Recorded	1,607	1,626	(9,633)	(3,099)	3,903	(9,500)	(5,596)	
19	% Difference (Authorized vs. Recorded)						-3.3%	-1.5%	

* 2019 and 2020 Authorized is from 2018 GRC

The question is not if SCE is able to spend what we are authorized, rather the question is whether the expense will be incurred in the Cloud or Perpetual License category. Additionally, as stated in Section 4(c) above, historical data beyond three years (older than 2020) is not

[98] *See* Appendix B, Workpaper Cloud and Perpetual License Complete Analysis.

representative of costs in the current IT environment and future state of technological advances and adoption in the cloud, since the cloud technology is evolving rapidly.[99]

(5) Historical Reasons For Underspend Of Authorized Compared To Recorded Are Less Likely To Impact Future Years

As stated above, analysis of recorded versus authorized should be considered together as Perpetual License and the Cloud Categories are both intertwined and somewhat dependent on vendor software offerings. As stated below, reasons for authorized to recorded underruns in the past are less likely to occur in the future.

For 2021, the combined underspend from authorized to recorded in both Perpetual License and Cloud category is approximately $9.6 million. The main reasons for the underspend were:

(1) Maintenance cost reductions resulting from capital investments ($6.4 million), which are expected to happen less frequently in the future as vendors continue to move application offerings from on premise (Perpetual License) to the Cloud. SCE's capitalization guidelines require for Cloud costs to be capitalized during implementation and then to become O&M expense once in operations;

(2) Non-renewals of maintenance for decommissioned applications ($2.9 million).[100,101]

For 2022, the underspend occurred because of IBM mainframe decommissioning due to implementation of CSRP (~$4.7 million less in Perpetual License), which will not occur in the 2025 GRC period. This underspend in 2022 was offset by overspend of authorized compared to recorded in growth in business needs as explained in testimony,[102] which resulted in a total of $3.099 million underspend. For 2023, despite savings of $7.4 million in Perpetual License due to CSRP[103] and savings of $3.4 million due to Application Rationalization,[104] the total Perpetual and Cloud

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[99] Ex. SCE-17, Vol. 1, p. 29.

[100] Ex. SCE-06, Vol. 1, p. 51.

[101] Appendix B: Workpaper Cloud & Perpetual License 2021 Primary Reasons for Underrun.

[102] *See* Ex. SCE 06, Vol. 1, pp. 49, 59.

[103] *See* S Ex. CE-03, Vol. 1, Customer Operations, pp. 108-109 (see line 2 on tables titled License & Maintenance Cost Savings for Upgrade of Mainframe Operating System on p. 108, and lines 5-18 on p. 109 for description of savings).

[104] *See* Ex. SCE-06, Vol. 1, p. 80.

license and maintenance expenses exceeded authorized by $3.902 million, mainly due to the growth in contracts added during 2023.

In summary, the underspend for the five-year period (2019-2023) is 1.51% and demonstrates that SCE's forecast method for Cloud and Perpetual License is a reasonable and reliable forecast method.

f) Conclusion

SCE's Cloud and Perpetual License forecasts are both primarily based on itemized executed vendor contracts – agreements that bind SCE to their contractual terms, including the price for Cloud and Perpetual License services. These executed vendor contracts are the best indicator of SCE's future costs for these services.

Cal Advocates' proposed forecast method should be rejected as less reasonable compared to the itemized forecast method. SCE's O&M expense forecast for the Cloud of $57.010 million and its O&M forecast for Perpetual License of $68.288 million should be approved.

5. Application Refresh

a) SCE Application

The Application Refresh sub-work activity consists of two distinct work activities: (1) management, upgrade, maintenance, optimization, monitoring, and testing of about 700 existing IT applications, 5,000 interfaces, and 400 digital technologies through their lifecycle; and (2) management, data engineering, and analytics activities of increasing volume of structured and unstructured data supporting the applications. These applications, digital tools and technologies, and data management & integration initiatives collectively support a majority of SCE's business processes and capabilities, including mission critical applications that help provide customers with safe and reliable energy along with satisfying mandated compliance and security requirements.

Application Refresh is necessary because applications must be running on vendor-supported versions in order to receive vendor support. If the applications do not run on vendor-supported versions, then our managed service providers' technical teams may be at risk of not receiving vendor support when troubleshooting technical issues that arise in the application, and in some instances additional charges may be incurred for support. For those applications troubleshooting issues is nearly impossible for SCE to perform independently without receiving vendor support. Critically, this GRC activity provides availability, stability, sustainability, and reliability of the systems.

In addition to the management of our application portfolios, continued investment in digital technologies that support our IT Modernization and Simplification strategy[105] while reducing risk to operations and increasing efficiency through automation is essential. As stated in the work activity section, digital tools and platforms enable and support the development of digital application solutions, advanced analytics, robotic process automation, and emerging technology prototypes.[106]

Lastly, accurate data and data engineering is critical for data driven decision making, as well as reducing enterprise reputational and compliance risks related to internal and external data sharing. As an example of criticality of our data for decision making, inaccurate data for asset location will impact timely asset inspections for risk mitigation and service reliability.

The non-labor expenses in this activity include Consulting & Professional Services (C&PS), O&M projects, Ongoing Maintenance, and employee expenses. Consulting and Professional Services are those vendor maintenance services that SCE utilizes to help upkeep our applications. O&M projects are those small projects under $250,000 that are done to support our applications, whether it be small refreshes, configuration, enhancements, or remediations. Ongoing Maintenance reflect maintenance expenses for OU Capitalized Software projects that are transitioning from capital to O&M, typically after a five-year pre-paid maintenance and support agreement with the vendor. After this initial five-year period, SCE is required to pay for ongoing maintenance for these projects using O&M.

Similar to the last GRC, Application Refresh utilized an itemized forecast methodology as the basis of its forecast. The drivers of the increases for Test Year 2025 and forward include growth of our portfolios as technologies impactful to customer satisfaction, affordability, reliability, safety, and quality that were previously implemented become operational, which introduces increases in our consulting and professional services (C&PS), O&M projects, and Ongoing Maintenance categories.

Table IV-15 below shows the Application Refresh O&M 2018-2022 recorded amounts, the 2025 Application forecast, SCE's rebuttal forecast, and Cal Advocates' forecast position. The 2025 O&M Test Year Forecast for non-labor is $23.214 million, which is an increase from last year (2022) recorded of $14.227 million.

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[105] Refer to Ex. SCE-6, Vol. 1, Section I.C.1, Enterprise Technology Focus and Operational Improvements, pp. 7-8.

[106] Also refer to Ex. SCE-6, Vol. 1, Section IV., Digital & Process Transformation, pp. 25-38.

Table IV-15
Application Refresh O&M
2018-2022 Recorded/2025 Forecast
Summary Of SCE And Cal Advocates Positions
(2022 Constant $000)

Line No.	Application Refresh	SCE Recorded					2025 Foreccast					
		2018	2019	2020	2021	2022	SCE Application	SCE Adjustment	SCE Revised Forecast	Cal Advocates	Variance from SCE	SCE Rebuttal Position
1	Labor	7,930	8,462	11,217	10,529	10,864	12,944	(459)	12,485	12,485	-	12,485
2	Non-Labor:											
3	O&M Projects	1,057	1,848	1,241	2,671	10,864	11,957	-	11,957	2,671	(9,286)	11,957
4	Consulting Projects	2,851	2,038	2,407	1,853	3,044	6,457	-	6,457	3,044	(3,413)	6,457
5	Ongoing Maintenance	-	-	-	-	-	4,660		4,660	-	(4,660)	-
6	Employee Related	344	409	196	214	319	140		140	204	64	140
7	**Total**	12,182	12,757	15,061	15,267	25,091	36,158	(459)	35,699	18,404	(17,295)	31,039

b) Cal Advocates' Position

Cal Advocates does not oppose SCE's Application Refresh Labor forecast. Cal Advocates does oppose the Non-Labor forecast on the basis of SCE utilizing an "itemized" approach in the last GRC, and SCE underspending the amount authorized. SCE uses a similar "itemized" approach in this GRC.[107] Cal Advocates separates out its proposal into three categories: (1) O&M Projects, (2) Consulting & Professional Services, and (3) Ongoing O&M.

(1) O&M Projects

Cal Advocates recommends a Test Year 2025 non-labor forecast for O&M projects of $2.671 million as opposed to SCE's forecast of $11.957 million,[108] a reduction of $9.286 million. Cal Advocates' forecast selects 2021 expenses as the starting point, arguing that 2022 costs contained expenses deferrals, delays, reprioritizations, and freezes, thus supposedly making it an anomalous year. Cal Advocates states that it is clear that results can vary significantly from planned results; and thus, SCE's forecasting methodology is unreliable and lacking evidence to justify an increase in spending to the extent that SCE is proposing. As a result, Cal Advocates proposes a forecast based on 2021 historical data and results.[109]

[107] Ex. CA-17, p. 23.

[108] Cal Advocates used $12.328 million for O&M Projects, which is the non-normalized amount for 2025.

[109] Ex. CA-17, pp. 24-26.

(2) Consulting And Professional Services

Cal Advocates recommends a Test Year 2025 non-labor forecast for Consulting and Professional Services (C&PS) O&M expenses of $3.044 million using the LRY based on SCE's historical expenses as opposed to SCE's forecast of $6.457[110] million, a reduction of $3.413 million. Cal Advocates' recommendation is based on Commission forecasting guidance, states that the current SCE itemized approach is similar to the forecast method in the last GRC that resulted in underspending in 2021 and 2022, and also argues that SCE's current forecast does not represent a reasonable predictor of future costs. Cal Advocates concludes that use of historical data when SCE requests more than a doubling of expenses from its last recorded year, and when SCE's current forecast is already trending towards underspending—is more reasonable.[111]

(3) Ongoing Maintenance

Cal Advocates recommends a Test Year 2025 non-labor forecast for Ongoing Maintenance of $0 as opposed to SCE's forecast of $4.660 million.[112] Cal Advocates recommendation is based on SCE's lack of tracking for any "ongoing" expenses and that these expenses appear to be absorbed in operations.[113]

c) SCE's Rebuttal To Cal Advocates' Position

SCE's rebuttal to Cal Advocates recommendations by forecast category – O&M Projects, C&PS and Ongoing O&M - are each discussed below.

(1) O&M Projects

(a) Cal Advocates' Forecast Method Ignores The New Incremental Work ($9.44 Million) That SCE Will Be Undertaking In This GRC Period

Cal Advocates argues that SCE's O&M Projects forecast is lacking justification and recommended 2021 recorded as the basis for SCE's Test Year 2025 forecast. In its testimony, Cal Advocates ignores several data requests[114] and statements in testimony where SCE has described the importance of new work that has surfaced in this GRC period, including those related to

[110] Cal Advocates used $6.536 million for O&M Projects, which is the non-normalized amount for 2025.

[111] Ex. CA-17, pp. 26-27.

[112] Cal Advocates used $4.146 million for O&M Projects, which is the non-normalized amount for 2025.

[113] See Ex. CA-17, pp. 27-28.

[114] *See* PubAdv-SCE-076-LMW, Q.3, Q.6 and Q.7.

Digital Tools and Technologies, Data Management, SCE.com Digital Self-Service (SCE.com), Salesforce, Billing and Usage Systems (Industry Specific Solution for Utilities), and GitHub Security Compatibility. All these together add up to $9.5 million increase that would not have been accounted for in Cal Advocates' recommendation of utilizing 2021 recorded costs as the basis SCE's forecast. Please see Table IV-16 below for the description of each category of new work, and the dollar amounts.

Table IV-16
O&M Projects New Work from 2025-2028 (Normalized)[115]
Increase From 2021 To 2025
2022 Constant $ Millions

Category	Description	Amount
Billing and Usage Systems (ISU)	These efforts are to ensure our data is accurate and updated in the new Industry Specific Solution for Utilities system (billing and usage system implemented in CSRP). These became required after the mainframe was decommsisioned.	3.51
Digital Tools and Technologies	SCE IT has introduced an added focus on transformation and enablement of critical business processes and innovation through additional investments in critical automation, DevOps and mobile platforms, tools, operational services, and advanced analytics. The introduction of these new platforms, tools and products require additional operational support services and application refresh services.	2.30
Salesforce	Salesforce platform hosts Arbora and Inspectforce applications that improve the efficiency of wildfire preventions. Arbora automates the processing of vegetation managements. Inspectforce uses aerial inspection as part of wildfire management. The O&M Projects costs for Salesforce are to ensure we have platform support to continue to support the applications Salesforce hosts.	1.47
SCE.com digital self service	Investing in Sce.com Digital Self Service will reduce customers' dependency on the customer contact center as it allows for expansion of automation services. This expansion also improves productivity, allowing us to serve our customers more expeditiously. The move to digital and customer self-service requires new technologies such as Chatbots and Agent Assist chat technologies that require more sophisticated technologies, platforms, and data management techniques, which in turn increases our maintenance and operations forecasts.	1.16
Data Management	As our data grows, there is a greater need and dependence on various ways to use data for optimal operations and business decision making across the board. With the greater demand, growth and emphasis on data and analytics, there is higher need for expertise, time and resources to manage SCE's data.	0.73
GitHub Security Compatability	This tool allows us to efficiently store our source code, including version history. It is an industry standard. Helps minimize downtime, and to resolve issues in a timely manner. This service helps us reduce unplanned downtime for the systems our customers rely on.	0.27
	Total	**9.44**

[115] Appendix B, Workpaper Application Refresh O&M Projects - New Work.

(b) Cal Advocates' Assertion That Re-Prioritization Of Efforts Translates To An Unreliable Methodology Is Incorrect

In its recommendation, Cal Advocates takes issue with the fact that SCE re-prioritized efforts according to emerging needs and that actual executed efforts may not necessarily align with the forecast. In its recommendation, Cal Advocates states that it is clear, despite SCE's claim that "all" projects are necessities, that actual results can vary significantly from planned results; thus, making SCE's forecast method unreliable.[116] The O&M Projects are small projects under <$250,000 that are done to support our applications including small refreshes, configuration, enhancements, or remediations. Therefore, as there are over 700 applications in the IT environment, the nature of this work is dynamic and emerging issues and demands are common. SCE prioritizes those demands based on risk criticality. Just because work is re-prioritized according to risk, does not mean that the planned work is not a necessity. In fact, just the opposite is true.

If there is lack of funding authorization, the demand backlog will continue to grow, and eventually SCE's applications' reliability and availability will be compromised. Below are the three examples where SCE's applications' reliability and availability are compromised due to lack of sufficient funding.

First, the upgrade of AutoCAD Map3D, an Autodesk COTS product that is used to map assets and edit and update geographical features for underground and overhead assets, was delayed to higher priority upgrades. If AutoCAD Map3D is unavailable for an extended period of time, Dig Alerts may be impacted. If the maps are not accurate and we inform the public they can dig based on incorrect mapping, that can cause a safety issue to the SCE field teams or to the public.

Another example is the Network Management System (NMS), a collection engine that manages communication with Edison SmartConnect meters to transmit and receive data, upgrade was delayed due to emerging priorities. Without this upgrade, the application is not compatible with the Edge browser which impacts the company and can result in missing usage data and bill generation information.

Lastly, the Hana to SAP system is the main enterprise data warehouse at SCE supporting all data and analytics modeling, reports and applications across enterprise

[116] Ex. CA-17, pp. 24-26.

functions such as HR and Finance. This upgrade was delayed due to other priorities. This has led to system table locks[117] preventing any of the transactions from proceeding, resulting in numerous system restarts and outages. This leads to reporting being unavailable, and the users unable to get the much-needed data for regulatory and compliance reporting, as well as other types of reporting. Upgrading the Hana to SAP system "reduces the impact to business operations and allows for business continuity by decreasing unplanned outages and by providing the functionality needed by the business units. Ensuring our applications stay within the supported versions, will also increase our reliability and stability by having the availability of patches, which improves application security and performance. Not performing this work increases SCE's cybersecurity exposure and the potential loss of data or data breaches."[118]

(c) Cal Advocates Incorrectly Ignores 2022 In Its Recommendation

Cal Advocates recommends utilizing 2021 as the basis of the Last Recorded Year forecast because, it claims that 2022 contained expenses deferrals, delays, reprioritizations, and freezes, thus making it an anomalous year. First, Cal Advocates incorrectly stated that 2022 is anomalous due to a freeze; in fact, 2021 is when SCE had a system freeze due to CSRP implementation, resulting in a significant underspend. The system freeze meant that there was a concerted effort to assess and govern all projects, operational changes, application refreshes or enhancements changes that could potentially impact the October 2021 CSRP implementation. Because of this process, many of the planned O&M projects in 2021 could not be performed, which resulted in many of them being reprioritized to the following years.

Additionally, SCE spent $10.864 million in 2022 for O&M Projects. Of that amount, $5.068 million represented anomalous expenses (e.g., Customer Service Re-

[117] System table locks occur when two or more transactions are waiting for each other to release resource locks and create a circular dependency which prevents any of the transactions from proceeding. System table locks can severely impact database performance and often require manual intervention to resolve.

[118] Ex. SCE-6, Vol. 1, pp. 69.

Platform Mainframe Decommissioning[119] and Application Rationalization[120]) but the remaining $5.796 million represent typical O&M projects for application refreshes discussed above and in testimony.[121]

In 2023, SCE's recorded O&M Projects costs for Application Refresh totaled $5.048 million.[122] This is significantly higher than the $2.671 million Cal Advocates recommends based on 2021 recorded costs.

(2) Consulting And Professional Services

(a) Cal Advocates' LRY Forecast Method Again Does Not Consider New Work ($2.60 Million) That SCE Will Be Doing In This GRC Period

Similar to O&M Projects, Cal Advocates ignores testimony and several data requests[123] where we described the importance of new work that has surfaced in this GRC period (2025-2028). In testimony, and further detailed in data request response,[124] SCE discussed the new work related to Salesforce, CCA, and Data Quality, which are important for customers. Please see Table IV-17 below for a description for each category and its importance to customers, and the associated dollar amount:

[119] Ex. SCE-6, Vol. 1, p. 73.

[120] Ex. SCE-6, Vol. 1, pp. 79-80.

[121] Appendix B: Workpaper, Application Refresh O&M Projects 2022 Recorded.

[122] Appendix B: Workpaper, Application Refresh O&M Projects 2023 Recorded.

[123] *See* PubAdv-SCE-076-LMW, Q.3, Q.6 and Q.7.

[124] Ex. SCE-06, Vol. 1, pp. 67-68, pp. 70, and 76.

Table IV-17
C&PS New Work From 2025-2028 (Normalized)[125]
Increase From 2021- 2025
2022 Constant Millions

Category	Description	Amount
Data Quality	Data quality is required to support major asset types and enhance the systems, processes and governance required to properly capture and maintain data moving forward. This includes prioritization, and remediating priority asset types (including high fire poles and wires). This will improve overall data quality and reduce the amount of manual effort needed to perform data corrections.	0.77
CCA	SCE needs to have a dedicated team to complete the enrollment, de-enrollment, integration testing support and data processing for Community Choice Aggregation (CCA.) This effort helps with the pre and post enrollment activities for the additional cities that are being converted to CCA or de-enrolled. This helps ratepayers be converted into CCA in the timeline stipulated by CPUC. There would be an impact to the CCA entity in the form of delayed revenue and potential SCE penalties.	0.59
SAP C4C	Quarterly feature release testing, data correction, and integration remediation of the SAP Cloud for Customer Utilities (C4C) solution. C4C is designed for utility companies to enhance their customer engagement, streamline processes, and optimize call center operations.	0.40
Salesforce	Salesforce platform hosts Arbora and Inspectforce applications that improve the efficiency of wildfire preventions. Arbora automates the processing of vegetation managements. Inspectforce uses aerial inspection as part of wildfire management. The C&PS costs for Salesforce are to ensure we have funds for vendor support for changes required for these applications.	0.29
Snowflake	Snowflake professional services is required to mitigate platform and migration issues . It will have delay on Hadoop decommission plan , building new applications and data sharing requirements.	0.28
Tagetik	This is a vendor that supports COBRA process. The Consolidated Omnibus Budget Reconciliation Act (COBRA) gives workers and their families who lose their health benefits the right to choose to continue group health benefits provided by their group health plan for limited periods of time under certain circumstances such as voluntary or involuntary job loss, reduction in the hours worked, transition between jobs, death, divorce, and other life events.	0.15
Hydstra	This is a third party product which gathers data from the Hydro-electric control systems. This proprietary application requires vendor support which cannot be provided by our Managed Services Providers.	0.06
MDM Tool	TIBCO EBX-MDM is a Master Data Management software. Delay in upload of Contracts, Resource, Meter and Locations master data will impact settlement process and EPM users.	0.06
	Total New Work	**2.60**

[125] Appendix B, Workpaper Application Refresh C&PS New Work.

(b) Cal Advocates' Use Of Projected 2023 O&M Does Not Support Its Last Recorded Year Forecast Method As 2023 Recorded Was Higher Than 2022[126]

In its recommendation, Cal Advocates utilized a data request response in which SCE provided the status of its 2023 C&PS efforts as of November 2023.[127] Cal Advocates incorrectly concluded that, because certain items listed their statuses as "not started," it meant that SCE will be underspending significantly in 2023. In this analysis, Cal Advocates failed to consider that purchases and services would still occur before the end of the year. Additionally, Cal Advocates did not consider in its recommendation the emerging priorities including M365 Copilot,[128] SailPoint for GitHub[129] that took place over the planned Consulting and Professional Services amount submitted in the data request.[130] Those emerging priorities along with planned purchases and services resulted in a recorded amount of $4.346 million in 2023,[131] which was greater than Cal Advocates' LYR forecast by $1.3 million.

(3) Ongoing Maintenance

SCE does not oppose Cal Advocates' recommendation for Ongoing Maintenance.

d) Conclusion

For O&M projects and Consulting and Professional Services, Cal Advocates' recommendations are based on incorrect assumptions and incomplete data. SCE's non-labor forecasts of $11.957 million for O&M projects and $6.457 million for C&PS should be adopted as they take into consideration the new work and capabilities required to continue to manage SCE's expanding portfolio. SCE does not oppose Cal Advocates' recommendation for Ongoing Maintenance.

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[126] Appendix B, Workpaper Application Refresh C&PS 2022 Recorded.

[127] PubAdv-SCE-231-LMW, Q8.

[128] M365 Copilot is an Artificial Intelligence-powered tool that helps you generate content, analyze data, and summarize text based on your context, aiding in quick decision-making through natural language queries.

[129] The integration of Octane and Github access provisioning to SailPoint provides a solution to the current manual, time-consuming, and error-prone access management process for these tools. Automating this process through SailPoint streamlines access management, reducing the risk of errors and saving time for both requestors and administrators.

[130] *See* PubAdv-SCE-231-LMW, Q.8.

[131] Appendix B, Workpaper Application Refresh C&PS 2023 Recorded. Recorded data was provided to all parties on March 11, 2024. *See* Exhibit SCE-11.

B. Capital Expenditures

1. Application Refresh

a) SCE Application

The Application Refresh sub-work activity consists of two distinct work activities: (1) management, upgrade, maintenance, optimization, monitoring, and testing of about 700 existing IT applications, 5,000 interfaces, and 400 digital technologies through their lifecycle; and (2) management, data engineering, and analytics activities of increasing volume of structured and unstructured data supporting the applications. These applications, digital tools and technologies, and data management and integration initiatives collectively support a majority of SCE's business processes and capabilities, including mission critical applications that help provide customers with safe and reliable energy along with satisfying mandated compliance and security requirements. This activity is necessary for system availability, stability, sustainability, and reliability for SCE's applications.

Application refresh items that are $250,000 or greater with the minimum expected useful life of five years are categorized as Capital refresh activities. Application Refresh items that are typically less than $250,000 are categorized as O&M refresh activities. For each application to be refreshed, the cost is determined by scope and complexity of the software refresh. Included in the cost is testing performed by the Testing Center of Excellence and additional overhead costs like license costs and server replacement or upgrade costs. These refreshes are then categorized and prioritized based on the application's risk, urgency, and magnitude of impact. Similar to O&M, the increases in dollars over the historical period is also driven by growth in our portfolio due to various business drivers. One significant driver of growth is wildfire mitigation, which increases vegetation management, inspection, weather predictions, aerial inspections, and collaboration tools within our portfolio. This, in turn, increases our forecast as these tools will need to be refreshed periodically to ensure the reliability of the applications.

Additionally, industry vendors are not providing support for older version of software and are changing vendor refresh schedules creating a need for more frequent refreshes. Shorter refresh cycles reduce cybersecurity risks and increase application reliability. As the new systems replace our older applications, we move away from obsolete in-house developed solutions to more vendor-supported solutions. As these replacement systems are transitioned to operations, refreshes also must be performed periodically so that we can continue to receive support for these third-party applications. If the applications do not run on vendor-supported versions, then our managed service providers' technical

teams may be at risk of not receiving vendor support when troubleshooting technical issues that arise in the application, and in some instances additional charges may be incurred for support. For those applications that are proprietary, receiving vendor support is essential in order to troubleshoot for application availability and security. Changing vendor schedules of refresh dictate how often SCE must perform these updates, thus increasing refresh costs. An example of this would be SAP ISU/Cloud of Customer (C4C) which replaced our old mainframe-based customer service system. The increased refresh costs include hardware, integration, software, and support costs from third parties and managed services providers. These costs were previously minimal, but have been increasing in recent years and will continue to increase in the GRC period.

Additionally, factors such as on-premise refreshes versus migration to the cloud will impact the cost estimates for a given refresh. Those refreshes that include migration to the cloud (which is done because new capabilities are only available in the cloud) will incur a one-time additional cost to migrate at the time of the refresh. Lastly, SCE plans to replace several end-of-life suites of software products through capital replacement projects in the GRC period. These and other capital investments in the software portfolio provide the foundational computing platform for our business, and are necessary to ensure system availability for critical business operations. Because of all this variability, Application Refresh capital expenditures vary each year depending on the life cycle of the application, application obsolescence, and the type of refresh necessary.[132]

Table IV-18 below provides the summary of SCE and Cal Advocates positions on Software Maintenance and Replacement capital expenditures. Cal Advocates did not oppose the capital expenditure forecasts for Cloud and Perpetual Licenses. SCE's rebuttal position recommends update of the 2023 forecast to the actual recorded amount for 2023.[133] Perpetual License sub work activity was $23.7 million greater than the forecast due to implementation of the following licenses that provided additional functionalities: SAP/Open Text, Github, HP/Merito products.[134]

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[132] *See* Ex. SCE 06, Vol. 1, pp. 77-79.

[133] *See* Ex. SCE-11 for SCE's 2023 recorded capital expenditures and Ex SCE-18, Vol. 1, Ch. VI for SCE's proposal that the Commission authorize SCE's 2023 recorded expenditures in place of SCE's original 2023 forecast across the case.

[134] Appendix B: Workpapers - Additional Functionalities for Perpetual License Capital Selected Projects.

Table IV-18
Software Maintenance & Replacement Capital Expenditures
2023-2025 Forecast
Summary Of SCE And Cal Advocates Position
(Nominal $000)

Line No.	Business Planning Element	2023 - 2025 Forecast			
		SCE Application	Cal Advocates	Cal Advocates Variance from SCE	SCE Rebuttal Position
1	Application Refresh	128,808	84,902	(43,906)	126,473
2	Perpetual License	52,779	52,779	-	76,440
3	**Total**	181,587	137,681	(43,906)	202,913

Line No.	Business Planning Element	SCE Recorded					SCE Rebuttal Position			
		2018	2019	2020	2021	2022	2023 Recorded	2024 Forecast	2025 Forecast	Total 2023-2025
1	Application Refresh	7,393	8,199	21,795	20,491	33,393	41,254	27,892	57,327	126,473
2	Perpetual License	58,518	10,901	14,078	68,092	21,984	30,317	11,912	34,211	76,440
3	**Total**	65,911	19,100	35,873	88,583	55,377	71,571	39,804	91,538	202,913

b) Cal Advocates' Position

For the years 2023 to 2025, Cal Advocates recommends forecasts of $18.116[135] million for 2023, $33.393 million for 2024, and $33.393 million for 2025. The basis for Cal Advocates' 2023 recommendation is SCE's response to a data request regarding the status of its 2023 forecasted projects as of October 2023. Cal Advocates recommends a 2023 forecast of $18.116 million, in contrast to SCE's forecast of $43.589 million, a decrease of $25.473 million. Cal Advocates cites to a SCE data request response to indicate various completion dates had slipped into 2024. Cal Advocates further recommends a forecast of $33.393 million for 2024 and 2025 based on the Last Recorded Year method. Cal Advocates argues that, considering the apparent slippage of projects from 2023 to 2024 (based on the data request response discussed above), there are likely to be further delays from 2024 to 2025, and into the post-test years, thereby justifying a decrease to the overall forecast.

c) SCE's Rebuttal To Cal Advocates' Position

(1) Cal Advocates Did Not Consider New Demand In This GRC Period

As stated in testimony and supported by workpapers, there are many new refreshes for 2024 and 2025 for systems that did not exist in the past. As explained in testimony, one of

[135] Ex. CA-17, pp. 32-36. Note, Cal Advocates stated on p. 34, line 31 that its forecast recommendation for 2023 is $12.5 million, however, everywhere else in its testimony their forecast recommendation is $18.116 million.

the biggest drivers of the increase in 2025 is the refresh of SAP ISU,[136] which was implemented by CSRP.

Other work supporting new capabilities in those years include Data Management and Digital Tools and Technologies. In the 2021 GRC, digital tools and technologies was not part of the consideration within Application Refresh, as those tools and technologies did not exist. In the 2025 GRC period covering 2025-2028, the Application Refresh environment has grown to include over 400 digital tools and technologies.[137] Additionally, increasing volume of structured[138] and unstructured data[139] supporting the applications has necessitated SCE to embark on data initiatives to manage them to ensure data quality, data availability and analytics and extracts are available for business and customer consumption. Selection of the Last Recorded Year forecast for 2025 does not adequately cover the new work that Cal Advocates did not consider in its forecast recommendation. For 2024, SCE's forecast is lower than the Last Recorded Year amount (Cal Advocates' recommendation), and as such, SCE maintains its original forecast.

Lastly, another component of new work that should be clearly understood is that many refreshes will be done in a more frequent manner[140] due to vendor driven schedules as many require the applications to stay within the supported versions, which ensures our reliability and stability by having the availability of patches and improves application security and performance. Moreover, more frequent refreshes are necessary to reduce SCE's cybersecurity exposure and the potential loss of data or data breaches.[141] The forecast for the new work component during the 2025 GRC period is $22.5 million (the normalized forecast/annual average expense for 2025-2028). Examples of those are ISU upgrade[142] and PowerPlan Upgrade which are now on a 3-year cycle as opposed to the prior 5-year cycle. Table IV-19 below provides the categories of new work in 2025-2028 GRC period and their respective amounts.

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[136] Ex. SCE-06, Vol. 1, p. 78.

[137] *See* Ex. SCE-06, Vol. 1, p. 66.

[138] *See* Ex. SCE-06, Vol. 1, p. 66. Currently at 1060 Terabytes and growing at 40 Terabyte per month. 1 Terabyte is equal to 1000 gigabyte.

[139] See Ex. SCE-06, Vol. 1. p. 66. Currently at 1.8 Petabyte growing to 6 Petabyte in 3 years due to videos and laser imaging detection technologies. 1 Petabyte is approximately equal to 1 million gigabytes.

[140] See Data Request PubAdv-SCE-231- LMW Q.4c.

[141] Ex.SCE-06, Vol. 1 p. 69.

[142] Ex. SCE-06, Vol. 1, p. 78.

Table IV-19
Application Refresh "New Work" Capital Increase From 2022 To 2025[143]
Nominal $ Millions

Category	Description	Amount
ISU Refresh	SAP ISU is a critical application as it supports business functions such as billing, invoicing, accounting, customer interaction management and customer products and programs enrollment. This system integrates with other internal systems including meter data management (MDMS), corporate financial system (SAP ECC) and Enterprise Data Warehouse (EDW). SAP ISU is planned to be refreshed every three years.	11.15
Data Management	Data Management work is another driver of the increase in capital spend. SCE plans to improve end-to-end data management capabilities to strengthen data insights driven decision making, data/analytics augmented business processes, and accurate data sharing. Planned activities for 2025 include the following: (1) Establish Data Catalog tool selection and deployment to support consistent use of enterprise data across use cases and for data sharing, (2) Data quality issues remediations based on findings from data quality assessment and dashboards for customer usage, billing, and prioritized T&D asset datasets; (3) Enabling self-service data engineering and data pipelines capabilities for deriving data insights and for cost effective build and deployment of analytical models; and (4) Continue build of Enterprise Datawarehouse/Data lake in cloud (Snowflake/SAP Datawarehouse Cloud) with additional datasets for advance analytics and data science.	7.43
Digital Tools and Technologies	SCE IT has introduced an added focus on transformation and enablement of critical business processes and innovation through additional investments in critical automation, devops and mobile platforms, tools, operational services, and advanced analytics. The introduction of these new platforms, tools and products require additional operational support services and application refresh services.	3.52
Total		22.10

(2) Cal Advocates' Use Of Projected 2023 Capital Does Not Support Its Last Recorded Year Forecast Method, As SCE's 2023 Recorded Capital Costs Were Higher Than Cal Advocates' Forecast

SCE proposes that the Commission adopt SCE's 2023 recorded Application Refresh capital expenditures, totaling $41.253 million, as it reflects the work actually completed in 2023.[144]

In its recommendation, Cal Advocates utilized SCE's data request response[145] that provided the status of 2023 projects over $800,000 based on the submitted workpaper to

arrive at its recommendation of $18.116 million in 2023. In its data request, Cal Advocates requested SCE to give status (whether started, in progress, completed, or not yet started), the start and completion date if applicable, and whether the projects are over or under forecast. For those that are not started, SCE provided an explanation as to why it has not yet been started. From SCE's response, which was provided on October 24, 2023, two months before the end of the year, Cal Advocates concluded, incorrectly, that SCE's Application Refresh costs would be significantly below its 2023 forecasted amounts. Cal Advocates' reliance on this data is misplaced and resulted in a significantly lower 2023 forecast than what SCE actually recorded (discussed below). Cal Advocates takes SCE's list of projects with forecasts in 2023, whose expected completion dates are in 2024 and subtracted the *entirety* of the 2023 forecast to arrive at its recommendation reduction to SCE's forecast of $25.473 million.[146] Meaning, in its recommendation, Cal Advocates reduced SCE's forecast by totaling: In progress projects with expected completion dates in 2024 (total of $21.723 million) and Projects that have not started but are expected to be completed in 2024 (total of $3.250 million).[147]

Cal Advocates suggests that these projects "expected to be completed in 2023 whose expected completion dates slipped into 2024."[148] But, Cal Advocates' premise for its recommended reduction is flawed, as the completion dates for many of the projects Cal Advocates relies on did not "slip;" many of those projects were forecasted to complete in 2024 (or later).[149] Additionally, Cal Advocates did not take into consideration that many of those projects have already incurred costs by the time of the data request in October 2023.

First, Cal Advocates reliance on the data request response does not take into consideration any new work that SCE undertook in 2023, on a priority basis over planned projects, which weren't included in the data request response SCE provided. Moreover, SCE only provided Cal Advocates information on whether a completed project is under or over its forecast, or if an in-progress project is *expected* to be under or over its forecast. SCE did not provide amounts for how much over/underspend is expected or realized for any of the projects. Thus, it was impossible for Cal Advocates to make any assumptions on a number based on the statuses of these projects and the

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[146] *See* App. B, Cal Advocates' Data Request Response to SCE- PubAdv-022-WD, Question 1.

[147] Cal Advocates also includes one project "not started and forecast moved to OU Cap Software" (total of $0.500 million). App. B, Cal Advocates' Data Request Response to SCE- PubAdv-022-WD, Question 1.

[148] *See* App. B, Cal Advocates' Data Request Response to SCE- PubAdv-022-WD, Question 1.

[149] *See* SCE-06, Vol. 1, Workpapers, pp. 107-136 "Application Refresh Capital Work Paper."

qualitative forecast spend. It is also illogical to assume that none of the 2023 forecasted costs for those projects, whose end dates are in 2024, would be spent in 2023. In fact, SCE's 2023 recorded capital expenditures for Application Refresh was $41.253 million, $23.137 million greater than Cal Advocates' recommended forecast. Please see Figure IV-1 below for SCE's data request response for the information provided to Cal Advocates.[150]

[150] *See* Data Request PubAdv-SCE-223-LMW, Q.1.

Figure IV-1
SCE's Response To Data Request PubAdv-SCE-223-LMW Question 1[151]
Capital Project Status Data Request

Application Name	2023 Refresh Cost	Status	Start Date	Completion Date	Over/Under Forecast	If haven't started, explanation to why
SCE.com PODS Capacity Increase (vNet Rebuild)	$1,140,000	Completed	10/17/2022	2/17/2023	Under	
MDMS Tech Refresh	$3,504,000	In Progress	10/3/2022	2/9/2024	Under	
OT (Open Text) Exstream Upgrade	$2,000,000	In Progress	9/7/2023	5/3/2024	Under	
Transmission & Distribution (T&D) Field Application Refreshes - CMS Upgrade	$1,500,000	In Progress	3/16/2023	4/30/2024	Under	
Transmission & Distribution (T&D) Desktop Application Refreshes - SPIDA	$2,581,718	In Progress	8/1/2020	7/31/2024	Over	
Transmission & Distribution (T&D) Desktop Application Refreshes - LENS	$502,611	Completed	1/2/2023	8/30/2023	Under	
Sterling Managed File Transfer - Rearchitect/Modernize(Cloud)	$1,000,000	Has not started				Current architectural evaluation still in progress, expected to complete end of 2023 and project to start next year
PowerPlan Upgrade	$5,040,000	In Progress	5/25/2023	7/22/2024	Under	
SAP MAX attention	$1,800,000	In Progress	1/1/2023	12/31/2023	Over	
SAP BW/4 Hana Upgrade	$3,250,000	Has not started				Pre project assessment is in progress, expected to start next year
Data Power Modernization	$1,000,000	Has not started				Current architectural evaluation still in progress, expected to complete end of 2023 and project to start next year
Lease Interface upgrade/restructure	$800,000	In Progress	5/25/2023	7/22/2024	Under	
ITSM (IT Service Management): BMC Remedy to Helix Migration	$2,500,000	In Progress	7/1/2022	8/30/2024	Under	
Application Rationalization - Trackers	$2,122,353	In Progress	9/1/2022	12/31/2023	Over	
Application Rationalization - API Management	$580,746	In Progress	9/1/2022	12/31/2023	Over	
Application Rationalization - Calpine	$500,000	Has not started				This work is taken by OU cap software and will not be consumed as part of APP RAT budget
Application Rationalization - SAP Data Management - Capital	$3,069,932	In Progress	10/1/2023	9/30/2024	Under	
Application Rationalization - eDMRM storage Cloud Migration	$475,208	In Progress	8/1/2022	12/10/2023	Over	
Application Rationalization - VMware Optimization (OP01)	$268	In Progress	4/11/2022	2/2/2023	Equal to forecast	
Application Rationalization - Containerization of Remedy (OP19.1 - 19.2)	$500,000	In Progress	10/1/2022	11/30/2023	Under	
Application Rationalization - IBM pSeries & IBM SAN Exit (OP03) IAM Modernization/ADM Remediation SAN Switch Consolidation	$1,091,234	In Progress	7/27/2022	12/30/2023	Over	
Application Rationalization - VDI Modernization (OP08)	$373,369	In Progress	10/10/2022	4/21/2023	Over	
Application Rationalization - Consolidate & Standardize Application Server Stack to Oracle WebLogic	$1,004,911	In Progress	6/27/2022	8/31/2023	Over	
Application Rationalization - SCE Costs	$727,161	In Progress	9/1/2022	9/30/2024	Over	

Cal Advocates' flawed analysis for 2023 also brings into question its forecast recommendation for 2024 and 2025 capital expenditures as well, which are discussed in the next section.

(3) Cal Advocates' Recommendation For 2025 Is Based On Mistaken Assumptions Of SCE's 2023 Forecast Inaccuracies And Does Not Consider Work Planned In 2025

Cal Advocates asserts that the basis for Cal Advocates' 2024 and 2025 forecast relies on the use of "trending historical data that, by itself, is an acceptable forecasting method." Specifically, Cal Advocates recommends use of SCE's last recorded year (2022) expenditures to be used for SCE's 2025 forecast. Cal Advocates is silent on the new work itself that the Application Refresh team will be undertaking, which is discussed in testimony.[152] As demonstrated by SCE's increasing costs, SCE's expenditures are trending upward, making Cal Advocates' reliance on LRY inadequate to capture the new capital work that SCE will undertake in the GRC period (see above in section IV.B.c.1).

Additionally, Cal Advocates' states that its recommendation also considers the lack of reliance in SCE's forecast, based on Cal Advocates' assumption that SCE's spending would decrease significantly in 2023. Actually, SCE's recorded 2023 capital expenditures totaled $41.3 million, 5.6% below its forecast of $43.6 million and certainly much higher than Cal Advocates' proposed $18.116 million. Use of Cal Advocates' flawed methodology resulted in a difference of $23.137 million below actual recorded costs (56% difference) for 2023 and should not be relied upon. Given that Cal Advocates uses this flawed methodology as its premise for its 2024 and 2025 forecast as well, those recommendations should also be disregarded.

d) Conclusion

Cal Advocates' recommendation for SCE's Application Refresh capital forecast is based on incorrect assumptions made from the status of 2023 projects prior to year-end 2023. Additionally, Cal Advocates forecast does not take into account the expanding assets and new work that this activity will perform in 2024 and 2025. SCE's proposed updated 2023 forecast based on the recorded 2023 capital expenditures, as well as its 2024 and 2025 forecasts should be adopted, as they

[151] Note that the entire response to the Data Request PubAdv-SCE-223-LMW Question 1 is provided in the appendix.

[152] *See* Ex. SCE-06, Vol 1, pp. 67-68, p. 70, and pp. 76-79.

reflect the expanding scope of efforts in SCE’s IT environment to ensure reliability, quality, and the security of SCE's portfolio of applications and tools.

V.

TECHNOLOGY INFRASTRUCTURE MAINTENANCE & REPLACEMENT

A. O&M Expenses

1. SCE Application

The Technology Infrastructure Maintenance and Replacement work activity is critical to the support of the business applications and services that allow SCE to safely deliver reliable, clean, and affordable energy for customers. This activity consists of three sub-work activities: (1) Data Center Infrastructure; (2) End User Computing Maintenance, Services & Replacement; and (3) Technology Adoption.[153]

The Data Center Infrastructure O&M sub-work activity supports the computer, storage, and network infrastructure housed in two SCE enterprise data centers: Alhambra Data Center and Irvine Operations Center. This sub-work activity involves the procuring, installing, and maintenance of all enterprise data center hardware infrastructure. This infrastructure is inclusive of over 8,900 midrange servers, over 5 petabytes of data storage, over 600 data network routing and switching infrastructure and 1000 appliances to support over 500 large data repository solutions.

The End User Computing Maintenance, Services & Replacement O&M sub-work activity covers the performance management of SCE's Service Desk and maintenance of devices. This sub-work activity includes the management of the third-party vendor contractual obligations and performance for cellular and wireless, product ordering, printing, audio, and visual. It also includes the management of cellular devices and monthly plans, software licensing, renewals, computer accessories, and printers.[154] SCE utilizes last year recorded as the basis for SCE's test year forecast for labor. The labor forecast represents the need for full time employees to manage MSP performances and the completion of activities as per contract commitment. SCE uses an itemized forecast as the basis for the test year for non-labor O&M expenses. The non-labor forecast includes the maintenance of 8,500 smart phone plans, 10,000 tablet cellular data and Apple Care, 3,500 air cards, 885 printers, 17,200 laptops and desktops, and 1,020 teleconference rooms with AV equipment across the company.[155]

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[153] Ex. SCE-06, Vol. 1, p. 83.

[154] Ex. SCE-06, Vol. 1, p. 104.

[155] Ex. SCE-06, Vol. 1, p. 110.

Table V-20 The table below shows Technology Infrastructure Maintenance and Replacement's O&M 2018-2022 recorded amounts, the 2025 Application forecast, Cal Advocates' forecast, Cal Advocates' variance from SCE, and SCE's Rebuttal position. For Test Year 2025, SCE Application forecasted $24.605 million in O&M expenses for this work activity which has been reduced by $0.538 million for an operational improvement in SCE's rebuttal position as discussed below.

Table V-20
Technology Infrastructure Maintenance & Replacement O&M
Recorded 2018-2022 and Forecast 2025
Summary Of SCE and Cal Advocates Positions
(2022 Constant $000)

Line No.	Category	SCE Recorded					2025 Forecast			
		2018	2019	2020	2021	2022	SCE Application	Cal Advocates	Cal Advocates Variance from SCE	SCE Rebuttal Position
1	Data Center Infrastructure	13,616	9,192	10,128	8,358	7,746	9,371	9,371	-	9,371
2	End User Maintenance, Services, & Replacement	16,993	16,622	14,688	13,201	14,008	15,234	15,234	-	14,696
3	**Total**	30,609	25,814	24,816	21,561	21,754	24,605	24,605	-	24,067

2. Cal Advocates' Position

Cal Advocates did not oppose SCE's O&M forecast for Technology Infrastructure Maintenance & Replacement.[156]

3. SCE's Rebuttal To Cal Advocates' Position

As part of the SCE's Operational Excellence initiative, SCE has identified and implemented an efficiency improvement since filing our initial testimony in May 2023. Within the End User Computing O&M forecast, SCE implemented an Interactive Voice Response (IVR) system with automated phone routing capabilities that mimic the manual call routing work previously performed by Edison Operators. This transition from a manual to automated way of working resulted in a $0.538 million reduction in our 2025 End User Computing Labor O&M work activity forecast due to the elimination of all seven Edison Operator positions.

[156] Ex. CA-17, p. 28.

4. Conclusion

As no party opposed the Technology Infrastructure Maintenance and Replacement O&M forecast, the updated forecast of $24.067 million with the $0.538 million Test Year reduction for the automation of phone routing requirements should be approved.

B. Capital Expenditures

As discussed above, the Technology Infrastructure Maintenance and Replacement GRC activity consists of three sub-activities: (1) Data Center Infrastructure, (2) End User Computing and (3) Technology Adoption. SCE's capital expenditures request, Cal Advocates' recommendations, and SCE Rebuttal Position are discussed below.

1. Data Center Infrastructure

a) SCE Application

The Data Center Infrastructure (DCI) sub-work activity is comprised of activities related to refreshing and maintaining the computer, storage, and network infrastructure housed in the two enterprise data centers, Alhambra Data Center and Irvine Operations Center.[157] The capital expenditures fall into five categories: 1) Server Replacement, 2) Storage Replacement, 3) Data Center Network Replacement, 4) Appliance Replacement, and 5) Organic Growth. SCE uses a five-year life cycle[158] as an effective and operationally prudent standard to maintain IT systems reliability. This applies to all IT infrastructure hardware. Historical experience has shown that extending hardware beyond this five-year life cycle results in hardware more prone to outages due to lack of spare parts, lack of vendor support for operating software and firmware, and an inability to consistently stay current not only on a specific hardware component but also on the integration with other hardware equipment/components.[159]

Table V-21 below shows the 2023-2025 capital expenditures forecast for SCE's Application, SCE's revised forecast, Cal Advocates' forecast, the variance between Cal Advocates and SCE's forecast, and SCE's rebuttal position. Also shown in the table is the Data Center Infrastructure 2018-2022 recorded capital expenditures and SCE's Rebuttal forecast for 2023-2025. The forecast

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[157] SCE's two co-primary production data centers provide disaster recovery for one another.

[158] Appendix B: Workpapers: "How Often Should I Replace My Servers.pdf," *available at* https://www.revolutiongroup.com/blog/how-often-should-i-replace-my-servers.

[159] Ex. SCE-06, Vol. 1, p. 91.

increase in 2023-2025 is driven by 1) aging technology, 2) data growth, 3) wildfire mitigation, and 4) significant rise in the cost for IT hardware resulting in sharp increases in costs.

For Technology Adoption, Cal Advocates did not oppose SCE's forecast. SCE's rebuttal position reflects the proposal to include the 2023 recorded amounts as the forecast for 2023.[160]

Table V-21
Technology Infrastructure Maintenance & Replacement Capital Expenditures
2023-2025 Forecast
Summary Of SCE and Cal Advocates Position
(Nominal $000)

Line No.	GRC Activity	2023 - 2025 Forecast					
		SCE Application	SCE Adjustment	SCE Revised Forecast	Cal Advocates	Cal Advocates Variance from SCE	SCE Rebuttal Position
1	Data Center Infrastructure	198,789	(11,109)	187,680	121,101	(66,579)	181,108
2	End User Maintenance, Services, & Replacement	116,147		116,147	81,643	(34,504)	124,890
3	Technology Adoption	37,521		37,521	37,521	-	34,243
4	**Total**	352,457	(11,109)	341,348	240,265	(101,083)	340,241

Line No.	GRC Activity	SCE Recorded					SCE Rebuttal Position			
		2018	2019	2020	2021	2022	2023 Recorded	2024 Forecast	2025 Forecast	Total 2023-2025
1	Data Center Infrastructure	36,687	35,774	54,508	38,243	28,349	39,241	61,053	80,814	181,108
2	End User Maintenance, Services, & Replacement	14,554	15,574	12,272	21,611	29,560	38,580	41,316	44,994	124,890
3	Technology Adoption	914	429	3,442	2,681	7,834	12,101	11,685	10,457	34,243
4	**Total**	52,155	51,778	70,222	62,535	65,743	89,922	114,054	136,265	340,241

b) Cal Advocates' Position

For Data Center Infrastructure, Cal Advocates recommends a capital expenditure forecast based on the three-year average from 2020-2022 of $40.367 million for each year from 2023 to 2025 because it incorporates a full year of appliance costs, which represents the shift that SCE is making to this asset category from server and storage assets.[161] Cal Advocates asserts that it does not support SCE's forecast drivers of technology obsolescence, data and capacity growth, wildfire initiative support, and categorical vendor pricing increases based on their assessment of SCE's reasoning and provided

[160] *See* Ex. SCE-11 for SCE's 2023 recorded capital expenditures and Ex SCE-18, Vol. 01, Ch. VI for SCE's proposal that the Commission authorize SCE's 2023 recorded expenditures in place of SCE's original 2023 forecast across the case. The 2023-2025 variance for non-contested activities such as Technology Adoption are due to the difference in SCE's 2023 recorded vs. Cal Advocates uncontested forecast amount.

[161] Ex. CA-17, pp.5, 39.

cost support.[162] Cal Advocates also states that this multi-year average (2020-2022) is based on "old" historical data, and therefore it serves as a better basis than relying on five-year-old purchase orders adjusted for a 40% estimated increase (SCE's itemized forecast methodology).[163]

c) SCE's Rebuttal To Cal Advocates' Position

(1) An Itemized Forecast Provides A More Reasonable Forecast Of DCI Assets Requiring Replacement During The GRC Period

Cal Advocates mischaracterizes SCE's itemized forecast method used for the Data Center Infrastructure sub-activity as "unreasonable" and "unreliable,"[164] while failing to understand why this forecasting approach is the most transparent and accurate method for forecasting future capital expenditures for DCI. SCE acknowledges, that due to the rapid pace of technology advancement, a degree of uncertainty will exist in terms of the exact replacement technologies/equipment that will be procured and commissioned in SCE's data center environments during the forecast period, and the exact pricing for those replacement technologies in the future are difficult to predict with complete accuracy. Nevertheless, SCE reemphasizes that its itemized forecasting methodology using historical purchase orders is more appropriate than Cal Advocates' use of a three-year historical average from 2020-2022. SCE's forecast should be adopted.

As discussed in SCE's opening testimony and multiple data request responses, the wide variety of assets and technologies that exist in SCE's data center environments share the same schedule-based, vendor-specified end-of-life condition and need to be replaced/refreshed with new hardware assets after five years from the date when the assets were first commissioned.[165] SCE has an obligation to put these assets into service and maintain their full functionality and capability over the assets' useful life. The vast majority of this hardware portfolio is required to be operational 24 hours per day, seven days per week, 365 days per year. It is imperative for SCE to actively manage and replace/refresh its data center hardware assets on a five-year schedule in order to avoid deleterious impacts to business operations caused by hardware performance issues, lack of replacement parts or vendor support, or even the risk of cyber-attacks due to out-of-date firmware or operating software. As a

[162] Ex. CA-17, pp. 17-42.

[163] Ex. CA-17, p. 52.

[164] Ex. CA-17, p. 44.

[165] Ex. SCE-06, Vol. 1, pp. 91-92. SCE also discusses the five-year replacement cycle in the following DR response: PubAdv-SCE-265-LMW Q.3.

result, IT assesses its data center hardware asset portfolio, identifying those assets that are due for refresh/replacement, working with SCE's internal data center subject matter experts and external vendor partners to develop hardware asset refresh plans based on the technologies and configurations available at that point in time to meet SCE's business needs, and executing the asset refreshes/replacements.

SCE's forecast uses the historical 2018, 2019, and 2020 purchase orders as the basis for the 2023, 2024 and 2025 forecast, respectively, and then adjusts these figures to account for expected pricing increases for the new hardware/technology products from SCE's vendors. While SCE acknowledges that this forecasting method cannot predict what the exact replacement asset/technology and future pricing will be on a line item-by-line item basis, what this forecasting method does accomplish is establishing the "source" hardware asset portfolio that is due for scheduled refresh/replacement within the forecast year, using SCE's purchase order log (i.e., itemized list of historical asset purchases as documented in SCE's procurement database). Armed with this "source" list of historical hardware asset purchases, SCE then performs due diligence to determine what the specific "target" replacement technology/hardware asset will be that aligns with both SCE's data center business needs/requirements and our vendor partner's latest technology offerings that provide the necessary capabilities.

Cal Advocates' assertion[166] that because SCE is replacing aging hardware assets with newer technology, somehow makes the itemized forecasting methodology "unreliable" is both misleading and unreasonable. SCE's data center hardware replacement strategy replaces an obsolete "source" business capability with a new/similar "target" business capability to support SCE's critical data center operations; the exact technology or asset category used to fulfill that business capability is immaterial. As SCE explained in data request responses, in certain scenarios, the replacement assets will be different from the original assets being replaced. For example, in certain scenarios SCE has transitioned from mid-range server or storage assets/technologies to appliance assets/technologies, to satisfy the data center business needs/requirements at the time of replacement. SCE's data center operations should not be artificially constrained to strict like-for-like asset replacements, so long as the new technologies are providing the necessary capabilities for the legacy assets they are replacing.

[166] Ex. CA-17, p. 44.

(2) Cal Advocates' Comparison Of DCI Hardware Replacement To OU Capitalized Software As Justification For A Multi-Year Historical Averaging Forecast Is Inaccurate

Cal Advocates attempts to draw a comparison between OU Capitalized Software and DCI to argue that the use of historical averaging as the forecasting method is appropriate in both scenarios.[167] This comparison is inaccurate and lacks merit as the scope and type of work performed in DCI is completely different from OU Capitalized Software. In the case of OU Capitalized Software, SCE explains the reasons why multi-year historical averaging is an appropriate forecasting method using a "capital blanket" approach in its testimony.[168] Specifically, SCE explained:

> First, these blankets are all comprised of numerous smaller projects, of varying sizes. Second, the projects within these blankets are generally not reactive, which means a certain amount of planning and preparation is involved before the project can be executed. Third, projects in these blankets can be unplanned and vary in cost depending on the emergent business need being addressed. Fourth, there is reasonable visibility of what business needs will be solved by projects in the short term (i.e., between 6 and 24 months), but not as much visibility of what projects will be executed to solve longer term business needs. Finally, while historical spending for these blankets has varied, it has varied within a relatively limited range.[169]

DCI, on the other hand, is focused on the recurring, schedule-based replacement of aging hardware assets, not on incremental/new business capability enablement through capital software solutions. Multi-year historical averaging is not appropriate for DCI for the following reasons. First, DCI's forecast methodology utilizes historical itemized purchase orders for legacy hardware assets, with price escalation included; capital blankets are not used. Second, DCI asset replacements *are* reactive to schedule-based replacement requirements, unlike OU Capitalized Software projects. Third, DCI asset replacements are schedule-based and are therefore planned for in advance of the forecast period (unlike OU Capitalized Software projects can be unplanned and vary based on business needs). Finally, historical spending for DCI does vary year to year, with certain years requiring higher levels of spend compared to other years, depending on the size and scope of the hardware asset portfolio requiring replacement in a given year.

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[167] Ex. CA-17, pp. 45-46.

[168] Ex. SCE-06, Vol. 02.

[169] Ex. SCE-06, Vol. 02, pp. 139-140.

Cal Advocates implicitly acknowledges that OU Capitalized Software and DCI are not the same, conceding "[g]ranted, not all the characteristics are similar."[170] For the reasons outlined above, Cal Advocates' comparison of DCI to OU Capitalized Software does not hold merit and therefore, does not provide support to use Cal Advocates three-year historical forecast method for DCI.

(3) The Eight Percent Annual Price Escalation Used In The Forecast Is The Most Reasonable Estimate Of Future Pricing Increases For Technology Advancements And Market Cost Pressures

As explained in testimony, SCE's itemized historical purchases provide the most reliable forecasting basis for DCI asset replacements for the 2023–2028 forecasting period. This forecast approach must also include adjustments/modifications to account for endogenous factors within SCE's IT organizational unit (i.e., organic capacity growth, transition of hardware assets originally implemented under other efforts such as OU Capitalized Software ("Technology Solutions") and Customer Service Re-Platform Project (CSRP) to IT Operations,), and exogenous environmental and technology-driven factors that are outside of SCE's control (i.e., rapid technology changes and the introduction of new hardware products for DCI, vendor pricing increases due to market and economy-wide inflationary pressures).[171]

SCE applied an eight percent (8%) annual price escalation to the historical base of hardware asset purchases (discussed above) to factor in expected price increases for hardware, adjustments for new technology, and maintenance support. While Cal Advocates states that it "understands the current environment and its impact on the increase in prices," – seemingly acknowledging the prudency and necessity of accounting for expected future cost increases – it argues that these same issues may not exist in the forecast years and does not take this known cost driver into consideration in its recommended forecast.[172]

It is true that SCE does not control the broader economy-driven or market-driven forces that will affect future vendor pricing, nor can we predict with certainty what those pricing changes will be during the forecast period. That is precisely why SCE consulted directly with our existing vendor partners to establish a range of potential price increases, based on the best available

[170] Ex. CA-17, p.46.

[171] Please see data request response to PubAdv-SCE-111-LMW, Q6.a-d Revised for additional elaboration on SCE's itemized forecasting methodology for the Data Center Infrastructure sub-activity.

[172] Ex. CA-17, p. 42.

information known to both SCE and the vendors at the time our GRC forecast was developed. The 8% annualized escalation rate was determined based on direct business-to-business communications conducted between SCE and the vendors.[173] Based on the low and high percentage ranges for potential price increases provided for each of the asset categories, SCE developed an average low of 8% and an average high of 12% as the base for the year-over-year price increases for hardware replacement during the GRC period. SCE adopted the low end of the annualized pricing increases at 8% as the annualized escalation factor to account for the overall cost of hardware replacement, given pricing uncertainty/volatility during this GRC period.

Table V-22 below shows the DCI vendor pricing information collected and relied on to select the low end 8% annual pricing increase.

Table V-22
DCI Vendor Survey Regarding Price Increases for 2023[174]
Nominal $

Vendor	Low	High	Date	Asset Category
[redacted]	7%	20%	1/1/2022	Servers
	7%	20%	10/1/2022	Servers
	7%	7%	2/16/2023	Servers
	8%	15%	11/1/2021	Storage
	8%	15%	2/1/2022	Storage
	15%	15%	2/16/2023	Storage
	8%	8%	2/16/2023	Appliance
	4%	8%	11/1/2022	Appliance
	7%	8%	2/16/2023	Multiple (Reseller)
	5%	5%	2/22/2023	Multiple (Reseller)
Average	**8%**	**12%**		**SCE adopted 8% as an optimistic target.**

(4) Cal Advocates' Three-Year Historical Average Forecast Uses The Same "Old" Purchase Order Information It Finds Unreasonable

Cal Advocates' assertion that a three-year average forecasting method is preferable to SCE's itemized forecasting methodology based on historical purchase orders presents a fundamental logical fallacy. Cal Advocates argues that SCE's itemized forecast "using *old* information is unreasonable" due to technology dynamics and pricing uncertainty in the forecast period. Yet, Cal

[173] Please see data request response for CONFIDENTIAL- PubAdv-SCE-211-LMW Q4.f.

[174] See Data Request response CONFIDENTIAL-PubAdv-SCE-111-LMW Q.10.

Advocates recommendation of $40.367 million forecast for each year from 2023 to 2025 is based on a three-year average of costs from 2020-2022, which Cal Advocates acknowledges is "*old* historical data."[175]

Cal Advocates argument in favor of its recommended three-year average contradicts its argument against SCE's use of an itemized forecast. Both rely on "old information" as the basis of the respective forecasts. SCE's historical purchase orders executed in the three-year time frame (2020–2022) that Cal Advocates uses for its three-year average forecast recommendation are intrinsically embedded within the historical data. Why is SCE's itemized forecasting methodology based on "old information" unreliable, yet Cal Advocates' recommended method of averaging "'old' historical data" is somehow more valid?

In summary and as explained above, an itemized forecast based on five-year-old purchase orders is the best reflection of SCE's data center environments. As such, Cal Advocates' proposed three-year average forecast method should be rejected.

(5) <u>At A Minimum, Cal Advocates' Recommended Forecast Must Be Corrected To Account For Clear Errors And Omissions</u>

As discussed in the preceding sections, Cal Advocates' forecast recommendation uses a three-year historical average from 2020-2022 as the forecasting basis for 2023-2025. While SCE disagrees with this approach for the reasons discussed above, at a minimum, Cal Advocates' forecast must be revised to correct for three critical errors:

1) Nominal dollar updates to the 2020-2022 historical amounts used in Cal Advocates' forecast to appropriately reflect the nominal pricing for forecast amounts in each of the years 2023-2025 (GRC capital forecast are presented in nominal dollars for 2023, 2024, and 2025 – not in constant 2022 or other basis);
2) In relation to CSRP, Cal Advocates acknowledges the new CSRP system and SCE's recategorization of the system from appliances to storage. Cal Advocates found those claims supported. As a result, Cal Advocates will recognize this incremental increase.[176] The 2018-2020

[175] Ex. CA-17, p. 45.

[176] Ex. CA-17, p. 42.

amounts for CSRP were recorded in OU Capitalized Software and will transition to the Data Center Infrastructure sub-activity as part of its normal refresh operations in 2023, 2024, and 2025; and

3) Additional increase to the forecast amount for DCI hardware purchases associated with projects for 2018 to 2020 that were funded by OU Capitalized Software and have now become a part of the normal refresh operations for the Data Center Infrastructure sub-activity in 2023, 2024 and 2025.

The Table V-23 Line 4 below presents the results of correcting the errors and omissions in Cal Advocates' proposed three-year average method 2023-2025 forecast. The table also shows the calculations for each of the three critical errors in Cal Advocates forecast. The corrected Cal Advocates 3-year historical average forecast method results in a forecast of $54.408 million for 2023, $56.006 million for 2024, and $56.738 million for 2025 (see Table V-23 Line 4). The updated 2023-2025 forecast is higher by Cal Advocates recommendation by $14.042 million, $15.640 million, and $16.372 million for 2023, 2024 and 2025 respectively.

Table V-23
Required Corrections To Cal Advocates Proposed
3-Year Average Forecast Method
Data Center Capital Expenditures Forecast 2023-2025[177]
In Nominal $000

Line	Summary of Forecast Corrections for Errors and Omissions	2023	2024	2025
1	Correction for Historical Nominal $ to Forecast Year Nominal $ (Lines 7-15)	46,385	46,778	47,400
2	CSRP DCI Refresh Forecast (Nominal $) (Lines 16-19)	2,237	6,504	1,774
3	2018-2020 Recorded for Projects (Nominal $) (Lines 20- 23)	5,786	2,724	7,565
4	**Corrected Cal Advocates' Forecast**	**54,408**	**56,006**	**56,738**
5	Less: Cal Advocates' Forecast Without Corrections	40,367	40,367	40,367
6	**Change Required to Correct Cal Advocates Forecast**	**14,042**	**15,640**	**16,372**
	Detail Error Corrections	**Year**	**Year**	**Year**
7	**Corrections for Converting 2020-2022 Nominal to 2023-2025**	**2020**	**2021**	**2022**
8	Data Center Recorded (Nominal $)	54,508	38,243	28,349
9	Escalation Rate (2020 to 2022 dollars, 2021 to 2022 dollars)	0.857	0.899	1.000
10	Data Center Recorded (Constant 2022 $)	63,607	42,516	28,349
11	**Three-Year Average (Constant 2022 $)**	**44,824**	**44,824**	**44,824**
12	**Conversion of Constant 2022 $ to year of Nominal Forecast**	**2023**	**2024**	**2025**
13	Three-Year Average (Constant 2022 $)[1/]	44,824	44,824	44,824
14	Escalation Rate (2022 to 2023, 2022 to 2024, 2022 to 2025)	1.035	1.044	1.057
15	Data Center Forecast (Nominal $)	**46,385**	**46,778**	**47,400**
16	**Adjustment for CSRP DCI Assets 2018-2020 Recorded**	**2018**	**2019**	**2020**
17	Recorded CSRP (Nominal $)[1/]	2,161	6,232	1,677
18	Escalation Rate (2018 to 2023, 2019 to 2024, 2020 to 2025)	1.035	1.044	1.057
19	CSRP DCI Refresh Forecast (Nominal $)	**2,237**	**6,504**	**1,774**
20	**Adjustment for OU Cap. Software DCI Assets 2018-2020 Recorded**	**2018**	**2019**	**2020**
21	OU Cap. Software DCI Assets[1/]	5,592	2,610	7,153
22	Escalation Rate (2018 to 2023, 2019 to 2024, 2020 to 2025)	1.035	1.044	1.057
23	OU Cap. Software DCI Assets (Nomianl $)	**5,786**	**2,724**	**7,565**

First, Table V-23, Lines 7-15 show the correction to Cal Advocates' three-year average approach for deriving the 2023-2025 forecast that failed to include the necessary escalation values for each of the three historical years from their nominal amounts in 2020-2022. The correction converts the 2020-2022 recorded nominal dollar amounts to constant 2022 dollars (Lines 8-10) and then calculates the three-year average for 2020-2022 (Line 11) of $44.824 million in 2022 constant dollars.[178] This step is necessary because a nominal dollar in 2020 is not the same as a nominal dollar in a future year, say for instance 2022. A nominal dollar in 2022 compared to a nominal dollar in 2020 reflects two years of price increases. Since the capital forecasts in the GRC are reflected in nominal dollars,

[177] Please see DR Response CONFIDENTIAL-PubAdv-SCE-111-LMW Q.10 Revised.

[178] Ex. SCE-07, Vol. 01 pp. 113-115.

calculating a nominal forecast for 2023, 2024, and 2025 based on the three-year average of nominal historical amounts for 2020-2023 the requires calculating the calculating the 3-year average in a constant dollar amount and then calculating the nominal dollar forecast for each of the years 2023, 2024, and 2025 from the constant dollar 3-year average amount.

The next step takes the three-year average $44.824 million in 2022 constant dollars and escalates it into nominal dollars for the respective forecast years 2023, 2024 and 2025. The standard capital Escalation Rates for each year (on Line 14) were applied individually to the three-year average amount ($44.824 million in 2022 constant dollars) to correctly calculate the nominal dollar forecast for 2023, 2024, and 2025 (Lines 13-15), respectively. Table V-23, Line 15 shows Cal Advocates' three-year (2020-2022) historical average forecast method corrected for the nominal dollar calculation error.

Second, Table V-23 Lines 16-19 reflect the additional costs for hardware purchases associated with CSRP in 2018, 2019, and 2020 that require replacement in 2023, 2024, and 2025 respectively. After the CSRP project was completed, the assets were added to IT's inventory and transitioned over to the Data Center Infrastructure team as part of normal operations. Based on the five-year refresh cycle, the hardware for CSRP will need to be replaced in 2023-2025. The initial cost for CSRP related projects were recorded in OU Capitalized Software and were not part of the 2019-2020 recorded amounts for the Data Center Infrastructure work activity.[179] The 2018-2020 recorded costs for CSRP related projects should be added to the 2023-2025 forecast to reflect the increase of $2.237 million, $6.504 million, and $1.774 million respectively for 2023, 2024, and 2025.

Third, Cal Advocates forecast must be corrected for its omission of hardware costs associated with projects originally funded and completed under OU Capitalized Software ("Technology Solutions") in 2018, 2019, and 2020. Just like CSRP, after the projects were completed in 2018, 2019, and 2020, the hardware assets were added to IT's inventory and became part of normal operations for the Data Center Infrastructure. Because these costs were not originally recorded in the Data Center Infrastructure work activity, it was not part of the three-year average (2020-2022) that Cal Advocates used to calculate its 2023-2025 forecast.[180] As with all DCI assets, it is important to include the 2018 to 2020 hardware purchased costs of $5.786 million, $2.724 million, and $7.565 million

[179] The CSRP hardware replacements were included in SCE's itemized forecast. *See* PubAdv-SCE-111-LMW Q.10 Revised. In the excel file, filtered on "CSRP" under the Project/Program Name Field.

[180] Appendix B: Workpapers "Correction to Cal Advocates Forecast – Adjustments."

respectively for 2023, 2024, and 2025 due to SCE's standard five-year refresh cycle (as discussed above).

(6) Cal Advocates' Assessment Of SCE's Cost Drivers Is One-Sided And Fails To Address SCE's Data Center Landscape In Its Entirety

Cal Advocates devotes several pages in its testimony to address the four main drivers that form the basis for SCE's expected significant increase in Data Center Infrastructure spend: (1) aging technology, (2) data growth, (3) wildfire initiatives[181] and (4) sharp rise in prices for IT hardware.[182] It is not clear how, if at all, Cal Advocates' analysis is connected to its recommended forecast, which utilizes a three-year average. Cal Advocates comments on aging technology, data growth, and sharp rise in prices are one-sided and show a lack of understanding of the pivotal role of a data center in modern computing.

Data centers are the backbone of SCE's business and house critical IT infrastructure that supports its digital operations, and technology investments from the business. These hardware assets must be replaced/refreshed on a five-year cycle. As SCE previously articulated, due to the rapid pace of technology advancement, a degree of uncertainty will exist in terms of the exact replacement technologies/equipment that will be procured and commissioned in SCE's data center environments during the forecast period. Further, SCE's data center hardware replacement strategy replaces an obsolete "source" business capability with a new/similar "target" business capability to support SCE's critical data center operations. Therefore, the act of replacing "aging technology" with newer, up-to-date technologies to support SCE's business needs in our data centers is indeed a cost driver of the DCI forecast.

Cal Advocates' testimony Table 17-26, on p. 40, that shows SCE's Server Replacement, Storage Replacement and Appliance Replacement capital expenditures for 2018-2022 only depict a small fraction of SCE's historical Data Center Infrastructure costs and only shows costs for a technology shift in 2019-2022 to Hyperconverged Infrastructure (HCI). HCI is an appliance that combines computers, storage, networking, and a dash of virtualization into a single solution that reduces complexity and makes it easy to manage. This HCI shift is what Cal Advocates is referring to when it says that "Servers and Storage were replaced with Appliances in 2019 … so it is unclear to what aging

[181] Wildfire Initiatives mainly impact the forecast in 2024.

[182] The sharp rise in prices as a driver is discussed in Section (2) above.

technology SCE is referring."[183] But, the HCI shift in 2019-2022 only accounts for a portion of the servers and storage included in Data Center Infrastructure's costs, and does not represent the entirety of the data center environment and the costs SCE incurred from 2018-2022.

As explained above, SCE's data centers are comprised of over 8,900 midrange servers (UNIX, Linux, and Wintel), over 5 petabytes of data storage for Storage Area Network (SAN) and Network Attached Storage (NAS), over 600 data network routing and switching connectivity, and 1,000 appliances to support over 500 large data repository solutions. Cal Advocates' comments and Table 17-26 only focus on the HCI shift and ignore everything else that exists in SCE's data center environment, i.e., VMWare ESX servers, Oracle databases on Exadata appliances, Veritas backup software on its own appliance, IBM SAN, and data network switches and routers. Cal Advocates in its testimony Table 17-26 on page 40, fails to include additional data network replacement costs of $7.224 million in 2018, $4.266 million in 2019, and $7.795million in 2020.

Further, Cal Advocates' Table 17-26 ignores the significant technology investments (CSRP and DCI assets from OU Capitalized Software) by SCE in support of Resiliency, Customer Interactions, Distribution Grid, Enterprise Support, Substation, Energy Procurement, and Generation from 2018-2022. The purchases of hardware associated with these investment projects are initially funded by the OU Capitalized Software activity. Upon completion of these projects, the hardware is then added to the data center inventory and eventually becomes part of the data center refresh and is reflected in Data Center Infrastructure costs. These costs are not included in the data on Table 17-26 of Cal Advocates' testimony. For example, Big Data Appliances were purchased in 2020 by the CSRP program. When the project was completed in 2020, the appliances were added to the data center inventory and became part of normal operations for the data center. Based on the five-year replacement standard, the appliances are due for a refresh in 2025. The costs for this refresh will be incurred by the Data Center Infrastructure sub-activity. Technology investments for projects (CSRP and DCI assets from OU Capitalized Software) accounts for $8.023 million in 2023 (from 2018), $9.228 million in 2024 (from 2019), and $9.338 in 2025 million (from 2020) – see the forecast amount from lines 2 and 3 of Table V-23 above.

As for additional data storage growth, Cal Advocates argues that SCE's claimed need for additional data storage growth in SCE's previous GRC (the TY 2021 GRC) never

[183] Ex. CA-17, p. 40.

materialized. This is inaccurate. As explained above, the main driver for the year over year increases for 2019-2022 was due to the continued migration from midrange servers to Hyper-Converged appliances.[184] The forecast and actual spend for servers and storage as shown in Cal Advocates' testimony Table 17-27, p. 41, is not an accurate representation of SCE's actual costs for additional data growth. Cal Advocates' table ignores two critical datapoints: 1) from the 2021 GRC SCE's Errata[185] updates for 2019 and 2020 forecast for servers and storage, and 2) the forecast from the 2021 GRC and actual spend for appliances. As shown in Table V-24 t below, once Cal Advocates' table is corrected, it becomes clear that SCE actually spent $9.637 million *above* what it previously forecast for additional data growth for 2019-2022.

Table V-24
Cal Advocates' Testimony Table 17-27 for Servers And Storage
<u>With</u> The Addition Of Appliances
2021 GRC Forecast And Actual Capital Expenditures From 2019-2022

Asset Category	2019	2020	2021	2022	Total
Forecast					
Server Replacement	17,117	9,112	5,022	3,863	35,113
Storage Replacement	775	6,430	3,316	2,584	13,105
Appliance Replacement	-	10,886	30,170	10,891	51,946
Forecast Total	**17,891**	**26,428**	**38,508**	**17,338**	**100,165**
Actual					
Server Replacement	5,411	1,476	241	199	7,327
Storage Replacement	1,550	330	7	7	1,894
Appliance Replacement	18,234	35,254	26,526	20,567	100,582
Actual Total	**25,195**	**37,060**	**26,774**	**20,773**	**109,802**
Recorded Amount Over (Under) Forecast	**7,304**	**10,632**	**(11,734)**	**3,435**	**9,637**

d) <u>Conclusion</u>

SCE's itemized forecast, including an 8% annual escalation to account for increased costs, provides the most reasonable and reliable forecasting basis for DCI asset replacements for the 2023–2028 forecasting period. SCE proposes updating its forecast to adopt 2023 recorded

[184] Ex. SCE-06, Vol. 02, p. 94.

[185] SCE's Errata Update – 2021 GRC-Errata Update SCE06V1P1A_Errata_Final. The forecast for servers has been corrected to reflect Errata updates from $17.217 million to $17.117 million for 2019 and from $9.200 million to $9.112 million for 2020. The forecast for storage was updated from $1.011 million to $0.775 million for 2019 and from $6.500 million to $6.430 million for 2020.

expenditures of $39.341 million.[186] SCE proposes that the Commission adopt SCE's 2023 recorded capital expenditures of $39.341 million for the 2023 forecast and the itemized forecast amounts of $61.053 million in 2024 and $80.814 million in 2025.

At a minimum, to the extent the Commission is inclined to adopt Cal Advocates' recommendation to use a three-year average, the Commission should correct Cal Advocates' methodology for the errors and omissions, as detailed in Section V.B.1(c)(5) above.

2. End User Computing Maintenance, Services And Replacement

a) SCE Application

The End User Computing Maintenance, Services and Replacement work activity encompasses capital expenditures in the form of refreshing devices for both office and field workers. Office workers are provided with PCs to carry out routine tasks, including email, timesheets, word processing, budgeting activities, and using business-related applications. Employees whose jobs require them to support multiple locations or work remotely after hours are provided a standard laptop; all other employees receive a desktop PC and monitor. Field employees (Troublemen, Linemen, Apparatus teams) are provided with ruggedized devices[187] to respond to transmission and distribution lines issues. Advances in technology and improvements in business processes have enabled up-to-date electronically stored information to replace potentially outdated paper versions for work in the field. The ruggedized laptop deployment was expanded to include Transmission Patrolmen, Substation Technicians, Field Service Representatives, and Meter Technicians in 2017. The capital expenditures forecast for End User Computing is developed through a detailed analysis of the useful life of PCs, desktops, laptops, plotters, and monitors, and the expected refresh requirements for Windows 11, Emergency Command Centers, and training rooms.

Table V-25 below provides a summary of the End User Computing Maintenance, Services and Replacement 2018-2022 recorded capital expenditures, SCE's Rebuttal Position forecast, and SCE's and Cal Advocates' forecast for 2023-2025. SCE forecasts the costs for devices and the cost of refreshes based on the number of units in its current environment. SCE then applied a unit cost, which

[186] *See* Ex. SCE-11 for SCE's 2023 recorded capital expenditures and Ex SCE-18, Vol. 01, Ch. VI for SCE's proposal that the Commission authorize SCE's 2023 recorded expenditures in place of SCE's original 2023 forecast across the case.

[187] Refer to WP SCE-06, Vol. 01, pp. 177-179 – Rugged Device Lifecycle.

is based on actual vendor quotes or an extrapolation of historical cost data for each equipment category type, to the unit forecast by year, to arrive at the End User Computing forecast.

Table V-25
End User Computing Maintenance, Services And Replacement
2018-2022 Recorded Capital Expenditures And Forecast For 2023-2025
In Nominal $000

Line No.	GRC Activity	2023 - 2025 Forecast			
		SCE Application	Cal Advocates	Cal Advocates Variance from SCE	SCE Rebuttal Position
1	End User Maintenance, Services, & Replacement	116,147	81,643	(34,504)	124,890
2	**Total**	116,147	81,643	(34,504)	124,890

Line No.	GRC Activity	SCE Recorded					SCE Rebuttal Position			
		2018	2019	2020	2021	2022	2023 Recorded	2024 Forecast	2025 Forecast	Total 2023-2025
1	End User Maintenance, Services, & Replacement	14,554	15,574	12,272	21,611	29,560	38,580	41,316	44,994	124,890
2	**Total**	14,554	15,575	12,272	21,611	29,560	38,580	41,316	44,994	124,890

b) Cal Advocates' Position

Cal Advocates recommends End User Computing forecast of $24.793 million for 2024, and $27.013 million for 2025. The basis for its forecast is the following: 1) Removal of the 2024 and 2025 Windows 11 project forecast of $10.160 million and $11.168 million, respectively, 2) Adjusting SCE's 2024 and 2025 tablets replacement forecast downward by $6.363 million and $6.813 million, respectively.[188]

Cal Advocates recommends the End-User Computing work activity be decreased by $10.160 million in 2024 and $11.168 million in 2025 for the Windows 11 upgrade. Cal Advocates notes that the Windows 10 project was authorized in the previous GRC and was forecast in the OU Capitalized Software work activity. Cal Advocates argues that, similar to the Windows 10 Project, the Windows 11 project is a software upgrade to an existing operating system and spans the entire SCE enterprise and employee base. Cal Advocates argues that, based on these two factors, the Windows 11 forecast should be removed from the End User Computing work activity and moved into the OU

[188] Ex. CA-17, p. 46.

Capitalized Software category, without an increase to the OU Capitalized Software forecast because the cost of the Windows 11 project can be absorbed in SCE's current OU Capitalized Software forecast.[189]

Cal Advocates also recommends a downward adjustment in SCE's tablets forecast of $6.363 million in 2024 and $6.813 million in 2025. The basis for Cal Advocates' recommendation is due to its asserted inaccuracy of SCE's 2023 SCE tablet forecast. SCE's annual 2023 tablet forecast is 4,100 units, yet, as of September 2023, only 501 had been acquired year-to-date which is an estimated 668 units for the year based on a straight-line calculation. In making its recommendation, Cal Advocates assumes that its calculated 2023 level of annual tablet replacements would continue into 2024 and 2025 at 688 units per year, resulting in a significant over-forecasting of spending on tablets.

c) SCE's Rebuttal To Cal Advocates' Position

(1) The Windows 11 Upgrade Does Not Meet The Inclusion Parameters Established For OU Capitalized Software And Should Remain In End User Computing

The Windows 11 Upgrade project is a non-discretionary operating system upgrade similar to technology refreshes for tablets, desktops, and laptops with an enterprise impact. According to Microsoft's Modern Lifecycle Policy, Windows 10 is approaching the end of its support lifecycle by October 2025. After this date, Microsoft will no longer provide security updates, non-security updates, or assisted support for Windows 10. The upgrade from Windows 10 to Windows 11 is part of SCE's normal business process to remediate the risk non-vendor supported software will have on SCE's operations.

The Windows 11 upgrade does not meet the established criteria for inclusion in the OU Capitalized Software "Technology Solutions" work activity. Projects in the OU capitalized software exhibit are typically new initiatives or driven by adding significantly "new" functionality,[190] and in certain cases can also include system refreshes. As discussed in testimony, system refreshes included in OU Capitalized Software are incidental to projects providing new functionality and are not cyclical in nature and are medium-to-high complexity.

[189] Ex. CA-17, pp. 47-49.

[190] Ex. SCE-06, Vol. 02, p. 2.

For example, the previous Windows 10 Upgrade project supported the Windows 7 to Windows 10 migration and was requested and authorized in the 2018 GRC.[191] The Windows 7 to 10 migration was considered a major update as extensive testing and significant remediation for software applications were required. Remediation activities involved both critical and non-critical applications, all of which were fully remediated to function optimally on Windows 10. This was a major undertaking and therefore, SCE classified the project under OU Capitalized Software.[192] SCE's approach in the 2018 GRC with the Windows 10 Upgrade project being included under the OU Capitalized Software ("Technology Solutions") work activity was a departure from standard historical practice and precedent established under GRCs that pre-date the 2018 GRC. For example, in the 2015 GRC, Microsoft products such as Windows 7 and Office were included in SCE's "Operating Software" work breakdown structure (WBS), which was a separate and distinct area of IT's forecast from OU Capitalized Software. SCE defined Operating Software as "…primarily used to manage and monitor the health, performance, capacity, and configuration of mainframe servers, midrange servers, storage, and personal computers."[193]

On the other hand, the End User Computing Maintenance, Services and Replacement work activity encompasses capital expenditures in the form of refreshing devices for both office and field workers,[194] which includes replacing end-of-life devices with more modern hardware and software.[195] The Windows 11 operating system is considered foundational operating software that must be deployed on all end user computing devices (e.g., desktops, laptops, etc.) in order for those devices to function and be maintained "up to date" with the latest security patches/updates over the course of that operating software's lifecycle. Moreover, the Windows operating system is closely coupled and tightly integrated with the end user devices this software is deployed on. As such, by definition, the Windows 11 Upgrade is more appropriate to be included in the End User Computing Maintenance, Services and Replacement work activity, not the OU Capitalized Software ("Technology Solutions") work activity as Cal Advocates suggests, as this project is part of a cyclical operating

[191] 2018 GRC (A.16-09-001) was the first time Windows 10 Upgrade was requested.

[192] See SCE's Data Request response to PubAdv-SCE-207-LMW Q.2.a.

[193] 2015 GRC, SCE-05 V.02 Pt.1 p. 1.

[194] Ex. SCE-06, Vol. 01, p. 104.

[195] Ex. SCE-06, Vol. 01 p. 106.

software upgrade pattern and characterized as a lower complexity effort compared to the prior Windows 10 Upgrade project.

As such, SCE's inclusion of the Windows 11 Upgrade project in the End User Computing GRC Activity was reasonable and should be accepted and Cal Advocates' recommendation to remove the Windows 11 Upgrade project from the End User Computing GRC Activity to the OU Capitalized Software activity, without a corresponding increase to the OU Capitalized Software forecast should be rejected. However, should the Commission accept Cal Advocates recommendation to move the Windows 11 Upgrade project to OU Capitalized software, SCE urges the Commission to increase the OU Capitalized Software forecast by $10.160 million for 2024 and $11.168 million for 2025.

(2) Cal Advocates' Proposed Reduction For Tablets In 2024 And 2025 Is Based On An Incorrect Assumption Using Outdated Data

At the outset, SCE notes that a reasonable refresh program that replaces devices on a scheduled basis is an important part of providing safe and reliable services to SCE's customers, including ensuring emergency readiness.[196] Cal Advocates' basis for the reduction to SCE's forecast for replacing or refreshing tablets in 2024 and 2025 is based on an outdated data request response which shows that year-to-date, as of September 2023, SCE had replaced or refreshed 501 tablets. Based on this data, Cal Advocates calculates a reduction to SCE's forecast based on projection assumptions that SCE will continue to replace and refresh tablets at this rate through the end of 2023, and into 2024 and 2025. But this assumption has no foundation or proof and is easily disproven. At year-end 2023, SCE recorded a total of 2,319 tablet replacements or refreshes, including 1,694 newly purchased units and 625 refreshed units – 1,651 more units than what Cal Advocates incorrect forecast assumed for SCE's 2023 recorded units.

SCE was unable to replace or refresh all 4,100 units that it had forecast, because it had to defer the tablet refresh work and reprioritized the business needs to refresh rugged devices. As stated in SCE's data request response,[197] as of December 31, 2022, there were 1,869 rugged devices that were over the four-year life cycle and are currently running on Windows 7. With Windows 7 reaching the end of its support cycle, it was critical for SCE to reprioritize the refresh of the rugged

[196] Ex. SCE-06, Vol. 01, p. 106.

[197] Please see data request response PubAdv-SCE-248-LMW Q5.

devices, over the refresh of tablets. As a result of this reprioritization, the end-of-life support for tablets will increase significantly in the near term (i.e., in 2024 and 2025), to avoid putting SCE at risk of performance degradation and increased operational interruptions for office and field employees due to aging devices. Using SCE's replacement and refresh of tablet units in 2023 as the basis for its expected 2024 and 2025 performance is unreasonable.

d) Conclusion

SCE has adopted the Microsoft platform as the corporate standard to provide core capabilities that spans across SCE's enterprise and employee base. The Windows 11 Upgrade project is part of normal operations to ensure continuous vendor support, operational stability, and cybersecurity compliance to support SCE's mission of providing a safe, reliable, and affordable services. Cal Advocates argument to move Windows 11 upgrade to OU Capitalized Software, particularly without a corresponding forecast increase to OU Capitalized Software, has no basis and should be rejected.

Similarly, replacing tablets is also a part of normal operations to allow field personnel to have the adequate technology to safely perform the work required for operational efficiencies. Cal Advocates' downward adjustment to SCE's 2024 and 2025 forecast for tablets is based on faulty and disproven assumptions and should be rejected.

SCE's capital forecast of $41.316 million in 2024 and $44.994 million in 2025 for End User Computing should be adopted.

VI.

OU CAPITALIZED SOFTWARE

A. Capital Expenditures

1. SCE Application

Capital expenditures in OU Capitalized Software are focused on implementing capitalized software platforms and applications to support business capabilities across SCE Business Planning Groups (BPGs) and enterprise-level systems. SCE's capital expenditures forecast for 2025-2028 targets improvements in our capabilities and proficiency in several areas, including Resiliency, Customer Interactions, Distribution Grid, Enterprise Support (Finance, HR, IT), Substation, System Augmentation, Energy Procurement, and Generation. As with many companies, SCE is experiencing growing needs for capitalized software investment to drive efficiency to further enhance safety, reliability, and customer service across the company. Additionally, SCE is taking proactive steps to balance these needs with the need to mitigate future cost pressures by implementing efficiencies within our OU Capitalized Software processes and services. These efforts are resulting in sustainable reduction of $10 million to the forecast beginning in 2025 than what SCE had originally forecast. Table VI-26 below provides the summary of SCE and Cal Advocates positions on OU Capitalized Software capital expenditures.

Table VI-26
Operational Unit Capitalized Software Expenditures
2023-2025 Forecast
Summary Of SCE and Cal Advocates Positions
(Nominal $000)

Line No.	Business Planning Element	2023 - 2025 Forecast			
		SCE Application	Cal Advocates	Cal Advocates Variance from SCE	SCE Rebuttal Position
1	OU Captalized Software	390,249	341,416	(48,833)	346,395
2	**Total**	390,249	341,416	(48,833)	346,395

2. Operational Excellence Savings

SCE's IT organizational unit (OU) identified additional cost savings that will be applied to the 2025 Test Year forecast, as a $10 million reduction. These cost savings are a culmination of portfolio optimization and cost efficiency measures that will be implemented in 2025 and each year

thereafter. This $10 million reduction is considered sustainable cost savings, resulting in a reduced 2025 forecast of $100.862 million.

3. Cal Advocates' Position

Cal Advocates recommends a 2023 reduction of $49 million from SCE's 2023 forecast, based a five-year average forecast method versus SCE's itemized approach. For 2023, Cal Advocates recommends a five-year average (from 2018 – 2022) of $112.721 million. Cal Advocates argues that OU Capitalized Software capital expenditures have fluctuated in a range from $97.6 million in 2019 to $129.3 million in 2022. Cal Advocates states that the historical average best represents a reasonable forecast for 2023 and observes that SCE's forecasts for 2024 and 2025 are consistent with the historical figures and not opposed. Cal Advocates' opposition is to SCE's 2023 capital forecast as the forecast is, according to Cal Advocates, substantially higher and inconsistent with recent historical expenditures.[198]

4. SCE's Rebuttal to Cal Advocates' Position

a) SCE Proposes To Use 2023 Recorded Capital Expenditures In Place Of Its 2023 Forecast

As discussed in SCE-18, Vol. 01, Ch. VI, SCE is proposing that 2023 recorded capital expenditures be accepted as the 2023 forecast for all areas in the GRC. As documented in SCE's recorded 2023 capital expenditures provided to Cal Advocates and all parties on March 11, 2024 (Exhibit SCE-11), SCE recorded $127.650 million in OU Capitalized Software expenditures in 2023. This is $34.504 million less than SCE's 2023 forecast of $161.504 million, due to a shift in solution planning expenses for the NextGen ERP program from 2023 to 2024. Furthermore, the 2023 recorded amount of $127.650 million is closely aligned with LYR spend in 2022 ($129.288 million). SCE recommends that the Commission accept and adopt the 2023 recorded expenses of $127.650 million as the forecast for 2023.

b) Cal Advocates' Proposed Five-Year Average Forecast Method For 2023 Does Not Consider The Consistent Historical Trend In Capital Expenditures From 2019-2022

If SCE's proposal to approve 2023 recorded capital expenditures is accepted, Cal Advocates' recommended forecast for 2023 would no longer apply. Nevertheless, SCE addresses why Cal Advocates' proposed five-year average forecast method is otherwise inappropriate. As shown in

[198] Ex. CA-17, pp. 52-53.

Table VI-26 above, the historical expenditures for OU Capitalized Software have consistently trended upward from 2019 through 2022. While Cal Advocates' recommended five-year average forecast method may be appropriate when capital expenditures vary from year-to-year, that is not what SCE's OU Capitalized Software recorded costs show, making a five-year average inappropriate here.

In addition, the five-year average forecast method is not reasonable given the fact that SCE intentionally reduced the OU Capitalized Software forecast in 2019 and 2020 due to the implementation of CSRP in those years. As discussed in the 2021 GRC, SCE explained that "SCE forecasts a temporary decline in expenditures starting in 2019 and continuing through 2020. This is due to the implementation and stabilization of SCE's CSRP system, which necessitates a temporary system freeze limiting SCE's ability to make integration, upgrades, and operational changes."[199] 2019 and 2020 were anomalous years, with significantly reduced spending, making them inappropriate reference points to appropriately forecast SCE's future costs.

Furthermore, Cal Advocate's five-year average ignores price escalation from the historical period to the forecast year in 2023 nominal dollars, which further understates what Cal Advocates' proposed forecast for 2023 should have been if the Commission were to use its five-year average method.

In addition, the demand for OU Capitalized Software solutions continues to grow as discussed in Ex.SCE-6, Vol. 2, pp. 1-2. As discussed in SCE's testimony, SCE's capital expenditures forecast for 2025-2028 targets improvements in our capabilities and proficiency in several areas, including Resiliency, Customer Interactions, Distribution Grid, Enterprise Support (Finance, HR, IT), Substation, System Augmentation, Energy Procurement, and Generation. For example, SCE needs to make significant technology investments in the next generation of several foundational systems, including critical investments in expanding self-service transaction capabilities to further simplify and streamline the customer experience, and to add predictive analytic capabilities to enable more effective communications and customer support-oriented program sign-ups. These additional costs would not be included in SCE's historical spend.

[199] Ex. SCE-06 Vol.1 Part 2, p.174.

Lastly, 2023 recorded OU Capitalized Software capital expenditures totaled $127.650 million,[200] which clearly shows that Cal Advocates' recommended five-year average forecast method for 2023 was inadequate by $14.929 million ($127.650M - $112.721M).

5. Conclusion

Cal Advocates' proposal to utilize a five-year average forecast method, as opposed to SCE's itemized forecast, for 2023 should be rejected because it understates the actual recorded expenditures. SCE recommends that the Commission accept and adopt the 2023 recorded expenses of $127.650 million as the forecast for 2023.[201] In addition, SCE highlights that sustainable Operational Excellence-driven cost savings have been applied to the 2025 Test Year forecast for this activity, resulting in a $10 million reduction per year for the 2025-2028 period.

[200] 2023 recorded capital was served on March 11, 2024 after all parties had served their direct testimony on February 29, 2024.

[201] *See* Ex. SCE-11 for SCE's 2023 recorded capital expenditures and Ex. SCE-18, Vol. 01, Ch. VI for SCE's proposal that the Commission authorize SCE's 2023 recorded expenditures in place of SCE's original 2023 forecast across the case.

VII.

NEXTGEN ERP MEMORANDUM ACCOUNT

A. SCE's Application

SCE has proposed the NextGen ERP SAP Memorandum Account (NGESMA) to record its as-yet-unknown Implementation costs, in conjunction with the Solution Planning and Solution Analysis activity costs for NextGen, which are included in SCE's OU Capitalized Software forecast in SCE-06 Volume 2. As discussed in SCE's testimony, the current SAP Enterprise Resource Planning (ERP) solution at SCE is a comprehensive set of enterprise resource planning applications and systems that perform several critical functions (e.g., asset management, work management, financial recording and reporting, and supply chain management) and provide required data and information to support SCE's core processes allowing SCE to safely, reliably, and affordably serve our customers faster and with more accuracy. The NextGen ERP program is a complex technology implementation that will move our core SAP enterprise resource planning applications and systems from the current on-premise SAP Business Suite on HANA (SAP ECC) platform to the next generation SAP S4/HANA cloud platform that SAP has developed as the reliable and functional future alternative, and further integrate the non-SAP core applications with the new platform. This transition allows for accelerated data processing and real-time data insights leading to improved responsiveness to customers and streamlined business process with reduced complexity.

Implementation of NextGen ERP will occur in five phases: Solution Planning, Solution Analysis Phase 1, Solution Analysis Phase 2, Implementation and Post-Implementation. SCE's NextGen forecast, in SCE-06 Volume 2, OU Capitalized Software, is for the initial three phases of this complex program: Solution Planning, Solution Analysis 1 (SA1), and Solution Analysis 2 (SA2).[202]

In the Solution Planning phase, SCE completed its preliminary planning activities, formally initiated the project, and conducted detailed program planning, business objective development, and scope and strategy development. A tremendous amount of planning is required due to the complexity of SAP at SCE, our critical dependence on the platform, the numerous processes that interact with SAP, and the multitude of non-SAP systems that connect to SAP and support with SAP the associated end-to-end processes that are in scope. The Solution Analysis Phase 1 scope included multiple initiatives related to Technology Readiness, Process Readiness, Program Readiness, and Request for Proposals

[202] Ex. SCE-6, Vol. 2, pp. 73-88.

(RFP) Support. The Solution Analysis Phase 2 scope consists of completing a series of deliverables to capture the functional and technical requirements of NextGen ERP, determine cloud versus hybrid technology solution, refine the business case and roadmap, and prepare for change management.

The NGESMA is necessary because the program costs for executing the implementation and post-implementation phases will not be known with enough certainty until the completion of Solution Analysis Phase 2, currently expected in fourth quarter 2024. SCE plans to file a separate standalone cost recovery application by the end of 2024 for those costs once the final solution approach, timing, and estimates are complete.

B. Intervenors' Position

1. Cal Advocates' Position

Cal Advocates does not oppose SCE's proposed NextGen ERP SAP Memorandum Account (NGESMA).[203]

2. TURN's Position

TURN asserts the NGESMA is unnecessary because it seeks to record capital costs that are highly unlikely to close to plant separately from the 2021 GRC capital forecast.[204] Thus, TURN argues that the new memorandum account seems to be addressing a non-existent cost recovery risk. TURN further argues that the only 2024 costs to be incurred are likely to be capital, and there will not be O&M cost that need to be separately recovered. Therefore, the separate Next Gen application proceeding should serve as a sufficient opportunity to seek recovery of those costs.[205]

C. SCE's Rebuttal

1. Next Gen ERP Solution Analysis Costs Are Predicated On The Approval Of The NGESMA For Tracking Program Implementation Costs, Until SCE's Next Gen ERP Application Is Reviewed And Approved By The Commission

As discussed in Ex. SCE-07, Volume 1, SCE seeks to establish the NextGen ERP SAP Memorandum Account (NGESMA), with a January 1, 2024 effective date, to record the revenue requirements associated with O&M expenses and capital expenditures for activities related to the

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[203] Ex. CA-17, p. 51.

[204] See D.23-11-036, pp. 646-647, Ex. SCE-07, Vol. 1, p. 45.

[205] Ex. TURN-15, pp. 16-17.

Implementation phase of the NextGen ERP project as discussed in Exhibit SCE-06, Vol. 02 at pages 73-88.

TURN argues that these costs should be covered by the Test Year 2021 GRC forecast.[206] But, it would not be reasonable for NextGen ERP Implementation Phase costs that record in 2024 to be subsumed by the test year 2021 GRC forecast. The reason is simple: These costs were not foreseeable at the time the 2021 GRC was developed and submitted, and were in no way included as part of that forecast (which was submitted in August of 2019).

As explained in SCE's data request response to TURN on this topic, "Until the Solution Analysis Phase 2 is completed, SCE continues to have a high degree of uncertainty related to the total Implementation and Post-Implementation costs."[207] Solution Analysis Phase 2 is expected to be completed in fourth quarter 2024. SCE currently estimates that "there is a high likelihood of at least $35 million to $140 million in 2024 Implementation Costs (capital) eventually being recorded in the proposed NextGen SAP Memorandum Account due to the need for functional design services, technology readiness, platform and cloud Request for Proposals (RFPs), human capital, and other services deemed critical to the efficient transition from Solution Analysis Phase 2 to Implementation, and not requested in the 2025 GRC request."[208]

While TURN points to this response to support its argument that SCE does not expect to incur O&M costs in 2024, that is not the case. SCE clarifies that there is still a potential likelihood of Implementation-related O&M expenses being recorded in calendar year 2024, in addition to the range of capital expenses that are expected to record in the same period. Due to recent developments from the progress of Solution Analysis Phase 2, our understanding of early-stage Implementation activities related to training expenses, decommissioning expenses, and travel expenses has increased. SCE now anticipates that it could incur $2 million to $4 million in Implementation O&M costs in 2024.

SCE seeks memorandum account treatment for the NextGen ERP program, as this mechanism provides for tracking of SCE's Implementation Phase costs incurred starting in 2024, with full transparency, until the approval of SCE's standalone NextGen ERP application. To the extent no costs are recorded in 2024 for NGESMA, there will be no costs for which SCE will need to seek

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[206] Ex. TURN-15, p. 16.

[207] Data Request Response to TURN-SCE-085, Q2.

[208] Data Request Response to TURN-SCE-085, Q2.

recovery, and customers will be no worse off than if the NGESMA had not been established. Customers will not be harmed by the creation of NGESMA. As such, the Commission should approve establishment of the NHESMA, effective January 1, 2024, as the appropriate mechanism to track SCE's NextGen ERP Implementation costs.

D. Conclusion

SCE urges the Commission to accept and adopt the NextGen ERP Memorandum Account, as this will allow SCE to seamlessly transition to NextGen ERP's program Implementation phase without undue delay.

Appendix A

Enterprise Technoology Rebuttal Data Request Responses

SCE-17 Vol. 01: Rebuttal Testimony on Enterprise Technology
Appendix A Data Request

DATA REQUEST	PAGE(S)
PubAdv-SCE-150-LMW, Q.4 Revised with Attachments	A1-A2
PubAdv-SCE-235-LMW Q.1 with Attachments	A3-A5
PubAdv-SCE-235-LMW Q.4.a-o, Revised	A6-A10
PubAdv-SCE-150-LMW Q.8.a-b with Attachments	A11-A13
PubAdv-SCE-235-LMW Q.5.a-f with Attachments	A14-A21
PubAdv-SCE-236-LMW Q.4.a-c	A22-A23
PubAdv-SCE-236-LMW Q.5	A24-A25
PubAdv-SCE-235-LMW Q.6	A26-A27
PubAdv-SCE-068-LMW Q.2, Revised	A28
PubAdv-SCE-235-LMW Q.4.g, Revised with Attachments	A29-A31
PubADV-SCE-235-LMW Q.7.a-d	A32
CONFIDENTIAL- PubAdv-SCE-188-LMW, Q.16 with Attachments	A33-A481
PubAdv-SCE-083-LMW Q.4.a-f	A482-A483
PubAdv-SCE-188-LMW Q.7.a-b with Attachments	A484-A486
PubAdv-SCE-243-LMW Q.6	A487-A488
PubAdv-SCE-083-LMW Q. 11.a-b	A489-A490
PubAdv-SCE-083-LMW Q.14.a,d,e Revised with Attachments	A491-A494
PubAdv-SCE-076-LMW, Q.3.a-f	A495-A497
PubAdv-SCE-076-LMW, Q.6.a-e	A498-A501
PubAdv-SCE-076-LMW, Q.7	A502
PubAdv-SCE-231-LMW, Q.8.a-e with Attachments	A503-A521
PubAdv-SCE-231-LMW, Q.4.a-d	A522-A523
PubAdv-SCE-223-LMW, Q.1.a-d with Attachments	A524-A525

PubAdv-SCE-265-LMW Q.3	A526
PubAdv-SCE-111-LWM Q.6.a-d	A527-A530
CONFIDENTIAL- PubAdv-SCE-211-LMW Q.4.f with Attachments	A531-A543
CONFIDENTIAL- PubAdv-SCE-111-LMW Q.10, Revised with Attachments	A544-A568
PubAdv-SCE-207-LMW Q.2.a-b	A569-A570
PubAdv-SCE-248-LMW Q.5.a-c	A571
TURN-SCE-085, Q.2	A572

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Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 1 5 0 - L M W

To: Public Advocates Office
Prepared by: Kimberly Ann Grant
Job Title: Bus Ops Analyst, Advisor
Received Date: 9/5/2023

Response Date: 11/15/2023

Question 04 Revised:
Referring to SCE's response to PubAdv-SCE-068-LMW Q.2., SCE states, "Based on that, the DPT cumulative benefit to cost ratio of what we already implemented is forecasted at 129% from 2019-2026 and we expect this level of cost savings associated with the DPT solutions to continue through the GRC period." Please provide the calculation and support for how the 129% was determined.

Response to Question 04 Revised:
Please see below table for calculation and support for how the 126% was determined. Please note the benefits depicted in the table are a combination of hard benefits (direct savings) and soft benefits (e.g., efficiencies) that have been converted into financial numbers. The initiatives with hard benefits reflected in the table below include Vegetation Management (Arbora), Digital Work Order Package (WorkIt), and Small Tools as discussed in SCE's responses to PubAdv-SCE-068-LMW question 1, and PubAdv-SCE-150-LMW questions 1 and 2.

D&PT Categories	2019 (A)	2020 (A)	2021 (A)	2022 (A)	2023	2024	2025	2026
Automations - Soft benefits	NA	$291	$1,605	$2,081	$2,400	$2,400	$2,400	$2,400
Emerging Opportunities								
Hard Benefits - Small Tools			$3,377	$1,500	$1,500	$1,500	$1,500	$1,500
Soft Benefits - All others		$254	$303	$7	$116	$116	$116	$116
Sub Total	NA	$254	$3,680	$1,507	$1,616	$1,616	$1,616	$1,616
Field Enablement								
Hard Benefits - Work It				$770	$3,326	$8,872	$9,710	$10,213
Soft Benefits - All others		$346	$648	$753	$753	$753	$753	$753
Sub Total	NA	$346	$648	$1,523	$4,080	$9,625	$10,463	$10,966
Inspection of the Future								
Hard Benefits - Arbora					$4,200	$18,100	$18,100	$18,100
Soft Benefits - All others		$17,392	$14,415	$12,550	$13,964	$14,096	$15,075	$15,121
Sub Total	NA	$17,392	$14,415	$12,550	$18,164	$32,197	$33,176	$33,221
Benefits	**$2,000**	**$18,283**	**$20,346**	**$17,662**	**$26,259**	**$45,837**	**$47,654**	**$48,203**
Cumulative Benefits	**$2,000**	**$20,283**	**$40,629**	**$58,291**	**$84,550**	**$130,387**	**$178,042**	**$226,245**
Spend	**$11,200**	**$35,613**	**$39,313**	**$36,473**	**$14,470**	**$15,786**	**$18,934**	**$20,307**
less spend for non-tracked benefits	**$0**	**($4,648)**	**($4,705)**	**($3,379)**				
Cumulative Spend	**$11,200**	**$42,165**	**$76,773**	**$109,867**	**$124,337**	**$140,123**	**$159,057**	**$179,364**
Cumulative BCR	**0.18**	**0.48**	**0.53**	**0.53**	**0.68**	**0.93**	**1.12**	**1.26**

This table is attached to this response in the file named: PAO-SCE-150.Q4 DPT Benefits Table R1.xlsx.

D&PT Categories	2019 (A)	2020 (A)	2021 (A)	2022 (A)	2023	2024	2025	2026
Automations - Soft benefits	NA	$291	$1,605	$2,081	$2,400	$2,400	$2,400	$2,400
Emerging Opportunities								
Hard Benefits - Small Tools			$3,377	$1,500	$1,500	$1,500	$1,500	$1,500
Soft Benefits - All others		$254	$303	$7	$116	$116	$116	$116
Sub Total	NA	$254	$3,680	$1,507	$1,616	$1,616	$1,616	$1,616
Field Enablement								
Hard Benefits - Work It				$770	$3,326	$8,872	$9,710	$10,213
Soft Benefits - All others		$346	$648	$753	$753	$753	$753	$753
Sub Total	NA	$346	$648	$1,523	$4,080	$9,625	$10,463	$10,966
Inspection of the Future								
Hard Benefits - Arbora					$4,199	$18,100	$18,100	$18,100
Soft Benefits - All others		$17,392	$14,415	$12,550	$13,964	$14,096	$15,075	$15,121
Sub Total	NA	$17,392	$14,415	$12,550	$18,163	$32,197	$33,176	$33,221
Benefits	**$2,000**	**$18,283**	**$20,346**	**$17,662**	**$26,258**	**$45,837**	**$47,654**	**$48,203**
Cumulative Benefits	**$2,000**	**$20,283**	**$40,629**	**$58,291**	**$84,549**	**$130,386**	**$178,041**	**$226,244**
Spend	**$11,200**	**$35,613**	**$39,313**	**$36,473**	**$14,470**	**$15,786**	**$18,934**	**$20,307**
less spend for non-tracked benefits	**$0**	**($4,648)**	**($4,705)**	**($3,379)**				
Cumulative Spend	**$11,200**	**$42,165**	**$76,773**	**$109,867**	**$124,337**	**$140,123**	**$159,057**	**$179,364**
Cumulative BCR	**0.18**	**0.48**	**0.53**	**0.53**	**0.68**	**0.93**	**1.12**	**1.26**

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 3 5 - L M W

To: Public Advocates Office
Prepared by: Matthew Stumpf
Job Title: Senior Manager
Received Date: 10/19/2023

Response Date: 11/7/2023

Question 01:
Referring to SCE's response to PubAdv-SCE-150-LMW Q.1b. SCE states, "These cost savings are not reflected in the current forecast. SCE will update the forecasts to reflect these savings through a future errata with savings split between capital and O&M."

Based on this, of the $6 million expected cost savings for T&D Digital Work Order (WO) Package - WorkIt, please provide the amount of the cost savings split between capital and O&M. In the response state where and in what year that reduction will be recorded in the current GRC (inclusive of exhibit and page number) so that Cal Advocates can clearly trace the reduction.

This information should be available, and allows Cal Advocates the ability to evaluate the impact of the error.

Response to Question 01:

In preparing this response, SCE identified an error for the WorkIt benefits; the estimated savings in 2025 should be approximately $11 million (nominal $) of hard benefits instead of the $6 million figure previously stated. SCE will make corrections to testimony in a future errata to correct this error. Upon making this correction, SCE will promptly issue a corresponding revised response to this data request that provides the specific location in the RO Model where this correction can be traced. Also, SCE will provide revised responses to certain prior data request responses, including PubAdv-SCE-150-LMW Q. 4, PubAdv-SCE-083-LMW Q10a-i, and PubAdv-SCE-068-LMW Q1

Please note that the estimated hard saving reductions to SCE's O&M and Capital forecasts are dependent upon, and will only be realized upon, full authorization for WorkIt and Small Tools. If the referenced projects are not fully authorized per SCE's request, then these estimated savings should not reduce SCE's O&M and Capital Forecasts.

Below are summaries for the capital and O&M benefits for WorkIt and Small Tools and a combined table that shows the total that will be reduced to SCE's O&M and Capital Forecasts. Please see attachment entitled "PubAdv-SCE-235-LMW - 01 WorkIt and Small Tools Benefits.xlsx."

WorkIt Annual Hard Savings $000						
Category	2023	2024	2025	2026	2027	2028
O&M (2025 Normalized)			$ 978			
Capital	$ 3,211	$ 9,039	$ 10,067	$ 10,618	$ 10,685	$ 10,848

Small Tool Annual Hard Savings $000						
Category	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
O&M (2025 Normalized)			**$ 750**			
Capital	**$ 802**	**$ 846**	**$ 861**	**$ 863**	**$ 869**	**$ 882**

Total Annual Hard Savings $000						
Category	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
O&M Constant 2022 (2025 Normalized)			**$ 1,728**			
Capital Nominal	**$ 4,013**	**$ 9,885**	**$ 10,928**	**$ 11,481**	**$ 11,554**	**$ 11,731**

WorkIt Annual Hard Savings/Benefits Constant 2022$

Category	2023	2024	2025	2026	2027	2028
Total Hours*	52,892	141,044	154,335	162,309	162,309	162,309
Avg. Hourly Rate $**	$ 63	$ 63	$ 63	$ 63	$ 63	$ 63
Total $	**3,326,000**	**8,872,000**	**9,710,000**	**10,213,000**	**10,213,000**	**10,213,000**

* Based on analysis of time per activity, number of activities, and number of FTEs performing activities

** Based on weighted avg. hourly rate

WorkIt O&M and Capital Hard Savings/Benefits Constant 2022 $000

Category		2023	2024	2025	2026	2027	2028	Normalized
Total		$ 3,326	$ 8,872	$ 9,710	$ 10,213	$ 10,213	$ 10,213	N/A
O&M	9.7%	$ 323	$ 861	$ 942	$ 991	$ 991	$ 991	$ 978
Capital	90.3%	$ 3,003	$ 8,011	$ 8,768	$ 9,222	$ 9,222	$ 9,222	N/A

WorkIt Capital Hard Savings/Benefits Nominal $000

Category	2023	2024	2025	2026	2027	2028
Escalation Factor	1.069	1.128	1.148	1.151	1.159	1.176
Capital $000 Nominal	$ 3,211	$ 9,039	$ 10,067	$ 10,618	$ 10,685	$ 10,848

WorkIt Annual Hard Savings $000

Category	2023	2024	2025	2026	2027	2028
O&M (2025 Normalized)			**$ 978**			
Capital	**$ 3,211**	**$ 9,039**	**$ 10,067**	**$ 10,618**	**$ 10,685**	**$ 10,848**

Small Tool Annual Hard Savings/Benefits Constant 2022$

Category	2023	2024	2025	2026	2027	2028
Total $*	**1,500,000**	**1,500,000**	**1,500,000**	**1,500,000**	**1,500,000**	**1,500,000**

*Based SME judgement of savings across Districts

Small Tool O&M and Capital Hard Savings/Benefits Constant 2022 $000

Category		2023	2024	2025	2026	2027	2028	Normalized
Total		$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	N/A
O&M	50.0%	$ 750	$ 750	$ 750	$ 750	$ 750	$ 750	$ 750
Capital	50.0%	$ 750	$ 750	$ 750	$ 750	$ 750	$ 750	N/A

Small Tool Capital Hard Savings/Benefits Nominal $000

Category	2023	2024	2025	2026	2027	2028
Escalation Factor	1.069	1.128	1.148	1.151	1.159	1.176
Capital $000 Nominal	$ 802	$ 846	$ 861	$ 863	$ 869	$ 882

Small Tool Annual Hard Savings $000

Category	2023	2024	2025	2026	2027	2028
O&M (2025 Normalized)			**$ 750**			
Capital	**$ 802**	**$ 846**	**$ 861**	**$ 863**	**$ 869**	**$ 882**

Total Annual Hard Savings $000

Category	2023	2024	2025	2026	2027	2028
O&M Constant 2022 (2025 Normalized)			**$ 1,728**			
Capital Nominal	**$ 4,013**	**$ 9,885**	**$ 10,928**	**$ 11,481**	**$ 11,554**	**$ 11,731**

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 3 5 - L M W

To: Public Advocates Office
Prepared by: Kimberly Ann Grant
Job Title: Bus Ops Analyst, Advisor
Received Date: 10/19/2023

Response Date: 11/15/2023

Question 04.a-o Revised:
Referring to SCE's response to PubAdv-SCE-150-LMW Q.4., SCE provided a table supporting a benefit to cost ratio of 129%.

a. The support (including calculations) for how the "soft benefits" were converted to financial numbers.

b. From 2023 to 2026, the support (including calculations) for how the forecasted "hard benefits" were derived/determined.

c. Provide documentation that explains why SCE included "soft benefits in its support for the 129%, if these benefits don't actually result in cost savings. Or is SCE stating these are actual cost savings? If these are actual cost savings then in this GRC to which Exhibit and/or Workpapers (including page number) can these cost savings be traced?

d. How were the "Spend" amounts determined and where are those amounts recorded? In answering this question, please address SCE's historical costs that are well below the "Spend" amounts. For example, in 2020 SCE's recorded costs for labor is $3.256 million, yet the "Spend" is $11.000 million.

e. In the event the "Spend" amounts are from other areas (e.g., Exhibits) where are those costs recorded in this GRC's historical data. In answer this question, please include the Exhibit and/or Workpapers (including page number) so these amount can be traced to their origin.

f. For clarification it does not appear the cumulative benefits outweigh the cumulative spend until 2025. Is this accurate?

g. How would the 129% (per SCE's table) change if only "hard benefits" were used?

h. Why did the "Spend" increase from $11.000 million in 2019 to $36.000 million in 2020, then decrease to $14.470 million in 2023?

i. For the "hard benefits" forecasted from 2023 to 2026 in what year was the work performed (considering SCE mentions a lag time in some cases) and was it performed by the DPT group? If not, the DPT group then which group?

j. For the "hard benefits" shown are the cost savings capital related or O&M related, or both. If both, please provide a breakout.

k. For the "soft benefits" shown are the cost savings capital related or O&M related, or both. If both, please provide a breakout.

l. For 2023 have any of the "hard benefits" been realized. If yes, for "Small Tools" "WorkIt" and "Arbora" state the amount that was realized.

m. For 2023 have any of the "soft benefits" been realized? If yes, state the amount that was realized.

n. For the Small Tools, WorkIt, and Arbora "hard benefits" when did the development phase begin and when was the tool/application implemented?

o. For the Small Tools, WorkIt, and Arbora "hard benefits" are the costs for these assets

capitalized as internally developed assets? If yes, provide the costs for each asset and state the year the asset cost was recorded to the DPT's group historical data.

Response to Question 04.a-o Revised:
Q4a. The soft benefits included in SCE's response to PubAdv-SCE-150-LMW Q.4. were determined as described below.

- Automations: These benefits are from efficiency gains calculated in minutes saved across multiple automations. To convert these to financial numbers, the minutes are multiplied by the estimated cost per minute based on the labor rates of the roles involved in each automation. In 2020, there were 356,767 minutes saved at an average rate of $0.82/minute. In 2021, there were 1,717,949 minutes saved at an average rate of $0.93/minute. In 2022, there were 2,038,355 minutes saved at an average of $1.02/minute. In 2023-2026 forecast, SCE assumed an average 15% increase from 2022 and spread flat over the 4 years.

- Emerging Opportunities: These benefits are from efficiency gains calculated in hours saved across multiple products as well as cost avoidance. To convert the efficiency gains to financial numbers, the hours were multiplied by an estimated average labor rate of $70/hr. In 2020, there were an estimated 3,630 hours saved. In 2021, there was an estimated 4,330 hours saved as well as an estimated cost savings of $3.37M associated with small tools. In 2022, there were an estimated 100 hours saved and from 2023-2026 forecast an average estimated savings of 1,657 hours annually.

- Field Enablement: These benefits are from efficiency gains calculated in hours saved across multiple products. To convert these to financial numbers, the hours were multiplied by an estimated average labor rate of $70/hr. The estimated hours saved each year were 4,939 in 2020, 9,250 in 2021, and 10,760 in 2022. In 2023-2026 forecast, SCE estimated an ongoing savings of 10,760 hours annually.

- Inspections of the Future: These benefits are from efficiency gains calculated in hours saved across multiple products as well as cost avoidance. To convert the efficiency gains to financial numbers, the hours were multiplied by an estimated average labor rate of $70/hr. In 2020, there was an estimated 13,278 hours saved. In 2021 and 2022, there was an estimated 4,158 hours saved and from the 2023-2026 forecast assumes a continued average estimated savings of 4,158 hours annually. In the area of cost avoidance, these numbers were calculated as follows:

    - o For distribution ground inspections, there was an estimated avoided cost of $13.14M in 2020, based on an estimated savings of $33.33/pole and 394,707 poles inspected, as well as a one-time avoided cost of $3.3M for reduced training, map printing and equipment expense. In 2021 there was an estimated avoided cost of $14.1M, based on an estimated savings of $35.00/pole and 403,562 poles inspected. In 2022, there was an estimated avoided cost of $32.15/pole and 371,235 poles inspected. In 2023- 2026 there is a forecasted estimated avoided cost of $34.09/pole based on an estimated 368,149 annual inspections. Please see PubAdv-SCE-068-

LMW Q.1a. for why these savings are categorized as avoided costs.

o For aerial inspections, there was an estimated avoided cost of $0.3M in 2022 and estimated forecasted avoided costs of $1.1M in 2023, $1.3M in 2024, $2.2M in 2025 and $2.3M in 2026. These costs are based on estimated cost savings increasing from $1.15/inspection to $8.17/inspection for aerial distribution and from $4.20/inspection to $28.50/inspection for aerial transmission over this period. It is also based on an estimated average annual inspection volume of 218,130 for aerial distribution and 17,525 for aerial transmission. Please see PubAdv-SCE-068-LMW Q.1a. for why these savings are categorized as avoided costs.

Q4b. From 2023 to 2026, the hard benefits associated with Small Tools, WorkIt and Arbora were calculated as described below. These estimated savings will be included in the errata committed to in SCE's response to question 1 of this data request to adjust the O&M and Capital forecasts downward accordingly.

- For the Small Tools solution, the hard benefit savings were calculated using the 2018 spend as the base cost. The development and implementation of the minimal viable product (MVP) was completed in 2019 and the solution rolled out to all districts in 2020. The value of the solution was demonstrated in 2021 and based on this the associated small tool spend was reduced by $1.5M in 2022.

- For the WorkIt solution, there was an estimated $3.3M hard savings in 2023, with ongoing benefits of $8.9M, $9.7M, and $10.2M in 2024, 2025, and 2026 respectively. Estimated annual savings are based on efficiency gains in work management activities, the number of those activities, and the number of full-time employees performing them. This is calculated based on an estimated 510,580 total hours saved from 2023-2026 at an average rate of $63/hr.

- For the Arbora vegetation management solution, from 2022-2026, there was an estimated $58.5M in hard savings due to efficiencies gained in routine and non-routine work and realized through vegetation management contract cost reductions. The calculation for Routine benefits assumed a capacity gain for more efficient work that would impact the average rate charged per trim and reflective of the confidence that the reduced rate would materialize during competitive bidding given other potential cost pressures. The calculation for Non-Routine benefits also assumed a capacity gain for more efficient work resulting in less time to complete a trim. Lastly, cost savings of $0.5M starting in 2024 due to license savings from the previous tool (Fulcrum) decommissioning.

Q4c. When evaluating use case benefits, DPT looks at both hard and soft benefits to determine the total value of a solution to the business. In addition to hard financial benefits, soft benefits of improved efficiency, data quality, reliability and safety also provide value to the business. Therefore, SCE included these soft benefits in our support for the 126% to reflect the total value the DPT organization has delivered with project solutions. Since soft benefits are not recognized as cost savings, they were converted to financial numbers in order to provide a total benefit amount. SCE

clarifies that the calculated Benefit Cost Ratio (BCR) is a comparison of annual costs to annual benefits to calculate the cost to benefit ratio.

Q4d. To clarify DPT's spend amount in 2020 was $36M. The intent of showing the total recorded amounts in each of the recorded years 2019–2022 in SCE's response to PubAdv-SCE-150-LMWQ4, was to show the total DPT costs incurred regardless of whether the recorded amounts settled to GRC or non-GRC accounts because going forward in the 2025 forecast period, the level of DPT resources anticipated to charge work such as wildfire mitigation-driven projects is minimal in comparison to historical, and still incremental to the DPT forecast in the GRC. In other words, the portion of the total recorded costs that settled to non-GRC accounts and/or a non-DPT GRC activity on a temporary basis plus the portion that settled to the DPT GRC activity is a more accurate representation of the actual historical costs and level of activity performed by DPT.

Q4e. The DPT costs incurred (O&M and Capital) that recorded to other areas outside of the DPT GRC activity are shown in the table below. These amounts were recorded to Wildfire GRC Activity (O&M and Capital) and are located with the other Wildfire activities in SCE-04, Vol. 4 Workpapers, pp.145-157 and pp. 171-172.

	2019 (A)	2020 (A)	2021 (A)	2022 (A)	2023 (F)	2024 (F)	2025 (F)	2026 (F)
Total Spend								
Digital & Process Transformation	11.2	12.0	13.2	16.2	14.5	15.8	21.0	20.3
OU Capitalized Software	-	-	1.3	2.2	-	-	-	-
Wildfire	-	23.6	24.8	18.0	-	-	-	-
Total Spend	**11.2**	**35.6**	**39.3**	**36.4**	**14.5**	**15.8**	**21.0**	**20.3**

(A) - Actual Recorded
(F) - GRC Forecast

Q4f. That is correct. It is not uncommon for project benefits to lag behind the costs as the investment to develop and implement the solution takes place before the business can realize the benefit from the solution. Benefits can also occur in phases and are dependent on the timing of rollout to end users. Even after rollout, it takes time for end users to be fully trained and to have time to learn the system before full benefits are realized.

Q4g. Both soft and hard benefits are important to show the full value of the benefits to the business. When only the hard benefits are considered, the hard benefit BCR is 0.50.

Q4h. The spend increased from $11.0M in 2019 to $36.0M in 2020 due to the ramp up in Wildfire related work, and then decreased to the $14.5M forecast in 2023 due to the ramp down in Wildfire related work.

Q4i. The work for Small Tools was performed by DPT in 2019-2020. The work for Arbora was performed by DPT in 2020-2022. The work for WorkIT was performed by DPT in 2020-2023. Both Arbora and WorkIT projects were transitioned to the IT Technology Delivery team for further development and enhancements at the end of 2022 / beginning of 2023.

Q4j. Please see PubAdv-SCE-235-LMW Q1 and 2.

Q4k. As described in PubAdv-SCE-235-LMW Q.4c, soft benefits do not have cost savings that can be realized. Soft benefits are converted to financial numbers in order to provide a view of the total benefit value to the business. This applies to both capital and O&M related soft benefits.

Q4l. SCE has not performed an analysis of calendar year 2023 recorded costs or savings.

Q4m. See SCE's response to Q4l of this data request.

Q4n. The table below outlines the beginning of development and initial minimal viable product (MVP) implementation date. Rollout of these products as well as additional capability development continued past the initial MVP implementation dates.

Project	Development Start Date	Implementation Date
Small Tools	Feb. 2019	MVP - October 2019
WorkIt	May 2021	MVP – Nov 2022
Arbora	Feb 2020	MVP – Aug 2020

Q4o. Capitalization of the costs associated with the solutions follows accounting guidelines for capitalization regardless of whether the projects are "internally developed" or developed using external resources. For the recorded capital costs see PubAdv-SCE-068-LMW Q3a-c Revised.

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 1 5 0 - L M W

To: Public Advocates Office
Prepared by: Kimberly Ann Grant
Job Title: Bus Ops Analyst, Advisor
Received Date: 9/5/2023

Response Date: 9/19/2023

Question 08.a-b:
Referring to SCE's response to PubAdv-SCE-068-LMW Q.6d., SCE states, "Over 2022-2024 the average capital spend was forecasted at about 60%. For the GRC period of 2025-2028, capital is forecasted at 42% and O and M at 58%, a shift of 18%. This increase in O and M percentage is based on the estimated number of initiatives that are assumed will not be able to meet the capital threshold of $250,000 or the useful life of 5 years." Based on this, please answer/provide the following:

a. The calculation, assumptions, and support for the new O and M percentage.

b. If SCE used the previous O and M percentage how much would the net TY 2025 O and M forecast be lowered?

Response to Question 08.a-b:
In data request PubAdv-SCE-068-LMW question 6d, the percentages for the GRC period 2025-2028 were misstated and should be "Over 2022-2024 the average capital spend was forecasted at about 60%. For the GRC period of 2025-2028, capital is forecasted at 46% and O&M at 54%, a shift of 14%." SCE will provide a revised data request response with the corrected percentages.

As SCE increases investments in new technology prototypes, we expect some level of prototypes will not meet capitalization thresholds during this stage and we use these prototypes as valuable learning experiences to drive progress. While there is no universally applicable average percentage of non-capitalizable prototypes for emerging technologies due factors such as technology complexity, maturity and prototype goals, SCE is assuming less than 10% of our prototypes will not be able to be capitalized. This corresponds to the increased O&M percentage of 14%. SCE is approaching emerging technology prototyping with the goal of learning, iterating, and refining the technology that is being prototyped in order to identify areas for improvements, and ultimately increase the chances of success and customer value in later stages of development. The table below provides the calculations to support the O&M percentage. The table is attached to this response in the file named: PAO-SCE-150-LMW.Q8a-b.Table.xlsx,

Table for response 8a:

	2025	2026	2027	2028
GRC Submitted O&M (constant)	$11,408,118	$11,408,118	$11,408,118	$11,408,118
GRC Submitted Capital (nominal)	$9,547,610	$9,607,033	$9,645,506	$9,683,393
Total O&M and Capital	$20,955,728	$21,015,151	$21,053,624	$21,091,511
Use Case Capacity	67	83	94	105
Average cost per Use Case	$312,772	$253,195	$223,975	$200,872
14% of O&M, higher non-capitalization rate	$1,597,136	$1,597,136	$1,597,136	$1,597,136
Number of non-captalized use cases	5	6	7	8
% non-capitalized use cases	8%	8%	8%	8%
O&M	54%	54%	54%	54%
Capital	46%	46%	46%	46%

In response to 8b: If SCE used the previous O&M percentage of approximately 40%, the TY 2025 O&M forecast would be lowered by $1,927,225 in constant dollars.

	2025	2026	2027	2028
GRC Submitted O&M (constant)	$11,408,118	$11,408,118	$11,408,118	$11,408,118
GRC Submitted Capital (nominal)	$9,547,610	$9,607,033	$9,645,506	$9,683,393
Total O&M and Capital	$20,955,728	$21,015,151	$21,053,624	$21,091,511
Use Case Capacity	67	83	94	105
Average cost per Use Case	$312,772	$253,195	$223,975	$200,872
14% of O&M, higher non-capitalization rate	$1,597,136	$1,597,136	$1,597,136	$1,597,136
Number of non-captalized use cases	5	6	7	8
% non-capitalized use cases	8%	8%	8%	8%
O&M	54%	54%	54%	54%
Capital	46%	46%	46%	46%

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 3 5 - L M W

To: Public Advocates Office
Prepared by: Kimberly Ann Grant
Job Title: Bus Ops Analyst, Advisor
Received Date: 10/19/2023

Response Date: 11/3/2023

Question 05.a-f:
Referring to SCE's response to PubAdv-SCE-150-LMW Q.5a., SCE states, "Our current resource capacity enables us to deliver ~35 use case solutions per year, while our current backlog includes over 150 potential use cases within the 4 categories above. The requested staffing ramp up of an average of approximately 15 FTE resources per year from 2023 through 2028 to a total of 93 incremental resources (see workpaper pages 32-35) will only meet a portion of our demand for continuous improvement and customer value, which is expected to continue to grow over the GRC period. The forecast is for 100-180 new use cases each year across the 4 categories, based on additions in the last 12 months. We estimate between 30%- 60% of those use case ideas will result in enough benefit to pursue, based on experience. This level of staffing will allow us to deliver the highest benefit use cases, while keeping our list of viable use cases higher than our staffing to ensure we focus on the highest benefit use cases."

Based on this, please answer/provide:

a. Why is SCE only able to deliver ~35 case solution per year with its current staffing/resource capacity?
b. With its current staffing/resource capacity of the ~35 case solutions per year how many have resulted in any kind of implementation. For each solution noted, please provide any cost saving, and/or description of the benefits?
c. The support for how the 100-180 new use cases was derived/determined (inclusive of calculations).
d. The support for how the 30%-60% of use case ideas will result in enough benefits to pursue was derived/determined (inclusive of calculations).
e. Since the DPTs group full year of funding (2019?) provide documentation that demonstrates how many use case ideas, or potential use cases, use case solution. etc., the group worked on.
f. Referring to SCE's previous 2021 GRC, Ex. SCE-06 Vol.2 p. 101 (lines 15-16), SCE states, "The number of initiatives is forecast to increase to 16 approximately 40 initiatives in 2021, 45 initiatives in 2022 and 50 initiatives in 2023." Provide documentation that explains (with this expected forecast of initiatives) how the backlog of 150 potential use cases developed.

Response to Question 05.a-f:

5a: DPT's current staffing level provides a capacity of approximately 35 case solutions per year, see response from PubAdv-SCE-150-LMW question 6f. This is based on historical output and workload required from past use case delivery from 2019-2022. Despite DPT being organized as a fast-moving solutions provider, there are bandwidth and resource constraints that realistically limit solutions to approximately 35 solutions per year. The forecasted additional FTEs are to help address the growing demand of the use case list backlog to deliver the needed solutions and associated business value to SCE business units. See attached file named PubAdv-SCE-235-LMW Q5a-c-d.xlsx, for the timing of additional FTEs versus the use case demand backlog over the GRC forecast period. The additional planned FTEs are especially important as the organization continues to look for cost effective solutions that deliver value and rely on new and emerging digital technologies and the rapid prototyping and delivery model that DPT is designed to deliver.

5b: DPT has completed 40 use case solutions from January through October 2023. Please see attached file PubAdv-SCE-235-LMW Q5b.xlsx for the list of the solutions and associated benefit descriptions.

5c-d: For DPT's estimate of future use case demand and delivery, please see attached file PubAdv-SCE-235-LMW Q5a-c-d.xlsx.

5e: Since the DPTs group full year of funding in 2019, the group has delivered a total of 146 use case solutions. This includes 26 in 2019, 39 in 2020, 42 in 2021 and 39 in 2022. Please see attached file PubAdv-SCE-235-LMW Q5e.xlsx for a list of the solutions.

5f: DPT conducted workshop sessions with the OUs to help build the use case list, which resulted in the backlog of 150 potential use cases. These sessions provided the OUs a forum to identify key opportunity needs aligned to DPT delivery capabilities. DPT provides a framework and methodology for the OUs to determine whether their potential use case is covered by the four DPT focus areas (Digital and Mobile applications, Robotic Process Automations, Advanced Analytics and Emerging Technologies). Please see PubAdv-SCE-236-LMW, Q5 for additional information on the development and maintenance of use case backlog.

Backlog and Use Case Delivery Capacity Based on Resources							
	2023	2024	2025	2026	2027	2028	Total
Full Time Equivalents (FTEs) beginning of year	27	45	58	76	95	107	
Planned Added FTEs per year	18	13	18	19	12	13	93
Total Planned FTEs end of year	**45**	**58**	**76**	**95**	**107**	**120**	
Starting Use Case Backlog	150	217	267	302	321	329	
Average New Use Cases Added (see backlog growth est	145	145	145	145	145	145	
Use Cases Removed (assume 30% annually)	44	44	44	44	44	44	
Estimated Use Case Delivery Capacity (use case)	35	51	67	83	94	105	
Remaining Backlog	**217**	**267**	**302**	**321**	**329**	**325**	

Backlog Growth Estimates				
	Potential Annual Backlog	Low	High	Average
Robotic Process Automation	70-100	70	100	85
Advanced Analytics	20-50	20	40	30
Digital and Mobile Applications	5-10	5	10	7.5
Emerging Tech	15-30	15	30	22.5
Totals		**110**	**180**	**145**

Estimated Level of Use Case Ideas that Result in Benefits				
		30%	45%	60%
Use Cases Added Annually	**Low**	33	50	66
	Med	44	65	87
	High	54	81	108

DPT Use Cases Implemented from January through October 2023

Year	No.	Product Name	Benefits
2023	1	DART Analysis Model	Improving safety performance, Operational productivity
2023	2	Model at Edge PoC for Advanced Grid Solutions	Proof of concept
2023	3	Multipole Model for Enterprise Asset	Improved productivity, data quality
2023	4	Computer Vision (CV) Model for Joint Pole	Improved productivity, customer satisfaction
2023	5	Fleet Electrification Early Insight	Improved data quality, enhanced reliability
2023	6	WAN connection failure analysis and model	Improved productivity, reliability, financial loss avoidance
2023	7	DGAL_EV Customer Identification	Productivity improvement, Financial loss avoidance, Enhance reliability
2023	8	EAD_Meter Image Recognition	Improve productivity, data quality, reduce operational complexity
2023	9	NEM Predictive Customer Model for Delayed Bills	Improved productivity and customer experience
2023	10	NEM Predictive Customer Model for High Bills	Improved productivity and customer experience
2023	11	NEM Predictive Customer Model for Settlement	Improved productivity and customer experience
2023	12	NEM Predictive Customer Model for BPEM	Improved productivity and customer experience
2023	13	NEM Predictive Customer Model for Installment Plan	Improved productivity and customer experience
2023	14	EAD_Object Detection Model for Meters	Improve productivity, data quality, reduce operational complexity
2023	15	GenAI Proof of Technology	Proof of technology
2023	16	SCE Executive Forum Intake Form and Dashboard	Time efficiency savings
2023	17	Joint Pole Optimization	Cost Avoidance, Productivity Improvement
2023	18	Digitization of Circuit Breaker Cards	Time efficiency savings
2023	19	T&D Monthly Accrual Process- Release 1	Time efficiency savings
2023	20	Automate DCCM Batch Printing	Time efficiency savings
2023	21	PWRD 88	Time efficiency savings
2023	22	Automate Joint Pole Authorization (JPA) Tabulation	Time efficiency savings
2023	23	Non-PO Requests	Time efficiency savings
2023	24	PPO Cancel 3.0	Time efficiency savings
2023	25	Marketing Attribute Mass Update	Time efficiency savings
2023	26	Tax Rate Differential Evaluation	Time efficiency savings
2023	27	Notifications with the ESF - Environmental screening form	Time efficiency savings
2023	28	SAP Grid Project Delivery Reporting	Time efficiency savings
2023	29	Unit Estimate (UE) upload to PowerPlan (substations & bulk transmission capital work orders)	Time efficiency savings
2023	30	Daily ISU-ECC Reconciliation	Time efficiency savings
2023	31	Batch Invoice Download	Time efficiency savings
2023	32	SDP Enrollment Service Orders - SCE.com/IVR	Time efficiency savings
2023	33	Auto Generate JPA Excel Documents using DM and SAP Data	Time efficiency savings
2023	34	Meter Spot - Change/Remove	Time efficiency savings
2023	35	Invoice Cancellations	Time efficiency savings
2023	36	Manual Parking & Posting Invoices	Time efficiency savings
2023	37	Update of SCE.com tab within SAP	Time efficiency savings
2023	38	Work Order Approval	Time efficiency savings
2023	39	Third Part Form	Time efficiency savings
2023	40	Missing Receipt Notify	Time efficiency savings

DPT Use Cases Implemented 2019 through 2022

Year	No.	Product Name
2019	1	Predictive Model Phishing Propensity (analytics)
2019	2	Smart Speaker- Alexa (automation)
2019	3	Kofax ICR/OCR Enablement (automation)
2019	4	Enhanced Overhead Inspection (mobile)
2019	5	CCA Visualization (analytics)
2019	6	Bank Return (add'l banks)
2019	7	Small Tools iPad
2019	8	MBL Recertification & New Enrollments (1 of 2)
2019	9	Asset Complete Data Capture
2019	10	Payment Arrangement
2019	11	Inspect App Digital Maps 2.0
2019	12	CARE New Enrollment
2019	13	CARE Recertifications
2019	14	MBL New Enrollment
2019	15	Billing exceptions advanced analytics
2019	16	Data as as Service
2019	17	Data Pipeline Development
2019	18	HR Bot
2019	19	T&D Outage Alert Notice RPA
2019	20	Small Tools Vending Machine
2019	21	Distributed Energy Resources Propensity Model
2019	22	Inspect App 2.2
2019	23	Safety Risk Score- Click Integration
2019	24	CCC Payment Arrangement RDA
2019	25	CCA CASR RPA
2019	26	Credit/Write-off Analytic Models

Year	No.	Product Name
2020	1	Dist Inspect App MVP
2020	2	Aerial & Tran Inspect Force Pre Product Release
2020	3	Arbora MVP
2020	4	Safety Risk Model V2
2020	5	Digital Crew board MVP
2020	6	Customer Crew Connect (C3) Mobile App
2020	7	Env Clearances Analytic Model
2020	8	PSPS MVP
2020	9	CCA Dashboard
2020	10	Small Tools deployment
2020	11	SOW Process Optimization
2020	12	Contracting Process Optimization
2020	13	B-Materials discovery
2020	14	Payment default model
2020	15	Electric Vehicle propensity model
2020	16	Solar and battery storage propensity models
2020	17	Grid RTU failure prediction model
2020	18	Pole detection CV model
2020	19	Pole Tag Detection CV model
2020	20	Pole Tag Decifer CV model
2020	21	Blur detection CV model
2020	22	Obstructied image detection CV model
2020	23	Crossarm detection CV model
2020	24	Volt MVP
2020	25	UiPath Platform
2020	26	Digital SF Platform Implementation
2020	27	Bank Returns
2020	28	Ariba Invoice
2020	29	OLA UPDATE (SAP Outline Agreement Updates)
2020	30	ICE Credit Limit Monitoring Process
2020	31	CRM Contact Data Cleanup for CSRP
2020	32	Design Remediation Intake
2020	33	Corporate Document Management Team Automation
2020	34	Importing AF files to eDMRM
2020	35	PSPS Mitigation to Circuits RPA
2020	36	NEM Paired Storage Estimate update
2020	37	Meter Status
2020	38	Master Data Management
2020	39	WSD Inspection Report Extractor

Year	No.	Product Name
2021	1	VOLT Enhancements
2021	2	Inspect App Release (Apollo 13)
2021	3	Uvision POV
2021	4	Inspect App 4.2 Release
2021	5	CI/CD Pipeline for Inspect App
2021	6	Inspect App 4.3 Release
2021	7	Inspect App Test Automation
2021	8	C3 3.0 Release
2021	9	Material Failure Performance Report MVP
2021	10	Volt 1.1 released
2021	11	ACDC 3.0 Release
2021	12	Inspect App 4.3.2
2021	13	ACDC 3.0.1
2021	14	C3 3.0.1
2021	15	C3 3.1
2021	16	Inspect App 4.4
2021	17	Volt 2.0
2021	18	Uvision Pilot
2021	19	Inspect App 4.5
2021	20	Inspect App DevOps Intune Integration
2021	21	RTU Failure Predictive Model
2021	22	Customer load profiles for Building Electrification
2021	23	Transformer profiles to identify EV charging
2021	24	Safety Predictive Model V4
2021	25	Notify CIP
2021	26	Measurement Document to Poles
2021	27	CSRP 211 DF95 MRU and FSR Area Required (Cycle 99)
2021	28	Work Order New
2021	29	Meter Status
2021	30	Rule 15 Contract Validations
2021	31	Wildfire Safety Division (WSD) Inspection Report Extractor
2021	32	Customer Service NEM Paired Storage Estimate update
2021	33	Master Data Work Management
2021	34	CDM Engineering Drawing Issuance Process
2021	35	CCA Exception Process: Misread Rebill Exception
2021	36	To generate pdf copy of Level 3 EPM Processes
2021	37	To generate pdf copy of EPM functional processes
2021	38	PPM Work Order Creation
2021	39	Door hanger & Pacific Graphics files for outage mailers
2021	40	Secretary of State website search
2021	41	CSRP 468 CTVT Serialization
2021	42	CSRP 452 DM39-Service Order Reroute

Year	No.	Product Name
2022	1	Arbora HTP
2022	2	Arbora Routine MVP
2022	3	Deploy InspectForce Aerial (Dist & Trans)
2022	4	Deploy InspectForce Ground Transmission
2022	5	Q1 Inspect App release
2022	6	Q2 Inspect App release
2022	7	Q3 Inspect App release
2022	8	Q4 Inspect App release
2022	9	WorkIT MVP Pilot
2022	10	Model Documentation and Validation Standards
2022	11	Environmental clearances model V2
2022	12	EV detection model
2022	13	Safety predictive model V3
2022	14	Blur detection CV
2022	15	Photo angles CV
2022	16	Obstructed image CV
2022	17	C-hook CV
2022	18	H-frame CV
2022	19	Pole nadir shot CV
2022	20	CARE - Long Form Enhancement
2022	21	CDM Engineering Drawing Issuance Process
2022	22	EPM functional processes
2022	23	EAL Credit Risk Data Collection for Stress Test
2022	24	PPM Work Order Creation
2022	25	Door hanger & Pacific Graphics files for outage mailers
2022	26	Secretary of State website search
2022	27	Essential Use Migration
2022	28	CSRP 468 CTVT Serialization
2022	29	CSRP 452 DM39-Service Order Reroute
2022	30	PPM - Work Order Cancelation
2022	31	Design Manager Global Comments Bot
2022	32	Extract 911 SAP Call Data
2022	33	ODI UAS Image Transfer
2022	34	Update OANs
2022	35	Substation Engineering Microprint Book updating T&D
2022	36	PPM - Customer Commitment Date
2022	37	Mass loads in to Click Software
2022	38	Auto Close BPEM Case ID20 and ID19
2022	39	ODI Folder Deletion

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 3 6 - L M W

To: Public Advocates Office
Prepared by: Kimberly Ann Grant
Job Title: Bus Ops Analyst, Advisor
Received Date: 10/19/2023

Response Date: 10/31/2023

Question 04-a-c:
Referring to SCE's response to PubAdv-SCE-150-LMW Q.8, SCE provides a table, and states, "As SCE increases investments in new technology prototypes, we expect some level of prototypes will not meet capitalization thresholds during this stage and we use these prototypes as valuable learning experiences to drive progress. While there is no universally applicable average percentage of non-capitalizable prototypes for emerging technologies due factors such as technology complexity, maturity and prototype goals, SCE is assuming less than 10% of our prototypes will not be able to be capitalized. This corresponds to the increased O&M percentage of 14%."

Based on this please answer/provide the following:

a. If there is no universally applicable average percentage, then how did SCE determine the 10%? Is that the 8% calculated in the table? If no, please provide the support for the 10%.
b. Provide documentation that explains how SCE determined the 14%. It is not clearly shown in the table, how the amount was calculated but used in one of the cell formulas.
c. How was the "use case capacity" derived? Please provide the support for how those amounts are determined.

Response to Question 04-a-c:

For 4a. While there is no universally acceptable average percentage, according to the Forbes article "*It's Time to Consider Rapid Prototyping*" from July 21, 2021, somewhere between 40% and 95% of new products fail. In addition, since the time of this GRC filing, there is another recent article from Forbes that further supports this position titled *"Five Reasons Why Innovation Decisions Succeed 25x More Often at Top Companies"* from Oct 25, 2023. While this is not a perfect parallel to SCE's emerging technology evaluations, it does provide a basis for our approach. From the technology perspective, these estimates are based on new technology to the market, which is unproven and largely reflects the fact that emerging technologies often involve significant uncertainty. Failure rates can therefore be difficult to predict.

For our estimate, in addition to new technology to the market, we are also including new technology to SCE, that may not be new to the market and thus is more mature, as well as technologies our partners have evaluated, in order to achieve a higher rate of success / capitalization. Based on this, SCE believes that by focusing on technologies where we have a higher degree of confidence in the

viability before prototyping, utilizing experience from partners, and ensuring a strong evaluation process, we can achieve a percentage less than 10%.

SCE's assumed percentage of less than 10% is the 8% shown in the table in our response to PubAdv-SCE-150-LMW Q.8.

	2025	2026	2027	2028
GRC Submitted O&M (constant)	$11,408,118	$11,408,118	$11,408,118	$11,408,118
GRC Submitted Capital (nominal)	$9,547,610	$9,607,033	$9,645,506	$9,683,393
Total O&M and Capital	$20,955,728	$21,015,151	$21,053,624	$21,091,511
Use Case Capacity	67	83	94	105
Average cost per Use Case	$312,772	$253,195	$223,975	$200,872
14% of O&M, higher non-capitalization rate	$1,597,136	$1,597,136	$1,597,136	$1,597,136
Number of non-captalized use cases	5	6	7	8
% non-capitalized use cases	8%	8%	8%	8%
O&M	54%	54%	54%	54%
Capital	46%	46%	46%	46%

For 4b. Over 2022-2024 the average capital spend was forecasted at approximately 60% and O&M at approximately 40%. See the table below for the calculation of Capital vs O&M split for 2022-2024. For the GRC period of 2025-2028, capital is forecasted at 46% and O&M at 54% (see table above). The difference in Capital vs O&M split between 2022-2024 average vs the GRC Period 2025-2028 is 14% (60% - 46%= 14%)

	2022	2023	2024	Total
GRC Submitted O&M (constant)	$ 4,298,159	$ 5,169,697	$ 6,325,052	$15,792,908
GRC Submitted Capital (nominal)	$ 5,822,052	$ 9,308,078	$ 9,472,855	$24,602,985
Total O&M and Capital	$10,120,211	$14,477,775	$15,797,907	$40,395,893
O&M	42%	36%	40%	39%
Capital	58%	64%	60%	61%

For 4c. The use case capacity is derived from dividing the average number of people (FTEs) in 2023 by the average number of people per use case and then multiplying by the number of use cases each person can work on each year. See table below for the calculation.

Total average resources in 2023 (A) =	35	People
Avg 3-5 people per use case (B) =	4	People
Each person works on 3-5 use cases / year (C) =	4	Use Cases
Use case capacity ((A/B)*C) =	**35**	**Use Cases**

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 3 6 - L M W

To: Public Advocates Office
Prepared by: Kimberly Ann Grant
Job Title: Bus Ops Analyst, Advisor
Received Date: 10/19/2023

Response Date: 10/31/2023

Question 05:
Referring to SCE's response to PubAdv-SCE-068-LMW Q.7. SCE states, "we currently have a list of 150+ potential use case demands, and not a sequenced list of projects planned for 2023- 2028. Therefore, our estimated costs are based on previous projects and current backlog of demand that are broken down by the four key categories."

Based on this, for clarity, does that mean SCE cannot identify a specific project or specific asset which the intended capital request will fund, but anticipates capitalizable assets that may evolve from a backlog of potential cases?

If Cal Advocates' understanding is in error, please clarify.

Response to Question 05:
SCE's selected capital forecast method was to forecast the overall capital needs, rather than identifying specific initiatives. The forecast method utilized was based on a list of potential backlog opportunities, the addition of new opportunities in the next two years, and our experience in identifying and delivering valuable solutions for the business. A forecast method based on specific projects was not selected due to the dynamic nature of this area; the priority of projects changes throughout the year due to the nature of evolving technology and business needs. Based on DPT's delivery of capitalized projects from 2019 to 2023, the capital forecast method was chosen as the best approach.

The following highlights the dynamic nature of DPT's work. SCE has identified demand for over 150 potential use cases and regularly adds new use cases to this backlog list (estimated at an average of 150 use cases annually) as well as removal of use cases that are not deemed beneficial after evaluation (estimated at an average of 45 use cases, or 30%, annually). The net result is an estimated average addition of 105 use cases annually (150 – 45 = 105). While use cases vary in duration, these types of solutions have relatively short delivery timelines (months not years), and therefore DPT has not identified specific projects to work on over two years ahead of time, but rather, as stated in PubAdv-SCE-150-LMW Q6b, "SCE will re-prioritize use cases based on the highest priority/customer value" from this backlog list of potential use cases closer to the start of the work. As a recent example, the current emergence of Generative AI across all industries has opened opportunities at SCE to leverage this technology for business benefit and has resulted in DPT pivoting efforts to evaluate and deliver solutions that leverage this capability.

This type of dynamic development environment is what DPT is well suited to handle, and the re-prioritization and selection of use cases based on this type of rapid change, allows DPT to select and deliver the best use cases at the time to provide maximum benefit, while doing this in a structured manner. The proven track record is illustrated by delivery of capital assets that provide business value by the Digital and Process Transformation team as shown in the specific examples of digital technology and process transformation activity solutions in the 2025 GRC; see SCE-06 Vol. 01, Table IV-3, pages 29-31 and 2021 GRC, SCE-06, Vol. 2, Table V-23, pages 98-99.

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 3 5 - L M W

To: Public Advocates Office
Prepared by: Kimberly Ann Grant
Job Title: Bus Ops Analyst, Advisor
Received Date: 10/19/2023

Response Date: 11/2/2023

Question 06:
In relation to the terms noted in 5. above and other responses, please fully explain the process (in phases) from the beginning of an idea to an application or tool that is implemented that provides a benefit or cost savings or both.

In SCE's responses it uses the terms "prototype," "potential use case," "use case ideas," "use case solution," "new use cases," and "benefit to pursue," but it is unclear to Cal Advocates how these terms apply to the overall process. For example, what phase of the process is a prototype utilized.

SCE provided an explanation in PubAdv-SCE-150-LMW Q.6d., relative to a potential use case, but that appears as only a part of the overall process. Or in PubAdv-SCE-068-LMW Q.6b., SCE states, "Our current estimation, depending on the size of the prototype, is that each prototype will require 3-5 staff to execute potential use cases." But it is unclear where and how a prototype fits into the whole process.

Response to Question 06:
The IT demand intake process provides a framework for capturing new use case opportunities and dispositioning the work to the appropriate group for execution. Opportunities come from Operational Unit (OU) needs as well as technology trends that we believe could provide value. Those that fall into one of the four DPT categories of Digital and Mobile Applications, Advanced Analytics, Robotic Process Automation and Emerging Technology go through a scoring and classification exercise (including high level costs and benefits) and are then aligned to a Clay Map model, based on their feasibility and value (to the customer or OU and SCE) for prioritization. These are then reviewed and approved by DPT leadership to proceed with a Proof of Technology (POT), Proof of Concept (POC) or Minimum Viable Product (MVP) solution as appropriate.

The beginning of the MVP process includes the completion of a detailed business case (cost and benefits) and the rest of the process utilizes key methodologies including design thinking, process optimization and agile development to ensure an effective solution. Following the completion of the MVP, the solution is capitalized as appropriate and a well-defined acceptance criteria is employed to transition the solution to operations. Please see attached "PubAdv-SCE-235-LMW Q6 (Use Case Process).pptx" for a diagram of the end-to-end use case process.

As stated in PubAdv-SCE-150-LMW, Response to Question 6d, a potential use case is an idea that SCE evaluates to determine if a solution can provide positive business value in one or more of the

company goals of providing safe, reliable, and affordable electricity to our customers. These use cases are evaluated and prioritized based on business benefit. A successful potential use case is an implemented solution that delivers improved operational efficiency, controls costs, enhances customer satisfaction, reduces risk and/or promotes environmental sustainability. These use cases vary in length of time, personnel requirements, process documentation, process improvements, design thinking, technical solutioning, and implementation into production.

"Potential use case", "use case ideas" and "new use cases" all describe ideas for potential solutions to provide business value. The term "use case solution" refers to a use case that has been developed into a solution and implemented in production. A potential "benefit to pursue" is determined as part of the use case scoring and prioritization and will be updated as a use case goes through the process.

A "prototype" can be defined in three categories: Proof of Concept, Proof of Technology, or Minimum Viable Product (MVP), which are all described within the attachment. The MVP is the phase where a use case has been implemented and utilized in production. Please refer to the attachment for the definitions of these terms. These are developed in the beginning of the use case process to ensure there is viability to the solutions.

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 0 6 8 - L M W

To: Public Advocates Office
Prepared by: Kimberly Ann Grant
Job Title: Bus Ops Analyst, Advisor
Received Date: 7/26/2023

Response Date: 11/15/2023

Question 02 Revised:
Referring to Testimony pp. 29-31 (Table IV-3), SCE lists a number of Benefits associated with its Digital Technology and Process Transformation Activities. Based on this, for each of the 7 categories (Outage Communication Customer Crew Connect Application, T&D Overhead Distribution Asset Inspections App, Vegetation Management Arbora, T&D Digital Workorder Package - WorkIt, T&D Small Tools, Robotic Process Automations, and Advance Analytics) is SCE overall anticipating that the incremental labor increase of $7.110 million (per Workpaper p. 25) will be offset by cost savings associated with its planned/forecasted Digital Technology and Process Transformation Activities. If yes, what is the total amount of annual cost savings from 2024 thru the next rate case cycle? If no, why will not cost savings be realized?

Response to Question 02 Revised:
The solutions listed in Table IV-3 are examples of the types of initiatives within the categories of Digital and Mobile Applications, Robotic Process Automations, Advanced Analytics, and Emerging Technologies that Digital & Process Transformation (DPT) completed in the past and that we will continue to develop going forward. SCE is anticipating that the incremental labor cost will be offset by cost savings associated with its planned/forecasted Digital and Process Transformation activities. SCE does not yet know the specific amount of savings of future solutions, as that depends on the initiatives that will be identified, developed, and implemented. However, for the solutions already implemented, the benefits associated with the solutions lag the costs as the adoption for the solutions increase over time. Based on that, the DPT cumulative benefit to cost ratio of what we already implemented is forecasted at 126% from 2019-2026 and we expect this level of cost savings associated with the DPT solutions to continue through the GRC period.

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 3 5 - L M W

To: Public Advocates Office
Prepared by: Kimberly Ann Grant
Job Title: Bus Ops Analyst, Advisor
Received Date: 10/19/2023

Response Date: 4/5/2024

Question 04.g Revised:
Referring to SCE's response to PubAdv-SCE-150-LMW Q.4., SCE provided a table supporting a benefit to cost ratio of 129%.

g. How would the 129% (per SCE's table) change if only "hard benefits" were used?

Response to Question 04.g Revised:

Q4g. Both soft and hard benefits are important to show the full value of the benefits to the business.

When only the hard benefits are considered, the hard benefit benefit-to-cost ratio is 0.57, as shown in PubAdv-SCE-235-LMW Q.4g Revised.xlsx.

Please note, the 129% was revised to 126% in SCE's response to PubAdv-SCE-150-LMW Q.4.-Revised.

D&PT Categories	2019 (A)	2020 (A)	2021 (A)	2022 (A)	2023	2024	2025	2026
Automations - Soft benefits	NA	$291	$1,605	$2,081	$2,400	$2,400	$2,400	$2,400
Emerging Opportunities								
Hard Benefits - Small Tools			$3,377	$1,500	$1,500	$1,500	$1,500	$1,500
Soft Benefits - All others		$254	$303	$7	$116	$116	$116	$116
Sub Total	NA	$254	$3,680	$1,507	$1,616	$1,616	$1,616	$1,616
Field Enablement								
Hard Benefits - Work It				$770	$3,326	$8,872	$9,710	$10,213
Soft Benefits - All others		$346	$648	$753	$753	$753	$753	$753
Sub Total	NA	$346	$648	$1,523	$4,080	$9,625	$10,463	$10,966
Inspection of the Future								
Hard Benefits - Arbora					$4,199	$18,100	$18,100	$18,100
Soft Benefits - All others		$17,392	$14,415	$12,550	$13,964	$14,096	$15,075	$15,121
Sub Total	NA	$17,392	$14,415	$12,550	$18,163	$32,197	$33,176	$33,221
Benefits	**$2,000**	**$18,283**	**$20,346**	**$17,662**	**$26,258**	**$45,837**	**$47,654**	**$48,203**
Cumulative Benefits	**$2,000**	**$20,283**	**$40,629**	**$58,291**	**$84,549**	**$130,386**	**$178,041**	**$226,244**
Spend	**$11,200**	**$35,613**	**$39,313**	**$36,473**	**$14,470**	**$15,786**	**$18,934**	**$20,307**
less spend for non-tracked benefits	**$0**	**($4,648)**	**($4,705)**	**($3,379)**				
Cumulative Spend	**$11,200**	**$42,165**	**$76,773**	**$109,867**	**$124,337**	**$140,123**	**$159,057**	**$179,364**
Cumulative BCR	**0.18**	**0.48**	**0.53**	**0.53**	**0.68**	**0.93**	**1.12**	**1.26**

Summary of Hard Benefits	2019 (A)	2020 (A)	2021 (A)	2022 (A)	2023	2024	2025	2026	Total 2019 - 2026
Small Tools			$3,377	$1,500	$1,500	$1,500	$1,500	$1,500	$10,877
Work It				$770	$3,326	$8,872	$9,710	$10,213	$32,891
Arbora					$4,199	$18,100	$18,100	$18,100	$58,500
Total Annual Hard Benefit	**$0**	**$0**	**$3,377**	**$2,270**	**$9,025**	**$28,472**	**$29,310**	**$29,814**	**$102,268**
Spend	$11,200	$35,613	$39,313	$36,473	$14,470	$15,786	$18,934	$20,307	$192,096
less spend for non-tracked benefits	$0	($4,648)	($4,705)	($3,379)					($12,732)
Total Annual Spend	**$11,200**	**$30,965**	**$34,608**	**$33,094**	**$14,470**	**$15,786**	**$18,934**	**$20,307**	**$179,364**
							Cumulative BCR Percentage		**57%**

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 3 5 - L M W

To: Public Advocates Office
Prepared by: Kimberly Ann Grant
Job Title: Bus Ops Analyst, Advisor
Received Date: 10/19/2023

Response Date: 11/3/2023

Question 07.a-d:
Referring to SCE's previous 2021 GRC, provide the following:

a. What was SCE's TY2021 $ labor forecast and what was authorized?
b. Of this amount authorized for 2021 and 2022 how much was actually spent?
c. In the event there was an underrun in spending, please explain with all the benefits presented and the need for activity identified in current testimony, why SCE underspent its authorized amount.
d. If it was due to Covid 19, please provide documentation that explains how Covid impacted a group that evaluates cases for potential use and possible implementation

Response to Question 07.a-d:
SCE interprets this question as GRC O&M labor requested, authorized, and recorded.[1]

For TY 2021, SCE forecasted and was authorized $5.6 million. SCE spent $2.9 million, for an underrun of $2.7 million.[2] This underrun is due to the following reasons:

- Inability to fill open positions, partly because of Covid, with an estimated impact of $2.2 million
- Resources not available to work on DPT projects due to temporarily working on wildfire-related projects, with an estimated impact of $0.5 million

For 2022, SCE forecasted and was authorized $5.6 million. SCE spent $ 2.9 million, for an underrun of $2.7 million. This underrun is attributed to several reasons:

- Inability to fill open positions, partly because of Covid, with an estimated impact of $1.9 million
- Resources not available to work on DPT projects due to temporarily working on wildfire-related projects, with an estimated impact of $0.4 million
- Resources working on the WorkIT Capital project, with an estimated impact of $0.2 million

[1] Note that the dollar amounts have been converted to 2022 constant dollars.
[2] *See* SCE-6, Vol. 1, p. 33 for the discussion of the 2021 GRC authorized O&M versus recorded.

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Page A33

- PO amount or aligned with PO amount
- PO amount or aligned with PO amount with increases for capacity growth
- Other - forecast method based on cloud O&M project consumption, contracted distribution of payments, or savings from decommissioned licenses

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Pages A35-A57

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Southern California Edison Company's 2025 General Rate Case

DECLARATION OF

Rick Nanda

REGARDING THE CONFIDENTIALITY OF CERTAIN DATA

I, Rick Nanda, declare and state:

1. I am Principal Manager, Application Services – Enterprise at Southern California Edison (SCE). Albert Ma, Vice President, Technology, Data, and Strategic Services delegated authority to me to sign this declaration. I have responsibility for overseeing and reviewing SCE's 2025 General Rate Case Application to the California Public Utilities Commission, Exhibit SCE 06, Volume 01, Enterprise Technology.

2. I am making this declaration in accordance with the instructions set forth in General Order 66D.

3. I have personal knowledge of the facts and representations herein and, if called upon to testify, could and would do so, except for those facts expressly stated to be based upon information and belief, and as to those matters, I believe them to be true.

4. Listed below are the data for which SCE is seeking confidential protection and the basis for SCE's confidentiality request.

Location of Confidential Data	**Pages** (if available)	**Description of Information that is Confidential**	**Basis for SCE's Confidentiality Claim**
PubAdv-SCE-188-LMW, Question 16 Response Attachments: 1. PO_4501580966_Itron.pdf 2. PO_8500118587_Okta.pdf 3. PO_8500118587_Okta_quote 4. PO_8500096488_ESRI.pdf 5. PO_8500096488_ESRI_Quote.pdf 6. PO_4501190308_ESRI.pdf 7. PO_4501465559_Ariba.pdf 8. PO_4501465559_Ariba_Order Form.pdf	All pages	Vendor Pricing	Third-Party (Vendor) information, including vendor proprietary information such as Vendor Bid, Pricing Information and Vendor Proprietary Information subject to non-disclosure or confidentiality agreement, contract between the utility and third-party vendors that contain confidentiality clauses. Protected from

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Location of Confidential Data	Pages (if available)	Description of Information that is Confidential	Basis for SCE's Confidentiality Claim
9. PO_4501422525_Autodesk.pdf 10. PO_4501169430_Ignio.pdf 11. PO_4501169430_Ignio v2.pdf 12. "PO_8500142632_Infosys_Snowflake.pdf 13. PO_8500109785_Infosys_Snowflake.pdf 14. PO_4501170249_Active Navigation.pdf 15. PO_4501283054_GE ENERGY MANAGEMENT SERVICES LLC.pdf 16. PO_8500154704_Adobe.pdf 17. PO_8500119964_Oracle.pdf 18. PO_4500841637_GE ENERGY MANAGEMENT SERVICES LL.pdf 19. PO_4501539325_OpenLinkFinancial_Endur.pdf 20. PO_4501164296_Genetec_X.pdf 21. PO_4501164296_Genetec_Quote.pdf 22. PO_4501551921_Clicksoftware.pdf 23. PO_8500142596_SAP_SuccessFactors.pdf 24. PO_8500145288_Sailpoint.pdf 25. PO_8500145288_Sailpoint_Quote.pdf 26. PO_8500145288_Sailpoint_Quote_2.pdf 27. PO_8500145288_Sailpoint_Quote_3.pdf 28. PO_4501304462_Salesforce.pdf 29. PO_8500107790_Microsoft.pdf 30. PO_4501321772_BMC.pdf 31. PO_8500142079_SAP_Maxattention.pdf			disclosure under Gov't Code §§ 7927.300, 7925.000, 7927.705, 7924.510(f), 7927.605, 7922.000, 7922.540; 7930.205, Evid. Code § 1060; Civil Code § 3426 et seq.; 18 C.F.R. Part 358 (FERC Standards of Conduct, FERC Order 717); Cal. Code Regs. 17 § 95914(c)(1); SEC Rules 10b-5, 10b-5-1, 10b5-2.

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Location of Confidential Data	Pages (if available)	Description of Information that is Confidential	Basis for SCE's Confidentiality Claim
32. PO_4501325794_Nuance.pdf 33. PO_4501580816_Itron Inc.pdf 34. PO_8500100601_MIcrosoft.pdf 35. PO_8500125086_Microsoft Unified Support.pdf 36. PO_8500111520_OKTA.pdf 37. PO_4501563742_IBM.pdf 38. PO_8500136996_HP.pdf 39. PO_4501415547_PowerClerk.pdf 40. PO_4501415547_PowerClerk_ChangeOrder.pdf 41. PO_4501425477_IBM_Redhat.pdf 42. PO_8500116842 _SAP_Fieldglass .pdf 43. PO_8500116842 _SAP_Fieldglass _OF.pdf 44. PO_4501068987_SAP Hybris.pdf 45. SAP_Appendix1.pdf 46. SAP_Appendix1_Amendment_2.pdf 47. SAP_Appendix1_Amendment_3.pdf 48. SAP_Appendix1_Amendment_4.pdf 49. SAP_Appendix11.pdf 50. SAP_Appendix28.pdf 51. SAP_Appendix 33.pdf 52. SAP_Appendix34.pdf 53. SAP_Appendix36.pdf 54. SAP_Appendix39.pdf 55. SAP_Appendix41.pdf 56. SAP_Appendix45.pdf 57. SAP_PSLE_Projection_Letter.PDF 58. PO_8500116843_SAP_Successfactors_OrderForm.pdf 59. PO_4501474432_IBM.pdf 60. PO_4501168391_Osisoft.pdf			

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Location of Confidential Data	Pages (if available)	Description of Information that is Confidential	Basis for SCE's Confidentiality Claim
61. PO_4500976312_VMware_1.pdf 62. PO_8500026940_VMware_2.pdf 63. PO_8500021925_VMware_3.pdf 64. CONFIDENTIAL_Q16_PubAdv_SCE-188-LMW.xlsx			

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on 10/12/2023 at West Covina, California.

DocuSigned by:

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Rick Nanda

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Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 0 8 3 - L M W

To: Public Advocates Office
Prepared by: Erica Marquez
Job Title: IT Asset Manager
Received Date: 8/7/2023

Response Date: 8/21/2023

Question 04.a-f:
Referring to Testimony p. 54 (lines 7-11) SCE states, "A significant portion of the above agreements is key to the support of the migration to cloud. Movement to the cloud mitigates the impact of hardware and software obsolescence as most vendor offerings are already, or will be in the near future, limited to cloud-based solutions, while providing better reliability, scalability, agility, and significantly more software options to choose from." Based on this and the recorded/forecasted expenses in the tables below per GRC (A.18-12-009) p.31 Table IV-4, SCE's current application (p. 47 Table V-7), and SCE's current workpapers please answer/provide the following:

a. Is this an accurate presentation of recorded and forecasted costs? If no, please provide any corrections.

b. Include forecasted expenses from 2026 to 2028 pertaining to Cloud (Subscription Based Software).

c. Did SCE start its cloud migration in 2015? If no, when did SCE start its cloud migration?

d. Are there any cost savings in moving to the cloud by mitigating the impact of hardware and software obsolescence? If yes, how much and where are these savings recorded. If not, then why not?

e. Why do expenses continue to increase from year to year. In answering this question, please quantify the reason for the increase. For example, vendor pricing increased by xx% from 20xx to 20xx. Or, due to changes in capitalization policy cloud OandM costs increased by x from 20xx to 20xx. Or migration to the cloud increased by x% from previous non-cloud costs.

f. Does SCE anticipate a continued increase in expenses from year to year or will the increase in expense plateau or slow once fully migrated to the cloud?

Response to Question 04.a-f:

For 4a) No, this is not an accurate representation of recorded costs as 2015-2017 is depicted in 2018 constant, whereas the rest of the numbers (2018-2025) are depicted in 2022 constant. Please see table below (following 4b) for the table with 2015-2017 dollars converted to 2022 constant.

For 4b) Please see table below for the forecasted expenses from 2026 to 2028 pertaining to Cloud (Subscription Based Software).

(In 2022 Constant $000's)	2015	2016	2017	2018	2019	2020	2021	2022
Historic Cloud O&M	10,444	12,817	21,441	18,822	25,002	28,108	36,491	39,861
(In 2022 Constant $000's)	2023	2024	2025	2026	2027	2028		
Non Normalized Amount	43,307	50,327	55,636	56,911	56,822	58,670		
Normalized (2025-2028) Amount						57,010		

For 4c) SCE's enterprise-wide use of cloud-based applications began in 2015 when we adopted Microsoft O365.

For 4d) Cost savings in moving to the cloud by mitigating the impact of hardware and software obsolescence is on a case-by-case basis. Any savings realized are reflected in SCE forecasts for the 2025 GRC.

For 4e) From 2023 to 2028, software maintenance renewals increase by an average of approximately $3.0M per year for on-going subscription/cloud costs transitioned from projects that previously were capitalized. Please refer to the answer to Question 8a for those specific amounts. Additionally, from 2023 to 2028, software maintenance renewals increased by 3% year over year from vendor pricing increases and capacity growth from new users.

For 4f) Once fully migrated to the cloud, SCE still expects increases from year to year at a minimum to address factors such as vendor pricing and changes in consumption.

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 1 8 8 - L M W

To: Public Advocates Office
Prepared by: Erica Marquez
Job Title: IT Asset Management, Manager
Received Date: 9/25/2023

Response Date: 10/9/2023

Question 07.a-b:
Referring to SCEs Response to PubAdv-SCE-LMW-083 Q.4e., SCE states. From 2023 to 2028, software maintenance renewals increase by an average of approximately $3.0M per year for on-going subscription/cloud costs transitioned from projects that previously were capitalized. Please refer to the answer to Question 8a for those specific amounts. Additionally, from 2023 to 2028, software maintenance renewals increased by 3% year over year from vendor pricing increases and capacity growth from new users. Based on this, please provide the support for the following:

a. How the $3 million was quantitative determined/derived.
b. How the 3% was quantitative determined/derived

Response to Question 07.a-b:

Q7a: The year over year average of approximately $3.0M per year for on-going subscription/cloud costs transitioned from projects that previously capitalized was determined by looking at the amounts of newly transitioned costs year over year, summed, and divided by 5 years. Please see attachment " PubAdv-SCE-188-LMW_7a.xlsx" for the calculation on how the approximately $3 million amount was quantitatively determined.

Q7b: The year over year increase of 3% from vendor pricing increases and capacity growth for new users is driven by individual forecasts (the individual forecasts were provided in response to PubAdv-SCE-188-LMW, Q.11a). The average annual 3% calculation was determined by taking the Cloud GRC forecast from 2025-2028 (table column A), reducing the costs that transitioned from projects that were previously capitalized to O&M (table column B) and averaging the percentage change of the variances (table column D). Please see attachment "PubAdv-SCE-188-LMW_7b.xlsx" for the calculation on how the 3% was quantitatively determined.

Comments	2023	2024	2025	2026	2027	2028
22 to 23 Capital to O&M	7,537,694.55	9,305,540	8,285,214	8,122,757	7,963,489	7,807,342
23 to 24 Capital to O&M	-	8,964,564	8,936,275	8,534,668	8,369,459	8,309,586
24 to 25 Capital to O&M	-	-	3,779,552	3,707,270	3,647,420	3,592,639
25 to 26 Capital to O&M	-	-	-	1,014,271	994,384	974,886
27 to 28 Capital to O&M			-	-	-	1,738,717
Grand Total	7,537,695	18,270,104	21,001,040	21,378,968	20,974,751	22,423,170

Description	New Cap to O&M Costs per year
23 to 24 Capital to O&M	$ 8,964,564
24 to 25 Capital to O&M	3,779,552
25 to 26 Capital to O&M	1,014,271
26 to 27 Capital to O&M	-
27 to 28 Capital to O&M	1,738,717
New Capital to O&M Total 2023-2028	$ 15,497,104
Average of 5 years (New Capital to O&M Total 2023-2028)/5	$ 3,099,421

Comments	2022	2023	2024	2025	2026	2027	2028
21 to 22 Cap to O&M							
22 to 23 Cap to O&M		7,537,695	9,305,540	8,285,214	8,122,757	7,963,489	7,807,342
23 to 24 Cap to O&M		-	8,964,564	8,936,275	8,534,668	8,369,459	8,309,586
24 to 25 Cap to O&M		-	-	3,779,552	3,707,270	3,647,420	3,592,639
25 to 26 Cap to O&M		-	-	-	1,014,271	994,384	974,886
27 to 28 Cap to O&M				-	-	-	1,738,717
Grand Total	-	7,537,695	18,270,104	21,001,040	21,378,968	20,974,751	22,423,170

In Millions $ Constant				
Year	**Cloud GRC Forecast (A)**	**Cloud costs transition from Cap to O&M Costs (B)**	**Cloud GRC Forecast with Cap to O&M Cost Removed (A-B) (C)**	**% Change for Non Cap to O&M Costs (D)**
2023	$ 43,307,480	7,537,695	35,769,785	
2024	$ 50,327,496	18,270,104	32,057,392	-11.6%
2025	$ 55,635,655	21,001,040	34,634,615	7.4%
2026	$ 56,911,170	21,378,968	35,532,202	2.5%
2027	$ 56,821,802	20,974,751	35,847,051	0.9%
2028	$ 58,670,098	22,423,170	36,246,928	1.1%
				3.0%

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 4 3 - L M W

To: Public Advocates Office
Prepared by: Erica Marquez
Job Title: IT Asset Management, Manager
Received Date: 10/24/2023

Response Date: 11/7/2023

Question 06:
Referring to SCE's Response to PubAdv-SCE-LMW- LMW-083 Q. 11b., SCE provided an explanation for the incremental increase from 2022 to 2025 specifically related to perpetual licenses, identifying the reasons for the increase. These increases were Capital to O&M, impact of SAP changes, and year over vendor price increases.

Relative to SCE's Cloud Subscription incremental increase from 2022 to 2025 of $17.2 million ($39.8 million to $57.0 million), Cal Advocates assumes the reasoning for the increase is as follows:

(1) $7.6 million due to the movement to the cloud (Cap to O&M), and
(2) Approximately $10 million due to vendor price increases.

If this is inaccurate, please provide an explanation similar to that which explains the incremental increase in perpetual licenses (e.g., identifies the correct Capital to O&M impact, costs of any subscriptions for new users, and the impact of prices increases).

Response to Question 06:

No, this is inaccurate. Please see the table below for the breakout of the variances between 2022 recorded to 2025 TY normalized. The year-over-year vendor pricing increases (Category 3) in this case also includes savings from Optimized SaaS Cloud products.[1]

[1] *See* SCE 6 Volume 1 p. 61, footnote 75.

Categories	Sum of 2022 Recorded (A)	Sum of 2025 TY Normalized (B)	Sum of 2025 TY Normalized (-) 2022 Recorded (B-A)
(1)growing business needs to digitize our environment and support SCE initiatives impactful to customer satisfaction, affordability, reliability, safety, and quality	$ 12,456,996.22	$ 22,703,734.83	$ 10,246,738.61
(2)movement to the cloud as most new functionalities are primarily not available on premises and related limitations on accounting rules	$ 11,774,616.24	$ 18,828,113.89	$ 7,053,497.65
(3) Year-over-year vendor pricing increases and growth in licenses from new users.	$ 15,629,387.54	$ 15,477,832.62	$ (151,554.92)
Grand Total	**$ 39,861,000.00**	**$ 57,009,681.33**	**$ 17,148,681.33**

SCE notes that the "movement to the cloud" is not synonymous with "movement from capital to O&M" in all situations. While some of the $7.6 million may have started as capital in the past, the incremental increase from 2022 to 2025 is not all due to transitioning of costs from capital to O&M. The $7.6 million for movement to the cloud represents those items with business capabilities/functionalities not available on-premise, and therefore must be procured as a cloud subscription.

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 0 8 3 - L M W

To: Public Advocates Office
Prepared by: Erica Marquez
Job Title: IT Asset Manager
Received Date: 8/7/2023

Response Date: 8/21/2023

Question 11.a-b:
Referring to Testimony p. 61 and 62 (lines 14-25 and lines 1-2)), SCE states, "Additionally, investments in future SCE IT applications will primarily be Software as a Service (SaaS) or Cloud (Subscription Based Software) based. Consumption-based services is the growing market trend, as more and more new capabilities are available primarily through cloud services, and not on-premises as they used to be. This shift in technologies is moving the spend from Capital to OandM due to current capitalization guidelines, which in turn contributes to the increasing OandM forecast. With on-premise application investments, SCE would normally capitalize the initial license purchase with five years of maintenance and once the asset was depreciated, SCE would normally restructure the application and recapitalize. With on-premise applications, the license acquisition is a one-time perpetual license purchase, where SCE purchases the license as a capital investment and continues paying the yearly OandM maintenance cost year-over-year as needed. The cost for the yearly OandM maintenance year over year was typically minimal. With the shift to SaaS and Cloud, there is no perpetual license purchased; instead, the subscription payment model includes software license and maintenance as one OandM cost. Thus, this results in a reduction forecasted in capitalized license purchases from 2027 and 2028 and increases in OANDM in 2023-2028." Based on this please answer/provide the following:

a. On an annual basis within the 2023-2028 forecast period incrementally by what $ amount did moving the spend from Capital to OandM increase OandM costs and decrease capital costs? And did the decrease in capital costs only apply to perpetual license capital costs?

b. With on-premise applications, SCE stated, the license acquisition is a one-time perpetual license purchase, where SCE purchases the license as a capital investment and continues paying the yearly OandM maintenance cost year-over-year as needed. As SCE's trend is towards a cloud-based model, why is there an increase from the last recorded year of $36.825 million in 2022 to $68.288 million in TY 2025 in perpetual license OandM?

Response to Question 11.a-b:

Q.11a. Please refer to the response to Q.8a of this data request set for costs for 2023-2028 that depict the impact of moving spend from capital to O&M in context to testimony p. 61 lines 14-25 through p. 62 lines 1-2.

Q.11b. The $31.4M increase from 2022 to TY 2025 for perpetual licenses costs is primarily driven by costs transitioning from one-time capital upfront purchase during the project execution to ongoing O&M and from increases in year-over-year vendor pricing. Please see below for details:

- $20M for Capital to O&M for licenses for: GE Energy Management Services, Hewlett Packard, Open Link, OsiSoft and Itron.

- $8.2M for SAP. SAP is a big driver for perpetual license growth. In 2018, we renegotiated our contracts, which reduced ongoing O&M to about $3M a year through 2023. In 2024, the total costs will transition to O&M for $11M a year. Due to the changes in SAP products, SCE is unable to currently restructure the SAP application and the costs will remain O&M.

- $3.2M for year over year vendor pricing increases.

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 0 8 3 - L M W

To: Public Advocates Office
Prepared by: Erica Marquez
Job Title: IT Asset Mgmt, Mgr
Received Date: 8/7/2023

Response Date: 4/3/2024

Question 14.a,d,e Revised:
Referring to SCE's previous GRC (A.18-12-009 p.31 Table IV-4) and SCE's current application (p. 47 Table V-7), Cal Advocates compared SCE's Cloud, Perpetual license, and Total Cloud and Perpetual License forecasts to actual for each of these applications, noting the following:

a. Are the tables above accurate allowing for a comparison of forecast to actual? If no, then why not? Please provide any corrections.

d. Provide a quantified explanation why the forecasted versus actual costs are different for cloud-based costs given forecasted costs are significantly lower than actual. For example, actual costs are higher than forecasted because SCE underestimated the extent of its movement to a cloud-based approach and implemented an initiative, solution, or new technology that created cost of $x amount greater than forecast.

e. Provide a quantified explanation why the forecasted versus actual are different for perpetual licenses given forecasted costs are $10 million to $14 million lower than actual. For example, actual costs are lower than forecasted because SCE overestimated the cost of an initiative, solution, or new technology by $x amount greater than forecast. Or, despite SCE's forecast a forecasted initiative, solution, or new technology was not undertaken resulting in a $ difference

		Cloud		
(in Constant $000's)	2019	2020	2021	2022
Previous Forecast	13,584	15,316	18,130	18,720
Actual	25,002	28,108	36,491	39,861
Total Difference	11,418	12,792	18,361	21,141

		Perpetual		
(in Constant $000's)	2019	2020	2021	2022
Previous Forecast	51,310	50,263	50,396	48,960
Actual	40,898	38,643	36,253	36,825
Total Difference	10,412	11,620	14,143	12,135

Response to Question 14.a,d,e Revised:

14a) The tables above are not accurate as the row labeled "Previous forecast" from 2021 GRC is in 2018 constant dollars. Additionally, the 2021 and 2022 previous forecast from the GRC for Perpetual License was $53,922 and $58,843, respectively (refer to A.19-08-013, SCE-06, Vol. 01, Part 1A, Amended Testimony, Table IV-3, p 29). Please see below for the accurate representation of the previous forecast to actual, both in 2022 constant.

	2022 Constant			
Category	**2019**	**2020**	**2021**	**2022**
CLOUD				
Forecast 2021 GRC	14,939	16,844	19,939	20,588
Recorded	25,002	28,108	36,491	39,861
Forecast vs. Recorded	10,063	11,264	16,552	19,273

	2022 Constant			
Category	**2019**	**2020**	**2021**	**2022**
PERPETUAL LICENSE				
Forecast 2021 GRC	56,429	55,278	59,302	64,714
Recorded	40,898	38,643	36,253	36,825
Forecast vs. Recorded	(15,531)	(16,635)	(23,049)	(27,889)

14d) Actual costs are higher than forecasted because SCE underestimated the extent of its movement to a cloud-based approach and implemented an initiative, solution, or new technology that created average cost of $14.3 million greater than forecast in 2019 -2022.

14e) As stated in 14d, SCE underestimated the extent of its movement to a cloud-based approach,

which caused higher spend in the cloud category than planned, and lower spend in the perpetual license category. Additionally, as stated in testimony p. 49, (lines 11-21) on a consistent basis, SCE tries to take cost cutting measures to reduce O&M, as described below:

- Entering into long term agreements to offset escalation and obtain discounted pricing
- Ensuring that our pricing is validated against our peer utilities and request for competitive bids to execute on the lowest price possible
- Ensuring the hygiene of our license environment by reviewing usage data and trouble tickets to continually look for opportunities to decommission or scale down on our services, and therefore, costs.
- Unplanned renegotiation resulting in shift from O&M to capital

These cost cutting measures did result in actual costs that are on average $20.8 million lower than forecasted in 2019-2022.

1.099771 Rate of esclation from 2018 Constant to 2022 Constant for Non-Labor

		2018 Constant $				2022 Constant			
Line	**Category**	**2019**	**2020**	**2021**	**2022**	**2019**	**2020**	**2021**	**2022**
1	**CLOUD**								
2	Forecast 2021 GRC	13,584	15,316	18,130	18,720	14,939	16,844	19,939	20,588
3	Recorded					25,002	28,108	36,491	39,861
4	Forecast vs. Recorded					10,063	11,264	16,552	19,273
5	**PERPETUAL LICENSE**								
6	Forecast 2021 GRC	51,310	50,263	53,922	58,843	56,429	55,278	59,302	64,714
7	Recorded					40,898	38,643	36,253	36,825
8	Forecast vs. Recorded					(15,531)	(16,635)	(23,049)	(27,889)

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 0 7 6 - L M W

To: Public Advocates Office
Prepared by: Kelsey Nachreiner
Job Title: IT Project Manager
Received Date: 7/31/2023

Response Date: 8/14/2023

Question 03.a-f:
Referring to Testimony p. 75 (lines 11-18) SCE lists its hardware maintenance vendors. From the 2022 recorded labor amount of $10.864 million, SCE forecasts an increase of $2.080 million. The forecast increase is needed to accommodate backfilling of SCE FTEs to manage the projected increase in application and interface refreshes, to manage the projected volume increase in the applications transferred from OUs to Operations, and to execute data management initiatives. Additionally, the forecast reflects additional FTEs to maintain IT's processes, metrics, and operational reports with a focus on quality, value, and speed from strategy to operational phases for technology. The remainder of the increase is attributable to an adjustment to reflect certain changes made to SCE's employee compensation program. Based on this please answer the following questions:

a. To date, have any of the backfilled positions been filled. If yes, how many. If no, then why not?
b. What is the projected increase in application and interface refreshes, why is the increase expected to occur, and how does this increase require backfilling the positions? In answering this question, please quantify the answer by addressing the extent of the increase and how many applications and/or refreshes each employee is assigned, and the work hours spent per employee justifying this increase.
c. What is the projected volume increase in the applications transferred from Ou's to Operations, and how does this increase require backfilling the positions? In answering this question, please quantify the answer by addressing the extent of the volume increase and the work hours spent per employee justifying this increase.
d. What are the data management initiatives, and how do these initiatives drive the backfilling the positions? In answering this question, please quantify the answer by specifically identifying the initiative and the work hours spent per employee justifying the increase.
e. For the additional 10 FTE's (WP p. 68) forecasted to maintain IT's processes, metrics, and operational reports with a focus on quality, value, and speed from strategy to operational phases for technology, please describe the IT process, metrics, and reports and why SCE's current staff is not able to absorb this work?
f. For the additional 10 FTE's (WP p. 68) forecasted to maintain IT's processes, metrics, and operational reports with a focus on quality, value, and speed from strategy to operational phases for technology, please quantify the need for these additional FTE's by identifying the hours worked per new employee on the maintenance, metrics, and reports requiring an incremental increase in personnel.

Response to Question 03.a-f:

a. Yes, 5 of the backfilled positions have been filled.

b. At the outside, SCE emphasizes that these positions are not net new positions, but rather backfills of *existing* positions in our environment.

As referenced in our Enterprise Technology, Fixed Price Technology and Maintenance testimony (page 40, lines 1-10), two incumbent MSPs are responsible for managing the applications and interfaces in our IT SCE Enterprise ecosystem. The SCE operations teams are accountable for managing the services outcomes of the MSP teams. The SCE ADM portfolios were established to align with the business applications, core functions and processes of SCE operating units such as Transmission and Distribution, Customer Service, Power Supply, Enterprise and IT. Staffing levels are not determined by number of applications or refreshes an individual is assigned, but by the overall size of the portfolio, complexity of core functions and processes and ITIL (Information Technology Infrastructure Library) service management practices. Each application in the ADM portfolio has a different size and complexity therefore application oversight support cannot be evenly divided between employees.

These backfill positions also include data management staffing. These positions require functional domain and data management skills expertise to handle the enterprise data strategy, and all data management capabilities including data architecture, data quality management, data engineering, and data analytics.

The projected increase of application and interface refreshes is 29 projects.

A key driver of the increase of refreshes is the need for more frequent upgrades. This is due in part to cybersecurity standards. As cyber threats continue to evolve, application security becomes a paramount concern. Regularly updating applications to address security vulnerabilities, implement stronger encryption, or adopt improved authentication mechanisms can drive up the complexity and costs of application refresh. Other key drivers are software industry vendors not providing support for older versions of software and increases in new and emergent technologies into our environment. Some examples of these technologies include digital tools and platforms that enable and support the development of automation and dev-ops solutions, advanced analytics, and data management. With the increase of technologies, the number of refreshes will also increase.

c. SCE re-emphasizes that these positions are not net new positions, but rather backfills of existing positions in our environment.

In addition to the response in 3b, the introduction of new applications and projects implementing new functionality to existing applications increased by 150 in 2022. These positions are required to be backfilled to keep up with the volume of work that has been transitioned to operations, because as the number of new applications and new functionality

for existing applications increase, so does the need for continued oversight and maintenance of these applications.

d. SCE re-emphasizes that these positions are not net new positions, but rather backfills of existing positions in our environment.

   As our data grows, there are many demands and initiatives for advanced analytics related to predictive, end-to-end outcome-based requirements, prescriptive solutions as well as complex cross-area data analytics, new platforms like Snowflake, SAP Analytics Cloud, Data Intelligence, Data Warehouse Cloud (DWC) and their governance and security has been introduced including platform governance initiatives, citizen development and overall architecture and analytics, and greater need and dependence on various ways to use data for optimal operations across the board. With the greater demand, growth and emphasis on data and analytics, there is higher need for expertise, time and resources in this area. As of the filing of the GRC Application, 5 initiatives are planned and forecasted at $1million, which includes O&M efforts only.

e. The additional 10 FTE's forecasted are for Senior Quality Advisors (SQA). The SQAs are funded by 90% capital and 10% O&M. As of January 2023, we have completed the hiring process for 6 out of 10 positions. The primary focus of an SQA is supporting physical design and engineering of Capital Program / Projects and readiness for operation. These are senior engineers with subject matter expertise and business domain understanding that is not found in our current operational staff. Senior Quality Advisors play the role of techno-functional lead on the project and programs to ensure that they are designed and implemented with an operations focus to ensure reliability and availability of solutions.

f. These resources were designed to charge capital efforts as outlined in 3e, so these resources are only forecasted to charge O&M 10%. The O&M charges will be spent in training, staff meeting, self-development activities, consultation for other IT departments, governance activities and continuous process improvement.

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 0 7 6 - L M W

To: Public Advocates Office
Prepared by: Kelsey Nachreiner
Job Title: IT Project Manager
Received Date: 7/31/2023

Response Date: 8/14/2023

Question 06.a-e:
Referring to Testimony p. 76 (lines 5-17), SCE states, "The drivers of the increases for test year 2025 and forward include growth of our portfolios as technologies impactful to customer satisfaction, affordability, reliability, safety, and quality that were previously implemented become operational, which introduces increases in our consulting professional services, ongoing O&M, or O&M projects categories. Examples of such applications include ISU, Community Choice Aggregation (CCA), Salesforce, and digital technologies. To support ISU, additional SAP and non-SAP professional services are required to maintain the application and ensure billing, invoicing, customer interaction management, and enrollment of customer products and programs. Additionally, as more cities adopt CCA, SCE needs to adapt to ensure we can keep up with the enrollment demand, which increases the need for dedicated support services for CCA onboarding, testing, and ongoing support activities that are not part of our current managed services. Increased support costs for the Salesforce platform is also needed for continued support of Wildfire mitigation through improved inspections of Transmission & Distribution (T&D) assets." The Last Recorded Year 2022 Non-Labor expenditures are $14.227 million (Testimony p. 71) as compared to SCE's Test Year 2025 forecast of $23.214 million (Testimony p. 71), a difference of $8.987 million. Based on this, please specifically identify the extent of the incremental increase ($8.987 million) that applies to:

a. ISU broken out by SAP and Non-SAP Professional Services,
b. CCA and how many additional cities SCE is forecasting that will adopt CCA,
c. Increased costs of the Salesforce Platform,
d. For each of the applications and platforms noted in a., b., and c. above, how these additional costs will benefit ratepayers as opposed to maintaining historic expenditures?
e. For each of the applications and platforms noted in a., b., and c. above, in the event the funding is not approved what will the impact be on ratepayers?

Response to Question 06.a-e:
Overall, the increase of $8.987 million from the Last Recorded Year 2022 Non-Labor expenditures of $14.227 million (Testimony p. 71) as compared to SCE's Test Year 2025 forecast of $23.214 million (Testimony p. 71), are driven by several factors. Although ISU support services, CCA, and Salesforce are intended to be examples of the drivers of the increases, others such as data governance, digital platforms and tools, and ongoing O&M also contribute to the increases. Specifically, for the examples we noted in testimony, please see the responses below, which provide the respective costs within the $8.987 million:

A) ISU can be broken out into 2 categories: ISU Enhancements and ISU Data Archiving. See

below for the respective costs.

- ISU Enhancements ($950,000): In order to meet the needs of our business units and to better service our customers, there will be ongoing need to enhance the ISU solution. These enhancements will include changes to the core ISU system as well as non-SAP systems that interface with ISU. Because this is a pre-paid capacity-based model, where SCE pays up front and dollars can be utilized either for SAP or non-SAP systems that interface with ISU depending on the prioritized needs of our customers, it is not possible to breakout the costs by SAP and Non-SAP Professional Services. These services are further described in SCE's response to D below.

- ISU Data Archiving ($500,000): ISU data growth requires that we implement an ongoing archiving solution. Without data archiving our systems will run out of space. This would be a catastrophic event for SCE as our system would become unreliable and availability would be dramatically impacted. We will need to continue to archive throughout the year, each year, in order to avoid system failure. These costs are all SAP.

B) CCA-related ($1.1 million): For each CCA, the support services include providing extracts of usage data to prospective CCA entities upon request, onboarding enrollment, integration development, testing and remediation of errors for billing and usage data, and CCA de-enrollment services. The benefits are further outlined in part D below.

At the time this forecast was submitted, there are 12 additional cities whose intent to adopt CCA is yet to be determined. Three of these cities requested data for a feasibility study. The 12 cities represent a population of about 500,000 accounts.

C) Salesforce can be broken out into 2 categories: Salesforce Platform support and Salesforce vendor support.

Salesforce Platform support ($1.5 million): As depicted in WP SCE 06, Vol. 1 pp. 78, this is for support of the Salesforce platform which hosts critical applications to our business, which includes platform maintenance (e.g. patches, break fixes) and enhancements.

Salesforce vendor support ($300,000): As depicted in WP SCE 6, Vol. 1 pp. 102, this is for support from the vendor for consulting on the Salesforce platform which hosts critical applications to our business, which includes professional services specific from Salesforce to address any operational issues (e.g. patches & break fixes) that are proprietary and unable to be addressed by our managed services providers.

D) All of the systems or processes depicted in a, b, and c are new additions. Please see below for the benefits to the ratepayers:

- The ISU enhancement services are necessary to continue our focus on reducing our billing backlog and to meet usage data sharing demands which allows SCE to fulfill existing and new mandates. This translates into providing timely billing to our customers, which includes processing of CCA billing, enrollment and de-enrollments. Additionally, the investment in the increased resource capacity makes it

possible for IT to deliver system enhancements requested by our business partners that better enables them to service our customers. Examples may include improved billing exception processing, productivity automations, customer self-service, increased agility to respond to regulatory requests, and decreased delayed billing which impacts our ability to meet existing and new mandates (e.g. Net Energy Metering, Rule 17).

- Data Archiving is necessary as SCE's Customer Contact Center, along with our company's website and our entire meter-to-cash process, rely heavily on ISU to process core customer service functionality, such as usage and billing activities (e.g. customer invoicing, CCA data exchange, usage sharing programs, etc.) Data archiving frees up storage space in these systems in order to avoid a catastrophic failure.

- For CCA, this forecast activity is necessary to complete the enrollment, de-enrollment, interface build, testing support and data processing for CCAs. This helps with the pre- enrollment, enrollment, and post-enrollment activities for the additional cities that are being converted to CCA or de-enrolled from CCA. This helps customers be converted into CCA in the timeline stipulated by the CPUC. There would be an impact to the CCA entity in the form of delayed revenues and potential SCE penalties if services are not provided in a timely manner.

- The Salesforce platform hosts products such as Arbora and Inspectforce products that improve the efficiency of wildfire preventions, which contributes to public safety. For example, Arbora automates the processing of vegetation management and Inspectforce uses aerial inspection as part of wildfire management. WorkIt and Digital Crewboard are also two examples of products which contribute to efficiency and quality of our work management processes.

E) Please see below for the impact to ratepayers should funding not be approved:

- For ISU Enhancements, the inability to continue to enhance the ISU and non-SAP applications will result in obsolete applications that will no longer meet our customer requirements. Not having the funding for the increased enhancement capacity can reduce our ability to meet the business needs in servicing our customers. Examples of impacts may include inability to achieve improved billing exception processing, productivity automations, customer self-service, increased agility to respond to regulatory requests, and increased delayed billing which impacts our ability to meet existing and new mandates (e.g. Net Energy Metering, Rule 17, Rule 23).

- For ISU Data Archiving services, in the event funding is not approved, SCE will run the risk of running out of space for its data. This would be a catastrophic event for SCE as our system would become unreliable and availability would be dramatically impacted. We will need to continue to archive throughout the year, each year, in order to avoid system failure.

- For CCA services, in the event funding is not approved, there would be a risk to our

ability to meet the timeline requirements to onboard (pre, enroll, post enroll) or de-enroll CCAs. This can translate to delays in customers receiving their bills in a timely manner, inability to provide our CCAs usage and billing information which will negatively impact the CCA entity and/or result potential SCE penalties.

- Without the Salesforce platform, the efficiencies and automation in vegetation management and inspections would be lost and require manual intervention. There could be an increased risk of safety for customers, as neglect in vegetation management and inspections could increase wildfire risk. There could also be risks in affordability and reliability as inspections would not have precise information available which would slow operations down, generate delays and errors with flawed inspection information relayed to crews, slowing work down. Manual intervention would also result in additional vegetation management costs.

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 0 7 6 - L M W

To: Public Advocates Office
Prepared by: Kelsey Nachreiner
Job Title: IT Project Manager
Received Date: 7/31/2023

Response Date: 8/14/2023

Question 07:
Referring to Testimony p. 76 (lines 17-18), SCE states, "Moreover, as new digital applications transition to SMOO, additional support is required to maintain the platforms, tools, and services." Based on this, please specifically identify the extent of the incremental increase noted in question 4. above ($8.987 million) that applies to these new digital applications, how these additional support costs will benefit ratepayers as opposed to maintaining historic expenditures, and in the event the funding is not approved what will the impact be on ratepayers?

Response to Question 07:
As mentioned in our Enterprise Technology testimony (page 1, lines 26-28 and page 1, lines 1) SCE introduced DPT (Digital Process and Transformation) to our IT department a few years ago to provide accelerated delivery and innovation services as a few key expected outcomes. In order to ensure our DPT group would be successful, additional investments in critical automation, dev-ops and mobile platforms, tools and operational services were needed. These new tools, platform and services provide value to customers by improving SCE's operational practices through: (1) transformation of critical business processes across the company with solutions executed through faster and more efficient methods, (2) enablement of business operations through automation, dev-ops, mobile and other digital solutions; and (3) support of data-driven decision making via advanced analytics. Further, these services support customer satisfaction, affordability, reliability, safety, and quality.

The introduction of these new platforms, tools and products requires additional operational support services and application refresh services, which were not included in SCE's 2021 GRC. For 2025 the estimate to support existing and planned digital platforms, tools, and products is approximately $2 million. Examples of these tools, platform, products and services include ALM Octane, Microsoft GitHub with Advanced Security, UiPath, Pega, Sonar Cube, Jenkins, UFT Mobile, Ignio, Nia, Covid19 mobile app, HR Onboarding, and DevSecOps patterns and pipelines development.

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 3 1 - L M W

To: Public Advocates Office
Prepared by: Kelsey Nachreiner
Job Title: IT Project Manager
Received Date: 10/19/2023

Response Date: 11/2/2023

Question 08.a-e:
Referring to Ex. SCE SCE-06 Vol.01 Workpapers pgs. 95-106, for the forecast year 2023, please provide the status of the initiative for each line item greater than $50,000. In answering this question, please include the status details and types of services performed as noted below:

a. For those initiatives where services were started and completed, provide the date the initiative started and date completed, specifically the type of consulting or professional service (the description provided in the workpaper was vague and mostly referred to "vendor support"), state clearly the reason a consultant or professional needed to be hired, vendor or vendors utilized, and whether costs were accurately forecasted.
b. For those initiatives that are in progress, provide the start date, the expected completion date, specifically the type of consulting or professional service (the description provided in the workpaper was vague and mostly referred to "vendor support), state clearly why a consultant or professional needed to be hired, and either the current or intended vendors (depending on the progress of the initiative).
c. For those initiatives not started, state when SCE plans to start and conclude the initiative, the type of consulting or professional service (the description provided in the workpaper was vague and mostly referred to "vendor support), and the reason why a consultant or professional needed to be hired, and the intended vendors.
d. Those initiatives that were forecast but will not be started or completed as planned in the forecast period but will be deferred or delayed. In answering this question, please identify the new expected start and completion dates.
e. For initiatives that will not be completed at all due to unforeseen circumstances. In answering this question, please identify the circumstance and why it was unforeseen.

Response to Question 08.a-e:

a-e: Please see the attachment "PubAdv-SCE-231-LMW App Refresh C&PS Status 2023.xlsx" with the status of our 2023 C&PS efforts.

App Refresh C&PS Status 2023											
Initiative Name	**Impacts/Justification**	**2023**	**Status (Completed, In Progress, Not Started)**	**Start Date**	**Completion Date**	**Type of consulting or Professional Service**	**Why SCE needs a consultant/professional service hired**	**Vendor**	**Were costs on target (completed work only)**	**If delayed or deferred, expected start/end dates**	**If the work will not be completed at all, identify the circumstance and why it was unforeseen**
CR&B Application Support (AO)	Proprietary functions in SAP ISU (Industry Specific Solution for Utilities) require support from SAP professional services. This support is needed when functional customization	$68,854	In progress	1/1/2023	12/31/2023	Professional Service	SAP has written custom code in ISU for SCE. We use their professional services to make modifications to this code as needed.	SAP			
OpenText Exstream Renewal	Vendor support for the OpenText Exstream product which is used for printing customer letters and bills.	$240,607	In progress	1/1/2023	12/31/2023	Maintenance Support	This is software maintenance support renewal for the OpenText Extreme product.	OpenText			

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
OpenText Document Presentment (DP) Live Support Renewal	Vendor support for the OpenText module used by SAP Cloud 4 Customer (C4C) Call Center Agent to view customer billing statements	$96,243	In progress	1/1/2023	12/31/2023	Maintenance Support	This is software maintenance support renewal for the OpenText DP Live product.	OpenText			

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
Data Quality Initiative	The data quality rules improve overall data quality for third party data sharing, and reduces the amount of manual effort needed to perform data corrections.	$336,850	In progress	1/1/2023	12/31/2023	Professional Service	This requires knowledge of SCE's customer service process and data experience to help with data rules development and data quality remediation. This function is needed to reduce the amount of manual processing required to address data driven errors.	Infosys			

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
Community Choice Aggregation (CCA) - Mass Enrollment Testing/ ESP EDI Testing	CCA mass enrollment is critical to the company and the enrollments are mandated by the CPUC. This funding will ensure we have enough resources to meet the demand set by the enrollment schedule.	$962,428	Not Started			Professional Service	The need for this service is based on the mass enrollments performed in previous years, along with the ramp up in complexity introduced by CSRP (SAP-ISU). These complex and time-consuming tasks require dedicated support to perform the tasks needed for pre-enrollment and mass enrollment activities across multiple technologies and disciplines	Infosys			As we got better clarity on the CCA roadmap for 2023, we determined that for this year the enrollments and de-enrollments could be performed utilizing existing operational team resources. However we anticipate future enrollments and de-enrollments will likely need dedicated support to perform these tasks in the required timeframe.

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
C4C Quarterly Refresh	SAP's has quarterly releases for their Cloud For Customer (C4C) product. These releases include changes and/or new features that can benefit SCE's C4C users. Implementing these features requires at a minimum testing, and may require more extensive integration into the existing application landscape	$283,916	Not Started			Professional Service	SAP applies quarterly product updates to C4C cloud, which includes new features that the Customer Contact Center can leverage to better serve SCE customers. However, integrating selective new features into an existing system landscape may require a thorough release, testing, and potential development work. This process requires specific knowledge of SAP development	Infosys			Based on our analysis, we have determined that most of the features that SCE can benefit from in this year's SAP updates are of low complexity and low risk. Consequently, we have been enabling these features through regular operational efforts. However, we anticipate that future quarterly updates may pose a greater degree of complexity, which may require professional services to integrate them within our environment.

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
New Meter Testing	This is needed in order to ensure our meters are performing as expected. Critical for our clients that our meters report data accurately.	$192,486	Not Started			Professional Service	Due to the shortage of existing meters caused by discontinued products, SCE has sought out other manufacturers to supply meters. However, this will require a new meter configuration setup across multiple systems that cannot be handled with existing operational resources	Infosys			The new smart commercial meters require the implementation of new technology to communicate, which goes beyond existing system capabilities. This was implemented as a project in Q2 2023 and not through professional services. Now that we have modified our interfaces to work with these new meters, future meters will require a high level of testing. This extensive testing will require SCE to leverage professional services resources.

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
Training Environment Refresh	Refreshing our training environments allows us to better prepare our clients to use the systems accurately, and better service SCEs customers.	$144,364	In progress	6/6/2022	3/31/2024	Professional Service	Project resources needed to refresh our training environments which includes setting up the environment, configuration, and data migration.	Infosys and TCS			

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
Openlink Professional Services	This is a third party product with customized code provided by the vendor. Openlink is used by SCE for Energy Trading and Risk Management. This proprietary code requires vendor support which cannot be provided by our Managed Services Providers.	$221,358	In progress	1/1/2023	12/31/2023	Professional Service	SCE uses the Openlink Endur system as our energy contract management system. The vendor has written custom code for SCE in the form of the Formula Engine. We procure the services of the COTS vendor to make enhancements to this custom code to meet business needs.	ION			

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
Click Professional Services	This is third party support for ClickSchedule. The support needed would impact the scheduling of distribution, transmission, civil, apparatus, and metering work and field users will not have work order information to complete work. Any delay of work could have safety implications depending on the work type. Also, the closure of	$192,485	Not started			Professional Service	This product code is owned by the vendor. Vendor resources are needed to support critical business impact events for this aging technology.	ClickSoft		1/1/2024-12/31/2024	

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
Substation, Engineering, Modeling Tool (SEMT)	SEMT application is an SCE owned application that was developed and enhanced by General Networks. This application strives to assist substation engineers to accurately model existing as well as new designs of substations. The goal is to provide support to the SEMT application clients for critical	$144,364	In Progress	1/1/2023	12/31/2023	Professional Service	This product code is owned by the vendor, their services are needed to support enhancements and critical business impacts	General Networks			

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
Gomocha Professional Services	The support provided by Gomocha would impact the Inspections, Storm Work Order completion, E1P1 Notifications completions of Distribution, Transmission, Substations, Constructions and Maintenance Field users in the Consolidated Mobile Solution application. Any delay of work or additional General	$96,243	In progress	3/1/2023	12/1/2023	Professional Service	This product code is owned by the vendor, their services are needed to support enhancements and critical business impacts	Gomocha			

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
Primavera/Dynatek Professional Services	This vendor services includes break/fixes or enhancements for Primavera/Dynatek. Primavera is currently being used to manage, plan, and execute 78,000 capital projects across substation, Transmission, and Distribution	$72,182	Not Started			Professional Service	This product code is owned by the vendor, their services are needed to support enhancements and critical business impacts	Oracle		1/1/2024-12/31/2024	

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
Service Management Professional Services (Asset Management & Work Management)	Resources are required to support service management activities for asset management & work management applications. This includes supporting corporate major programs (PSPS, Wildfire Mitigation, Grid Resiliency, Electric Asset Data). They provide oversight and strategic direction to MSP including	$288,728	In Progress	1/1/2023	12/31/2023	Professional Service	Additional Staff Augmentation is needed to support core IT T&D application oversight & governance.	AgileOne			

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
Power Plant Premier Support	Required yearly for custom code fixes and enhancements. Power Plan Premier Support contract is required for in-flight fixes within the Plant, Tax, and Lease modules. PowerPlan is currently vendor supported, all of these fixes require this extra support due to the complexity of these areas that may include custom code and the need	$438,867	In progress	1/1/2023	12/31/2023	Professional Service	Power plan as a platform is a very custom application and requires vendor support for many of the custom codes as well as enhancements in the system. This is not covered as part of standard contract. Inability to resolve issues as well as complete enhancements in a timely manner has direct impact on month end closing processes.	Power Plan Inc			

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
Cloudera Professional Services	The vendor services from Cloudera are required support Hadoop. Hadoop platform support 40 plus applications of different Line of Business (LOB) and self-service reporting which is used for various regulatory and critical data sharing . If Cloudera professional support is not extended it will impact data sharing and self-	$202,110	Not Started	N/A	N/A	Professional Service	This initiative is need because all 40+ application interfaces running on Hadoop are being migrated to Snowflake by end of 2024. Meanwhile it is critical to maintain Hadoop platform to provide seamless data access to the applications and users across SCE, and also to ensure the successful migration of data to Snowflake without any gaps.	Cloudera Inc		N/A	This forecast was based on need basis to ensure we had funds in the event we need vendor support for a business impact event

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
Staff Augmentation SharePoint Service Manager	Backfill for SharePoint Service Manager and supporting number of critical HR applications like Payroll, Time, Employee Master etc. This service manager will support SAP Human Capital Management, SAP Payroll, SAP Disability Management, SAP Tax Engine, Taleo Recruiting, Org Publisher, Everbride Emergency	$240,607	In progress	1/1/2023	12/31/2023	Professional Service	This is backfill for a Service Manager in the SharePoint and Environmental Health & Safety portfolios. The position was not approved for SCE backfill so a supplemental worker was required to maintain the operations of critical applications for the company.	Anand Pag			

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
Staff Augmentation HR Service Manager	Backfill for HR Service Manager and supporting number of critical HR applications like Payroll, Time, Employee Master etc.	$240,607	In progress	1/1/2023	12/31/2023	Professional Service	Backfill for HR Service Manager and supporting number of critical HR applications like Payroll, Time, Employee Master etc.	Anand Pag			

Initiative Name	Impacts/Justification	2023	Status (Completed, In Progress, Not Started)	Start Date	Completion Date	Type of consulting or Professional Service	Why SCE needs a consultant/professional service hired	Vendor	Were costs on target (completed work only)	If delayed or deferred, expected start/end dates	If the work will not be completed at all, identify the circumstance and why it was unforeseen
Intelligent Online Analytical Processing (IOLAP) Professional Services - Snowflake Migration	Required to establish standards & governance, provide consultation and control on projects/ enhancements in data and analytics space to ensure quality, design efficiency and operational effectiveness	$216,546	In Progress	1/1/2023	12/31/2023	Professional Service	Required to establish standards & governance, provide consultation and control on projects/ enhancements in data and analytics space to ensure quality, design efficiency and operational effectiveness	IOLAP Inc.			

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 3 1 - L M W

To: Public Advocates Office
Prepared by: Kelsey Nachreiner
Job Title: IT Project Manager
Received Date: 10/19/2023

Response Date: 11/2/2023

Question 04.a-d:
Referring to Ex. SCE SCE-06 Vol.01 Testimony p. 76 (Table V-11) and SCE's Data Response to PubAdv-SCE-172-LMW Q.15., O&M projects costs from historic 2018 to forecasted TY 2025 change from $1.057 million, $1.848 million, $1.241 million, $2.671 million, $10.864 million, $5.231 million, $3.898 million, $12.328 million, respectively and then remain in an annual $12 million range from 2026 to 2028.

Based on this, please answer the following:
a. What is the reason for the increase from the 2023 and 2024 forecasted expenditure level to SCE's increased expenditures levels from 2025 to 2028. As SCE did in response to PubAdv-SCE-076-LMW Q.6, please quantify the reasons for the increase and the justification for this significant incremental increase.
b. SCE is requesting an increase in comparison to its TY 2025 forecasted spend that is over almost 5x its recorded 2021 ($2.671 million to $12.328 million), 2x its 2023 forecasted spend ($5.631 million to $12.328 million) and over 3x its 2024 forecasted spend ($3.898 million to $12.328 million). What are the major changes in SCE's IT environment and why don't these occur until TY 2025? This may be answered in conjunction with a. above.
c. What major changes are occurring in the IT industry that justify an increase of almost 5x recorded expenditures in 2020 of $2.671 million to $12.328 million in TY 2025. Is this change in the application refresh environment normal in the industry or is this specific to SCE's application refresh activities?
d. SCE appears to increase its project activity completion. How many projects is SCE forecasting for completion in 2023 and 2024 in comparison to 2025, 2026, 2027, and 2028? And why are "O&M Projects" increasing at such a pace as compared to 2023 and 2024 levels?

Response to Question 04.a-d:

a. As mentioned in SCE's response to PubAdv-SCE-076-LMW, new capabilities in the operations organization have resulted in an increased funding request for projects required to support the applications. The increases in the O&M Projects forecast from 2023 to 2025 are primarily due to: $1.6M in Data Management, $2.2M in digital tools, technologies and platforms, $1.2M in Sce.com Digital Self Service, $1.5M in Salesforce platform support, and $932,000 in data archiving.

   SCE provided the justification for data management in PubAdv-SCE-076-LMW Q.3d.

   SCE provided the justification for Digital in PubAdv-SCE-076-LMW Q.7.

SCE provided the justification for Salesforce platform support in PubAdv-SCE-076-LMW Q6.

Investing in Sce.com Digital Self Service will reduce customers' dependency on the customer contact center as it allows for expansion of automation services. This expansion also improves productivity, which in turn reduces backlogs, allowing us to serve our customers more expeditiously. The move to digital and customer self-service requires new technologies such as Chatbots and Agent Assist chat technologies that require more sophisticated technologies, platforms, and data management techniques, which in turn increases our maintenance and operations forecasts.

The Data Archiving effort is to build a business-aligned data archival capability. This will improve the ability to service customers, reduce the cost of storage, improve operational and systems efficiency and decrease compliance and regulatory risk, without impacting operations.

b. The 2025 GRC is the first GRC the App Refresh team submitted forecasts for the new capabilities referenced in 4a, which encompasses years 2025 - 2028. Costs for these new capabilities were also incurred prior to the 2025 GRC submission but were not known or anticipated at the time of developing SCE's 2021 GRC in 2019. SCE continues to prioritize emergent business critical needs against the 2021 GRC-authorized allocation, but these App refreshes are included in the forecast as projects that are necessary in the 2025-2028 period for the reasons described in testimony, Ex. SCE-06, Vol. 1 at pp. 66-70.

c. With the increase of capabilities in the App Refresh space (see 4a above), the number of applications, technologies, and tools SCE needs to refresh and maintain also increases. In TY 2025 Digital tools, technologies, and platforms adds 19 new O&M projects, and Data Management adds an additional 7 new O&M projects. Increasing our digital footprint requires additional support of the technologies, tools and platforms. Additionally, the industry vendors are not providing support for older version of software, creating a need for more frequent refreshes. Shorter refresh cycles reduce cybersecurity risks and increase application reliability.

d. SCE forecasts 18 projects in 2023, 16 projects in 2024, 48 projects in 2025, 43 projects in 2026, 43 projects in 2027, and 45 projects in 2028. This is the first GRC cycle SCE has submitted forecasts for Digital, Data Management and new technologies in Operations. Under forecast ratemaking principles, SCE generally manages within the overall authorized revenue requirement between GRC cycles on a total-company basis (with certain exceptions). Given that GRC forecasts are developed years before the next GRC authorized period, business needs, cost structures, etc., can change between GRCs which requires SCE to managed within overall authorized revenues. Many of these new capability projects have been deferred for this reason, but will place reliability, availability and performance at risk if not authorized for 2025.

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 2 3 - L M W

To: Public Advocates Office
Prepared by: Kelsey Nachreiner
Job Title: IT Project Manager
Received Date: 10/11/2023

Response Date: 10/24/2023

Question 01.a-d:
Referring to SCE's response to PubAdv-SCE-103-LMW Q.1, SCE provided a spreadsheet "Application Refresh Capital Work Paper Data Request.xlsx." Per Column D ("2023 Refresh Cost") for those refreshes/projects over $800,000 please provide the status of each refresh/project as follows:

a. For those Refreshes/Projects started and completed, start date, completion date, and whether the actual cost of the refresh is over or under the forecasted cost. If there are multiple refreshes/projects then please answer the question for each.
b. For those Refreshes that are in process, the date started, the date of expected completion, and whether the actual refresh cost is expected to be over or under its forecasted cost. If there are multiple refreshes/projects then please answer the question for each.
c. For those Refreshes, not yet started, the expected start and completion date, with an explanation why the refresh has not yet started. If there are multiple refreshes/projects then please answer the question for each.
d. For confirmation, in the event Cal Advocates decides to audit these refreshes/projects does SCE maintain records allowing Cal Advocates the ability to determine such items as start dates, end dates, and actual costs? If no, then why is this information not readily available?

In the event SCE does not provide the non-cost data until March 2024 (as referred to in Q.10 of this data response), please provide an explanation why this non-cost data is not available. Additionally, if SCE is unable to provide the data (until March 2024) comparing actual or expected to forecast, please provide an explanation why time is required for review, analysis, and adjustments.

Response to Question 01.a-d:

a.-c. SCE has provided the status for each requested project in the attached document "PubAdv-SCE-223-LMW App Refresh Capital Project Status.xlsx". For in-flight projects, SCE answered whether the actual refresh cost is expected to be over or under its forecasted costs in relations to the *overall* forecasted costs, not just 2023. As of the submission of this response, all in-flight projects are on target to complete at or near the forecasted costs.
d. Yes, SCE maintains records for refreshes/projects that will allow Cal Advocates the ability to determine such items such as start dates, end dates, and actual costs, in the event Cal Advocates requests an audit.

App Refresh Capital Project Status						
Application Name	**2023 Refresh Cost**	**Status**	**Start Date**	**Completion Date**	**Over/Under Forecast**	**If haven't started, explanation to why**
SCE.com PODS Capacity Increase (vNet Rebuild)	$1,140,000	Completed	10/17/2022	2/17/2023	Under	
MDMS Tech Refresh	$3,504,000	In Progress	10/3/2022	2/9/2024	Under	
OT (Open Text) Exstream Upgrade	$2,000,000	In Progress	9/7/2023	5/3/2024	Under	
Transmission & Distribution (T&D) Field Application Refreshes - CMS Upgrade	$1,500,000	In Progress	3/16/2023	4/30/2024	Under	
Transmission & Distribution (T&D) Desktop Application Refreshes - SPIDA	$2,581,718	In Progress	8/1/2020	7/31/2024	Over	
Transmission & Distribution (T&D) Desktop Application Refreshes - LENS	$502,611	Completed	1/2/2023	8/30/2023	Under	
Sterling Managed File Transfer - Rearchitect/Modernize(Cloud)	$1,000,000	Has not started				Current architectural evaluation still in progress, expected to complete end of 2023 and project to start next year
PowerPlan Upgrade	$5,040,000	In Progress	5/25/2023	7/22/2024	Under	
SAP MAX attention	$1,800,000	In Progress	1/1/2023	12/31/2023	Over	
SAP BW/4 Hana Upgrade	$3,250,000	Has not started				Pre project assessment is in progress, expected to start next year
Data Power Modernization	$1,000,000	Has not started				Current architectural evaluation still in progress, expected to complete end of 2023 and project to start next year
Lease Interface upgrade/restructure	$800,000	In Progress	5/25/2023	7/22/2024	Under	
ITSM (IT Service Management): BMC Remedy to Helix Migration	$2,500,000	In Progress	7/1/2022	8/30/2024	Under	
Application Rationalization - Trackers	$2,122,353	In Progress	9/1/2022	12/31/2023	Over	
Application Rationalization - API Management	$580,746	In Progress	9/1/2022	12/31/2023	Over	
Application Rationalization - Calpine	$500,000	Has not started				This work is taken by OU cap software and will not be consumed as part of APP RAT budget
Application Rationalization - SAP Data Management - Capital	$3,069,932	In Progress	10/1/2023	9/30/2024	Under	
Application Rationalization - eDMRM storage Cloud Migration	$475,208	In Progress	8/1/2022	12/10/2023	Over	
Application Rationalization - VMware Optimization (OP01)	$268	In Progress	4/11/2022	2/2/2023	Equal to forecast	
Application Rationalization - Containerization of Remedy (OP19.1 - 19.2)	$500,000	In Progress	10/1/2022	11/30/2023	Under	
Application Rationalization - IBM pSeries & IBM SAN Exit (OP03) IAM Modernization/ADM Remediation SAN Switch Consolidation	$1,091,234	In Progress	7/27/2022	12/30/2023	Over	
Application Rationalization - VDI Modernization (OP08)	$373,369	In Progress	10/10/2022	4/21/2023	Over	
Application Rationalization - Consolidate & Standardize Application Server Stack to Oracle WebLogic	$1,004,911	In Progress	6/27/2022	8/31/2023	Over	
Application Rationalization - SCE Costs	$727,161	In Progress	9/1/2022	9/30/2024	Over	

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 6 5 - L M W

To: Public Advocates Office
Prepared by: Eric Fernald
Job Title: Sr Advisor
Received Date: 11/2/2023

Response Date: 11/15/2023

Question 03:
Referring to SCE's response to PubAdv-SCE-208 Q.1.a., SCE states, "The Data Center Infrastructure replacement is an ongoing refresh of SCE's hardware assets in the data center with a standardized 5-year replacement cycle."

Based on this, Cal Advocates understands this to mean that SCE replaces its hardware assets every 5 years without regard for the condition of the asset because there is a standardized 5 year-year replacement cycle. Is this correct? If no, why not?

Response to Question 03:
Yes, SCE uses a 5-year replacement cycle as a prudent standard to maintain systems reliability in SCE's data centers. As stated in testimony, Exhibit SCE-06, Vol. 01, pages 91-92, historical experiences have shown that extending hardware beyond the 5-year replacement cycle can result in hardware being prone to outages due to lack of spare parts, lack of support for operating software, firmware updates and cybersecurity vulnerability patches, inability to communicate and integrate with other hardware equipment, and degradation in data connection. The 5-year replacement standard increases performance, reliability, accessibility, and serviceability, which allows SCE to better serve its customers.

SCE reiterates that the standard practice for data center asset replacements is a *schedule-based* replacement strategy, not a *condition-based* replacement strategy. This replacement strategy is implemented for two distinct reasons: First, schedule-based replacements ensure that SCE's data center assets are continuously kept up to date with the latest functionality, cybersecurity provisions, full vendor warranty and support. Second, due to the significant volume of data center assets, it would not be operationally and financially prudent to monitor, assess, and remediate these assets on a condition-based replacement strategy or a "run-to-failure" replacement strategy. The standardized 5-year replacement cycle strategy allows business operations to function unimpeded, providing for the safe, reliable, and affordable electric service that our customers depend on.

SCE also discusses our 5-year replacement cycle in the following DR responses:
PubAdv-SCE-111-LMW Q2.b-c, Q3.b-c, Q4.b-c, Q5.b-c, Q6.d, and Q7
PubAdv-SCE-208-LMW Q3.a-c, Q4.a-c, Q5.a-c, and Q6.a-c

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 1 1 1 - L M W

To: Public Advocates Office
Prepared by: Douglas Cooper
Job Title: Senior Manager, IT Asset & Configuration
Received Date: 8/21/2023

Response Date: 11/1/2023

Question 06.a-d Revised:
Referring to Exhibit SCE-06, Vol. 1, Testimony p. 99 (lines 16-23) SCE states, "Aging technology which drives the need for replacement systems, impacting all work categories. As previously mentioned, SCE uses a five-year life cycle as an effective and operationally prudent standard to maintain IT systems reliability. Historical experience has shown that extending hardware beyond this five year life cycle results in hardware more prone to outages". Based on this, please answer the following for each category of asset in regard to SCE's assertion it uses a five year life cycle:

a. Server Replacement - Exhibit SCE-06, Vol. 1, WP p. 167 indicates a Historical 5-year average (2018-2022) of $3.933 million and a Forecast 5 year average (2023-2028) of $15.565 million. Can SCE quantitatively justify why there is a significant increase in this 5 year average. For example, the price of replacing a server increase by x%, or there is overlap in the year used and a better comparison would be using data going back further, or an enhanced technology that requires more servers?

b. Storage Replacement - Exhibit SCE-06, Vol. 1, WP p. 169 indicates a Historical 5-year average (2018-2022) of $0.575 million and a Forecast 5 year average (2023-2028) of $19.963 million. Can SCE quantitatively justify why there is a significant increase in this 5 year average. For example, the price of storage replacement increased by x%, or there is overlap in the year used and a better comparison would be using data going back further, or an enhanced technology that requires more servers?

c. Data Network Replacement - SCE-06, Vol. 1, WP p. 171 indicates a Historical 5-year average (2018-2022) of $5.632 million and a Forecast 5 year average (2023-2028) of $14.836 million. Can SCE quantitatively justify why there is a significant increase in this 5 year average. For example, the equipment used to increase by x%, or there is overlap in the year used and a better comparison would be using data going back further, or the data center refreshes were delayed.

d. Does SCE strictly adhere to this 5 year life cycle? If no, in what instances does it not adhere to its use of a 5 Year life cycle?

Response to Question 06.a-d Revised:
6a) In support of the response to Questions 6.a-c, SCE provides some additional context to the Data Center Infrastructure activity set, particularly on those factors that influence the development of the forecasts for Server Replacement, Storage Replacement, and Data Center Network Replacement. As described in testimony, Exhibit SCE-06, Volume 1, pp. 91-92, the ongoing refresh of SCE's hardware assets in the data center is imperative to the sustainment of business operations of the enterprise, which is standardized on a 5-year hardware asset replacement cycle. The replacement of hardware assets is cyclical in nature, with certain years requiring higher levels of hardware refresh spend compared to other years which require less hardware refresh spend. As a result, there is some degree of year-to-year variability in the hardware refresh spend (both in the historical period, as

well as in the forecast period), based on the volume and vintages of existing hardware assets. Additionally, there are other factors driving hardware refresh spend across the asset categories described in SCE's testimony, including capacity growth due to organic increase of transactional and analytical data, and the transition of capital software projects originally implemented under the Technology Solutions GRC activity to IT Operations for longer term support at the conclusion of the initial implementation period. Lastly, the underlying technologies are evolving and are dynamic in nature. As a result, hardware refresh requirements in the outer years of the forecast may see a shift from one asset category to another (e.g., server or storage assets may see their replacement costs end up in the appliance category due to a shift in technology).

The forecast period annual average of $13.5 million for 2023-2028 (6-year average) compared to the annual historical recorded average of $3.9 million for 2018-2022 (5-year average), results in a forecast increase of $9.6 million in yearly average spend.

The major contributors to the $9.6 million average annual increase in the forecast are:

- Enterprise Platform Core Refresh (EPCR): $4.6 million increase
- Price increases: $1.5 million increase
- CSRP: $2.4 million increase

Description of the major contributing factors.

The majority of the increase in this six-year annual average is due to the SAP systems that replaced the mainframe in 2018-2022 which now need to be refreshed in 2023-2028, along with the change in our underlying SAP landscape from Cisco to HPE. Please refer to testimony at SCE-6, Vol. 1, p. 93 (Figure V-28 – Server Replacement forecast line). One of the drivers of the increase in the average spend in the forecast period is attributed to Enterprise Platform Core Refresh (EPCR) that shows up in the 2027 forecast. EPCR is a capital project for upgrading SCE's SAP Platform to limit operational risk, address technology obsolescence and allow for new SAP capabilities and enhancement to streamline business operations. The 2027 forecast for the EPCR is $27.6 million.

The need for the Mainframe refresh was replaced with the implementation of the Customer Service Re-Platform (CSRP) project where customer service capabilities are migrated to SAP solutions.

The average annual forecast includes an estimated price increase of $1.5 million to reflect the increasing cost of products and services from vendors. The forecast is based on actual costs 5 years ago plus an 8% annual increase to adjust for vendor price increases. For more information on the estimated prices, please reference the spreadsheet attachment included in Question 10 of this data request set (see the worksheet "Methodology", for a more detailed analysis of how SCE determined the 8% annual vendor price increase assumption).

6b) SCE's IT infrastructure strategy is to replace the legacy infrastructure with hyper converged infrastructure. Implementation of this strategy has caused a shift from storage category to appliances starting in 2018-2022 period. A specific example of this change is the SAP Application storage transitioned to HCI Appliance storage, as well as the storage type for SAP HANA in-memory database.

The forecast period annual average of $13.2 million for 2023-2028 (6-year average) compared to

the annual historical recorded average of $0.6 million for 2018-2022 (5-year average), results in a forecast increase of $12.6 million in yearly average spend.

The major contributors to the Storage Replacement $12.6 million average annual increase in the forecast are:

- EPCR and CSRP: $6.5 million increase
- Recategorization of Veritas appliance costs to storage: $5.9 million increase
- Price increases: $0.4 million increase

Description of the contributing factors:

EPCR and CSRP are capital projects for upgrading SCE's SAP Platform to limit operational risk, address technology obsolescence and allow for new SAP capabilities and enhancement to streamline business operations. These SAP solution specific storage types (NetApp) were recorded under the appliance category and will transition back to the storage category in the forecast years.

Recategorization of Veritas appliance costs to storage: The enterprise backup solution Veritas was purchased under the appliance category during the recorded years from 2018 – 2022. The replacement cost for Veritas is categorized under storage for the forecast years.

The average annual forecast includes an estimated price increase of $0.4 million to reflect the increasing cost of products and services from vendors. The forecast is based on actual costs 5 years ago plus an 8% annual increase for vendor price increases. For more information on the estimated prices, please reference the spreadsheet attachment included in PubAdv-SCE-111-LMW Question 10 (see the worksheet "Methodology", for a more detailed analysis of how SCE determined the 8% annual vendor price increase assumption).

6c) The majority of the increase in this six-year average is due to the increase in vendor costs, and the increase in network port requirements in the HCI and SAP solutions that replaced the mainframe in 2018-2022 which now needs to be refreshed in 2023-2028. Refer to testimony on page 93 (Figure V-28).

The forecast period annual average of $12.4 million for 2023-2028 (6-year average) compared to the annual historical recorded average of $5.6 million for 2018-2022 (5-year average), results in a forecast increase of $6.8 million in yearly average spend.

The major contributors to the $6.8 million average annual increase in the forecast are:

- Additional Required Equipment: $2 million increase
- Price increases: $3.3 million increase
- EPCR: $0.2 million increase
- CSRP: $0.1 million increase

Description of the contributing factors:

Additional Required Equipment: New solutions from HPE servers and HCI equipment require

additional network switch ports which added to the network refresh cost in the forecast years.

The average annual forecast includes an estimated price increase of $3.3 million to reflect the increasing cost of products and services from vendors. The forecast is based on actual cost 5 years ago plus an 8% annual increase for vendor price increases. For more information on the estimated prices, please reference the spreadsheet attachment included in PubAdv-SCE-111-LMW Question 10 (see the worksheet "Methodology", for a more detailed analysis of how SCE determined the 8% annual vendor price increase assumption).

Enterprise Platform Core Refresh (EPCR) is an upgrade and refresh of SAP applications for back-office operations, T&D work order management, and enterprise analytics.

The mainframe was replaced with Customer Service Re-Platform (CSRP) project where customer service capabilities are migrated to SAP solutions.

6d) The hardware useful life and replacement period is typically every 5 years based on the vendor's end-of-life criteria.

In some rare circumstances a server system can still be useful once it reaches the end of its useful life as defined by the vendor's end-of-life criteria. The amount of time in that situation can vary. However, if a server system goes beyond the end of its vendor defined useful life, it will lose vendor support. With the vendor no longer providing updates, security patches, or break-fix support, the hardware systems will be at higher risk of significant system failures and cybersecurity breaches. Occasionally, for hardware systems beyond their useful lives, the vendor may offer short-term extended support with limited capabilities and at a much higher cost.

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Page A531

Response to Question 04.b

SCE has requested an extension for this subpart. SCE will send a revised response by October 27 or sooner.

Response to Question 04.c

SCE has requested an extension for this subpart. SCE will send a revised response by October 27 or sooner.

Response to Question 04.d

Yes.

Response to Question 04.e

Yes.

Response to Question 04.f

The 8% and 12% are averages of the low and high percentages for hardware increases from the vendors. Please refer to the pdf file, Confidential_PubAdv-SCE-211-LMW.Q4f Response.pdf, for email communications with vendors on percentage ranges for potential increases in hardware prices.

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Southern California Edison Company's 2025 General Rate Case

DECLARATION OF

Rick Nanda

REGARDING THE CONFIDENTIALITY OF CERTAIN DATA

I, Rick Nanda, declare and state:

1. I am Principal Manager, Application Services – Enterprise at Southern California Edison (SCE). Albert Ma, Vice President, Technology, Data, and Strategic Services delegated authority to me to sign this declaration. I have responsibility for overseeing and reviewing SCE's 2025 General Rate Case Application to the California Public Utilities Commission, Exhibit SCE 06, Volume 01, Enterprise Technology.

2. I am making this declaration in accordance with the instructions set forth in General Order 66D.

3. I have personal knowledge of the facts and representations herein and, if called upon to testify, could and would do so, except for those facts expressly stated to be based upon information and belief, and as to those matters, I believe them to be true.

4. Listed below are the data for which SCE is seeking confidential protection and the basis for SCE's confidentiality request.

Location of Confidential Data	**Pages** (if available)	**Description of Information that is Confidential**	**Basis for SCE's Confidentiality Claim**
PubAdv-SCE-211-LMW, Question Q4 Response Attachment: Confidential_PubAdv-SCE-211-LMW.Q4f Response.pdf	All pages	Vendor Pricing	Third-Party (Vendor) information, including vendor proprietary information such as Vendor Bid, Pricing Information and Vendor Proprietary Information subject to non-disclosure or confidentiality agreement, contract between the utility and third-party vendors that contain confidentiality clauses. Protected from

DocuSign Envelope ID: 35D7FBDA-4FE5-4194-9B59-183EE5DEE23D

Location of Confidential Data	Pages (if available)	Description of Information that is Confidential	Basis for SCE's Confidentiality Claim
			disclosure under Gov't Code §§ 7927.300, 7925.000, 7927.705, 7924.510(f), 7927.605, 7922.000, 7922.540; 7930.205, Evid. Code § 1060; Civil Code § 3426 et seq.; 18 C.F.R. Part 358 (FERC Standards of Conduct, FERC Order 717); Cal. Code Regs. 17 § 95914(c)(1); SEC Rules 10b-5, 10b-5-1, 10b5-2.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on 10/20/2023 at West Covina, California.

DocuSigned by:

30416BF10FB64F5...

Rick Nanda

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Pages A535-A545

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Southern California Edison Company's 2025 General Rate Case

DECLARATION OF

Rick Nanda

REGARDING THE CONFIDENTIALITY OF CERTAIN DATA

I, Rick Nanda, declare and state:

1. I am Principal Manager, Application Services – Enterprise at Southern California Edison (SCE). Albert Ma, Vice President, Technology, Data, and Strategic Services delegated authority to me to sign this declaration. I have responsibility for overseeing and reviewing SCE's 2025 General Rate Case Application to the California Public Utilities Commission, Exhibit SCE 06, Volume 01, Enterprise Technology.

2. I am making this declaration in accordance with the instructions set forth in General Order 66D.

3. I have personal knowledge of the facts and representations herein and, if called upon to testify, could and would do so, except for those facts expressly stated to be based upon information and belief, and as to those matters, I believe them to be true.

4. Listed below are the data for which SCE is seeking confidential protection and the basis for SCE's confidentiality request.

Location of Confidential Data	**Pages** (if available)	**Description of Information that is Confidential**	**Basis for SCE's Confidentiality Claim**
PubAdv-SCE-111-LMW, Question 10 Attachment named: CONFIDENTIAL_PAO-SCE-LMW.Q10.xlsx Workbook Tabs 2023-2028	Response tabs: 2023, 2024, 2025, 2026, 2027, and 2028 columns B, D, & H	Vendor Pricing	Third-Party (Vendor) information, including vendor proprietary information such as Vendor Bid, Pricing Information and Vendor Proprietary Information subject to non-disclosure or confidentiality agreement, contract between the utility and third-party vendors that contain confidentiality clauses. Protected from disclosure under Gov't Code §§ 7927.300, 7925.000, 7927.705, 7924.510(f),

DocuSign Envelope ID: 5E49FCF5-75C8-47F8-865A-F5AFC4DE3F2E

Location of Confidential Data	Pages (if available)	Description of Information that is Confidential	Basis for SCE's Confidentiality Claim
			7927.605, 7922.000, 7922.540; 7930.205, Evid. Code § 1060; Civil Code § 3426 et seq.; 18 C.F.R. Part 358 (FERC Standards of Conduct, FERC Order 717); Cal. Code Regs. 17 § 95914(c)(1); SEC Rules 10b-5, 10b-5-1, 10b5-2.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on 9/19/2023 at West Covina, California.

DocuSigned by:

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Rick Nanda

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Pages A548-A568

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 0 7 - L M W

To: Public Advocates Office
Prepared by: Mario Carrillo
Job Title: IT Operations Manager
Received Date: 10/4/2023

Response Date: 10/18/2023

Question 02.a-b:
Referring to SCE's response PubAdv-SCE-119-LMW Q.2c SCE states, "SCE defines OU Capitalized Software projects as those technology projects that would introduce new functionality. The Windows 11 Program is an operational upgrade/technology refresh with an enterprise impact; therefore, it is more appropriate to be included as part of the End User Computing Maintenance & Replacement forecast and testimony in this GRC." Additionally, per SCE-06 Vol.01 Testimony p. 111 (lines 25-27) and p. 112 (lines 1-11) SCE states, "Another significant driver of the cost in the forecast period of 2023-2028 is the Windows 11 Program. The focus of the Windows 11 Program is to upgrade our current Windows-based operating systems from Windows 10 to a single modern platform, Windows 11, which will enable significant performance improvements. In the last GRC, SCE was authorized funds to upgrade to the Windows 10 operating system. This project spans the entire SCE enterprise and employee base. SCE has adopted the Microsoft platform as the corporate standard to provide core capabilities such as email, chat, phone, collaboration, word processing, spreadsheet data analysis, and information presentation. Staying current with the Windows platform by upgrading to the next version allows SCE to be in alignment with our internal computing strategies as well as the Microsoft Enterprise Strategy. This is important in order to take full advantage of the maintenance and service offerings in our contract with Microsoft. Windows 11 will simplify the desktop experience and provide a consistent computing experience across phones, tablets, and PCs, making our employees more responsive and productive. It will also provide current enterprise-grade security to help protect against modern threats and simplify the management of both corporate and employee-owned devices on our network."

Provide the following:

a. Based on the above statement, it appears Windows 11 will enable significant improvements, will make SCE's employees more responsive and productive, protect against modern threats, and simplify the management of both corporate and employee owned devices on its network. Given these benefits and in comparison to Windows 10, provide documentation that explains why SCE does not consider Windows 11 to have new functionality and classified as OU Capital Software.
b. Provide documentation that explains if Windows 7 was classified as OU Capital Software. If so, what new functionalities did it provide? If no, what was the classification for Windows 7?

Response to Question 02.a-b:

2a. The category in which Windows 11 grouped in does not change the value and the necessity of the update. SCE defines OU Capitalized Software projects as those technology projects that includes progressing the functionality and/or capabilities of SCE's existing and new operating software across the broad range of BPGs (see SCE 6, Vol. 2, p 1). Furthermore, as described in SCE's 2021 GRC (SCE-06, Volume 1, Part 2, p.2), "Capital projects encompassed in this forecast are typically new or driven by adding new functionality and can also include certain refreshes." SCE notates in footnote 3, that "[r]efreshes contained in this volume are incidental to projects providing new functionality, are not cyclical in nature, or are medium-to high complexity." The Windows 11 Program is an operational upgrade/technology refresh with companywide impacts with limited new functionality, is part of a more cyclical refresh strategy, and is considered lower complexity in comparison to the previous Windows 10 Upgrade. For these reasons, it is more appropriate to be placed as part of the End User Computing Maintenance & Replacement (EUC) testimony in this GRC.

The Windows 7 to Windows 10 upgrade was considered a major update as extensive testing and significant remediation for software applications was required. Remediation activities involved both critical and non-critical applications, all of which were fully remediated to function optimally on Windows 10. This was a significant undertaking, therefore SCE classified it under OU Capitalized Software, as this not only required intensive testing and remediation but also upgrading of licenses to ensure compatibility with the new operating system.

As SCE transitions to Windows 11, IT and OU departments will continue to perform testing and remediating the entire application portfolio. However, it is anticipated that the level of changes and remediation required for this process will be less than that experienced during the transition from Windows 7 to Windows 10. This is due to the lessons learned and efficiencies gained from the previous upgrade process. As such, SCE classified the Windows 11 under EUC.

2b. Windows 7 was described in 2012 GRC within Exhibit No.: SCE-05, Vol. 3, p. 4, Capitalized Software, under Operating Software, which is primarily used to manage and monitor the health of mainframe servers, midrange servers, storage, and personal computers (SCE-05, Vol. 3, p. 1).

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET P u b A d v - S C E - 2 4 8 - L M W

To: Public Advocates Office
Prepared by: Mario Carrillo
Job Title: IT Operations, Manager
Received Date: 10/25/2023

Response Date: 11/7/2023

Question 05.a-c:
Referring to SCE's spreadsheet, "PubAdv-SCE-207-LMW Details," for the "Units Acquired and Deployed Jan. 2023 to Sept. 2023" column, please provide an explanation for the difference in the units forecasted and the actual units acquired to date the following categories:

a. Tablets.
b. Digital Monitors.
c. Rugged Devices.

Response to Question 05.a-c:

Response to Question 05.a:

The difference in the units forecasted and the actual units acquired to date for tablets is driven by the reprioritization of business needs in 2023. As such, SCE is shifting the work from Tablets to refresh of Rugged Devices. As of December 31, 2022, there were 1,869 rugged devices that were over the 4-year life cycle. In addition, these rugged devices are currently running on Windows 7. With Windows 7 reaching the end of its support cycle, it is critical for SCE to refresh these Rugged Devices.

Response to Question 05.b:

As stated in Q2.a of this data request set, "Digital Monitors" is comprised of 1) video wall implementation and refresh and 2) hardware refresh for conference rooms. The units acquired and deployed were provided between January and September 2023. With SCE's workforce returning to the office, the demand for conference room upgrades continues to grow and SCE is working to meet these demands as forecasted for 2023. Therefore, the difference in the units forecasted and the actual acquired units to date is due to timing.

Response to Question 05.c:

The difference in the units forecasted and the actual units acquired to date for Rugged Devices is driven by the reprioritization of business needs. Please refer to question 5a of this data request set for a detailed explanation.

Southern California Edison
A.23-05-010 – SCE 2025 GRC

DATA REQUEST SET T U R N - S C E - 0 8 5

To: TURN
Prepared by: Eric Roddick
Job Title: IT Business & Strategic Planning, Principal Manager
Received Date: 2/5/2024

Response Date: 2/15/2024

Question 02:
At SCE-07, Vol. 1, page 45, SCE includes its proposal to establish the NextGen ERP SAP Memorandum Account. Please provide SCE's best current estimate of the Implementation and Post Implementation costs (as those terms are used in SCE-06, Vol. 2, p. 77) SCE anticipates recording in this account in 2023 (if applicable) and in 2024. Please break out the amounts into O&M expense and capital.

Response to Question 02:
At the time of SCE's response to this data request, SCE is actively working on the Solution Analysis Phase 2 stage of the NextGen ERP program. As referenced in SCE-06, Vol. 2, page 76, the purpose of the Solution Analysis phases is to develop the forecasts for Implementation and Post – Implementation costs. Until the Solution Analysis Phase 2 is completed, SCE continues to have a high degree of uncertainty related to the total Implementation and Post – Implementation costs.

No costs from 2023 will be recorded in the proposed NextGen ERP SAP Memorandum Account because all 2023 recorded costs were for the Solution Analysis phases, which are included in SCE's 2025 GRC forecast. While there is still high uncertainty, for the purpose of this data request, there is a high likelihood of at least $35 million to $140 million in 2024 Implementation Costs (capital) eventually being recorded in the proposed NextGen ERP SAP Memorandum Account due to the need for functional design services, technology readiness, platform and cloud Request for Proposals (RFPs), human capital, and other services deemed critical to the efficient transition from Solution Analysis Phase 2 to Implementation, and not requested in the 2025 GRC request.

Appendix B

Enterprise Technology Rebuttal Workpapers

SCE-17 Vol. 01: Rebuttal Testimony on Enterprise Technology
Appendix B Index of Workpapers

WORKPAPERS	PAGE(S)
Technology Delivery Non-Labor Rebuttal	B1
Digital and Process Transformation Labor	B2-B6
CONFIDENTIAL DPT Recorded Use Cases for 2023	B7-B36
CONFIDENTIAL O&M Workpapers Perpetual License SaaS Cloud	B37-B110
CONFIDENTIAL Cloud Increases	B111-B148
Cloud All Historical Increases To Forecast	B149
CONFIDENTIAL Perpetual License Increases	B150-B199
Cloud and Perpetual License Complete Analysis	B200
Cloud & Perpetual License 2021 Primary Reasons for Underrun	B201
Application Refresh O&M Projects - New Work	B202-B229
Application Refresh O&M Projects 2022 Recorded	B230
Application Refresh O&M Projects 2023 Recorded	B231
Application Refresh C&PS New Work	B232-B239
Application Refresh C&PS 2022 Recorded	B240
Application Refresh C&PS 2023 Recorded	B241
Additional Functionalities for Perpetual License Capital Selected Projects	B242-B243
Application Refresh Capital New Work	B244-B252
Cal Advocates' Data Request Response to SCE- PubAdv-022-WD, Question 1.	B253-B254
Application Refresh Capital Workpaper	B255-B284
How Often Should I Replace My Servers, Article By the Revolution Group, 2/17/2017	B285-B288
Correction to Cal Advocates Forecast - Adjustments	B289
Rugged Device Lifecycle	B290-B292

Technology Delivery Non Labor Rebuttal

Cost Obje	Project	2023	2024	2025	2026	2027	2028
F529982	CCURE Re-Platform	54,349	45,326	-	-	-	-
F529982	COBRA - Centralized Budget & Reporting Analytics System	30,640	-	-	-	-	-
F529982	EHSQ	346,474	290,089	-	-	-	-
F529982	ESPP LTI - Morgan Stanley to new vendor Migration	25,363	-	-	-	-	-
F529982	HR Replatform	182,069	-	-	-	-	-
F529982	PowerPlan Upgrade 2023	-	-	-	-	-	-
F529982	UI Planner Upgrade		72,522	-	-	-	-
F529982	SCEcom Digital Mobile App Phase 3	18,117	22,663	-	-	-	-
F529982	[Value Stream] - BI and Analytics (Data Science and Self-Service)		104,251	56,539	36,954	36,229	53,278
F529982	[Value Stream] - Data Engineering (DaaS)		217,567	197,888	110,861	90,573	79,917
F529982	[Value Stream] - Evolve Data Environment (Data Catalog)		81,587	235,581	230,961	81,516	79,917
F529982	[Value Stream] - Trusted Datasets (Data Quality Improvement)		169,974	141,348	157,054	135,860	133,196
F529982	EPCR - SAP Stack Upgrade	54,349	45,326	-	-	-	-
F529982	LN Decom - Migration to SAP Marketing Cloud	36,233	-	-	-	-	-
F529982	NetComm Encryption	50,726	-	-	-	-	-
F529982	AI Machine Learning Analytics (DAP Phase 3)		9,065	9,423	-	-	-
F529982	ARIG_ECN Consolidation		1,813	-	-	-	-
F529982	Battery Value Streams		-	-	18,477	18,477	18,477
F529982	Catalina Repower Phase 2		-	-	9,238	-	-
F529982	Control Center Organizational Alignment Ph 2 (WOGCC)		-	9,423	-	-	-
F529982	Curtailment Initiative	8,696	-	-	-	-	-
F529982	DRRS Initiative (Olivine) - ADR Decommissioning		9,065	-	-	-	-
F529982	Endur Upgrade	19,565	-	-	-	-	-
F529982	EPM VAMO (aka PCIA Track 3)	6,246	-	-	-	-	-
F529982	Generation Data Services		-	9,423	-	-	-
F529982	GenMS Refresh	29,920	317,285	-	-	-	-
F529982	Hydro Value Streams		-	-	13,858	13,858	13,858
F529982	IMEP 2023 - Releases	34,783	-	-	-	-	-
F529982	Mountainview Duct Burner Refresh		-	-	18,477	-	-
F529982	Peaker Black Start Generator Refresh		9,065	-	-	-	-
F529982	Process Automation Phase 2 (BPA Phase 2)	7,246	-	-	-	-	-
F529982	PS Hadoop Re-platform	7,246	-	-	-	-	-
F529982	Resource Adequacy (RA) Reform - 24 Hour Slice		18,131	-	-	-	-
F529982	SettleCore Re-platform	17,392	-	-	-	-	-
F529982	System1 Portable Enterprise Solution		-	18,846	9,238	-	-
F529982	Thermal Fleet Value Steams		-	-	-	9,057	9,057
F529982	UMT 360 Generation Phase 2		9,065	-	-	-	-
F530695	Next Gen	129,126	-	-	-	-	-
	Adjustment to increase to 3% for 2025-2028		-	1,312,688	1,197,403	1,263,049	1,186,381
	Total SP&D All Other	1,058,539	1,422,795	1,991,160	1,802,522	1,648,618	1,574,082
F530905	Centralized Remedial Action Scheme (CRAS) Refresh	139,133	-	-	-	-	-
F530905	Digital Crew Board	289,862	-	-	-	-	-
F530905	Scheduling Re-Platform	1,084,760	41,091	-	-	-	-
F530905	SCMT - Scope and Cost Management Tool	3,624	-	-	-	-	-
F530905	WorkIt	1,732,370	453,264	282,697	282,697	282,697	282,697
	EAD		-	313,793	307,641	301,608	295,694
	Adjustment to increase to 3% for 2025-2028		-	263,686	293,422	314,392	330,853
	Total SP&D T&D	**3,249,749**	**494,355**	**860,176**	**883,759**	**898,697**	**909,244**
	Total Capital Related O&M	**4,308,288**	**1,917,150**	**2,851,336**	**2,686,281**	**2,547,315**	**2,483,326**
	Miscellaneous O&M Expenses	157,357	151,182	160,294	160,294	160,294	160,294
	OEC	64,279	57,009	55,126	54,045	52,985	51,946
	Total Non Labor (Constant $)	**4,529,925**	**2,125,341**	**3,066,756**	**2,900,620**	**2,760,594**	**2,695,567**
	Normalized Amount (2025-2028)			**$2,855,884**			

Digital and Process Transformation Labor

Southern California Edison - 2025 GRC
Digital Process Transformation GRC Activity
SCE-06 Vol. 01
Constant $

Digital Process Transformation Labor 2023 - 2028

Constant $000's

Number of Positions	Position Description	2023	2024	2025	2026	2027	2028
29	Base Labor	$ 2,991,542	$ 3,050,906	$ 3,302,320	$ 3,297,157	$ 3,291,999	$ 3,289,620
7	Interns (including 1 MBA intern)	$ 48,306	$ 47,776	$ 51,713	$ 51,632	$ 51,551	$ 51,514
2	Bus Process Improvement Sr. Advisors from Strategic Performance Improvement	$ 224,602	$ 222,136	$ 240,442	$ 240,066	$ 239,690	$ 239,517
93	Total Additions to 2025 Labor Forecast (for increasing demand)	$ 1,395,277	$ 2,422,144	$ 4,373,042	$ 5,692,748	$ 6,788,144	$ 7,931,520
	Employee Compensation Program	$ 7,623	$ 12,120	$ 190,761	$ 196,324	$ 200,185	$ 237,176
	Grand Total	**$ 4,667,351**	**$ 5,755,082**	**$ 8,158,277**	**$ 9,477,927**	**$ 10,571,569**	**$ 11,749,348**
			Normalized Amount (2025-2028)				
				$9,989,280.21			

Southern California Edison - 2025 GRC
Digital Process Transformation GRC Activity
SCE-06 Vol. 01
Constant $

Digital Process Transformation Labor 2023 - 2028

DPT - Strategy, Innovation, & Advanced Analytics (incremental positions)							
Total # per Position Title	**Position Title**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
1	AI Applications, Prin Mgr	$ -	$ -	$ 237,007	$ 236,636	$ 236,266	$ 236,095
3	App Dev, Advisor	$ -	$ 27,261	$ 29,508	$ 58,924	$ 88,247	$ 88,184
2	App Dev, Spec	$ 43,077	$ 56,805	$ 61,486	$ 61,390	$ 122,588	$ 122,500
1	App Dev, Sr Advisor	$ -	$ -	$ -	$ 59,866	$ 59,773	$ 59,730
1	App Dev, Sr Spec	$ 16,132	$ 21,273	$ 23,026	$ 22,990	$ 22,954	$ 22,938
1	Bus Sys Anlys, Sr Spec	$ 14,359	$ 18,935	$ 20,495	$ 20,463	$ 20,431	$ 20,417
2	Data Engineering, Advisor	$ -	$ -	$ -	$ 149,824	$ 239,343	$ 239,170
2	Data Engineering, Sr Advisor	$ -	$ -	$ 206,071	$ 205,749	$ 205,427	$ 205,279
2	IT Arch (Systems Design), Advisor	$ -	$ -	$ -	$ 137,315	$ 274,200	$ 274,002
5	IT Arch (Systems Design), Sr Advisor	$ 114,458	$ 392,431	$ 588,143	$ 587,223	$ 586,304	$ 748,625
6	Prdctve Anlytcs/Data Science, Advisor	$ 91,177	$ 90,176	$ 390,429	$ 487,273	$ 587,833	$ 583,391
2	Prdctve Anlytcs/Data Science, Specialist	$ 48,396	$ 63,819	$ 69,079	$ 68,971	$ 137,725	$ 137,626
2	Prdctve Anlytcs/Data Science, Sr Advisor	$ -	$ -	$ -	$ 119,267	$ 238,160	$ 237,988
2	Prdctve Anlytcs/Data Science, Sr Spec	$ -	$ -	$ -	$ -	$ -	$ 133,868
32	**Total by Year**	**$ 327,599**	**$ 670,701**	**$ 1,625,244**	**$ 2,215,891**	**$ 2,819,254**	**$ 3,109,812**

Southern California Edison - 2025 GRC
Digital Process Transformation GRC Activity
SCE-06 Vol. 01
Constant $

Digital Process Transformation Labor 2023 - 2028

DPT - Product & Design (incremental positions)							
Total # per Position Title	**Position Title**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
1	App Dev, Sr Advisor	$ -	$ -	$ -	$ 59,866	$ 59,773	$ 59,730
1	Bus Ops Anlys, Advisor	$ -	$ -	$ 115,374	$ 115,194	$ 115,013	$ 114,930
2	Bus Ops Anlys, Sr Advisor	$ -	$ -	$ -	$ 140,474	$ 140,254	$ 280,306
2	Bus Ops Anlys, Sr Spec	$ -	$ 187,829	$ 203,307	$ 202,989	$ 202,671	$ 202,525
2	Bus Process Imprvmt, Sr Advisor	$ -	$ -	$ -	$ -	$ -	$ 200,126
1	Info Tchnlgy Prj Mgmt, Sr Mgr	$ 157,725	$ 155,993	$ 168,847	$ 168,583	$ 168,320	$ 168,198
6	Info Tchnlgy Prj Mgr	$ 38,912	$ 203,365	$ 277,709	$ 277,275	$ 276,841	$ 331,969
9	Info Tchnlgy Sr Prj Mgr	$ -	$ -	$ 145,646	$ 276,034	$ 483,248	$ 611,672
1	Info Tchnlgy, Assoc Proj Mgr	$ -	$ 20,307	$ 21,981	$ 21,946	$ 21,912	$ 21,896
1	Prj Mgmt, Assoc Proj Mgr	$ 27,900	$ 36,792	$ 39,824	$ 39,762	$ 39,700	$ 39,671
3	Tech/Digital Prod Owner, Sr Prj Mgr	$ 139,493	$ 137,961	$ 209,062	$ 208,735	$ 267,954	$ 267,760
29	**Total by Year**	**$ 364,030**	**$ 742,247**	**$ 1,181,750**	**$ 1,510,858**	**$ 1,775,686**	**$ 2,298,783**

Southern California Edison - 2025 GRC
Digital Process Transformation GRC Activity
SCE-06 Vol. 01
Constant $

Digital Process Transformation Labor 2023 - 2028

DPT - Development, Performance, & Operations (incremental positions)							
Total # per Position Title	**Position Title**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
1	App Dev, Advisor	$ -	$ -	$ -	$ 29,462	$ 29,416	$ 29,395
3	App Dev, Spec	$ 28,718	$ 94,675	$ 102,477	$ 143,244	$ 143,019	$ 142,916
4	App Dev, Sr Advisor	$ -	$ -	$ -	$ 59,866	$ 179,318	$ 238,918
4	App Dev, Sr Spec	$ 32,264	$ 42,546	$ 138,157	$ 137,941	$ 137,725	$ 183,501
3	Bus Ops Anlys, Advisor	$ 215,548	$ 213,181	$ 230,748	$ 345,581	$ 345,040	$ 344,791
3	Bus Ops Anlys, Specialist	$ 71,856	$ 140,974	$ 152,592	$ 152,353	$ 152,115	$ 228,007
4	Bus Ops Anlys, Sr Spec	$ 94,957	$ 187,829	$ 304,960	$ 405,978	$ 405,343	$ 405,050
1	Info Tchnlgy Prj Mgmt, Sr Mgr	$ -	$ -	$ 168,847	$ 168,583	$ 168,320	$ 168,198
6	Info Tchnlgy Prj Mgr	$ 38,912	$ 51,313	$ 166,625	$ 221,820	$ 332,209	$ 331,969
1	Info Tchnlgy Sr Prj Mgr	$ -	$ 59,714	$ 64,635	$ 64,534	$ 64,433	$ 64,387
2	Project Mgmt, Prin Mgr	$ 221,394	$ 218,963	$ 237,007	$ 236,636	$ 236,266	$ 385,793
32	**Total by Year**	**$ 703,648**	**$ 1,009,195**	**$ 1,566,048**	**$ 1,965,998**	**$ 2,193,204**	**$ 2,522,925**

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Southern California Edison Company's 2025 General Rate Case
DECLARATION OF
RICK NANDA
REGARDING THE CONFIDENTIALITY OF CERTAIN DATA

I, Rick Nanda, declare and state:

1. I am Principal Manager, Application Services – Enterprise at Southern California Edison (SCE). Albert Ma, Vice President, Technology, Data, and Strategic Services delegated authority to me to sign this declaration. I have responsibility for overseeing and reviewing SCE's 2025 General Rate Case Application to the California Public Utilities Commission, Exhibit SCE 17, Volume 01, Enterprise Technology Rebuttal Testimony.

2. I am making this declaration in accordance with the instructions set forth in General Order 66D.

3. I have personal knowledge of the facts and representations herein and, if called upon to testify, could and would do so, except for those facts expressly stated to be based upon information and belief, and as to those matters, I believe them to be true.

4. Listed below are the data for which SCE is seeking confidential protection and the basis for SCE's confidentiality request.

Location of Confidential Data	Pages (if available)	Description of Information that is Confidential	Basis for SCE's Confidentiality Claim
SCE-17, Vol.1 Enterprise Technology GRC Rebuttal Testimony, Appendix B, Workpapers, "Cloud Increases"	All	Vendor Pricing, product names, product descriptions, Software publisher licensing information, 2022 recorded amounts, forecast 2025-2028 amounts.	Third-Party (Vendor) information, including vendor proprietary information such as Vendor Bid, Pricing Information and Vendor Proprietary Information subject to non-disclosure or confidentiality agreement, contract between the utility and third-party vendors that contain confidentiality clauses. Protected from disclosure under Gov't Code §§ 7927.300, 7925.000, 7927.705, 7924.510(f), 7927.605, 7922.000, 7922.540; 7930.205, Evid. Code § 1060; Civil Code § 3426 et seq.; 18 C.F.R. Part 358 (FERC Standards of Conduct, FERC Order 717); Cal. Code Regs. 17 § 95914(c)(1); SEC Rules 10b-5, 10b-5-1, 10b5-2.

Location of Confidential Data	Pages (if available)	Description of Information that is Confidential	Basis for SCE's Confidentiality Claim
SCE-17, Vol.1 Enterprise Technology GRC Rebuttal Testimony, Appendix B, Workpapers, "Perpetual License Increases"	All	Vendor Pricing, product names, product descriptions, Software publisher licensing information, 2022 recorded amounts, forecast 2025-2028 amounts.	Third-Party (Vendor) information, including vendor proprietary information such as Vendor Bid, Pricing Information and Vendor Proprietary Information subject to non-disclosure or confidentiality agreement, contract between the utility and third-party vendors that contain confidentiality clauses. Protected from disclosure under Gov't Code §§ 7927.300, 7925.000, 7927.705, 7924.510(f), 7927.605, 7922.000, 7922.540; 7930.205, Evid. Code § 1060; Civil Code § 3426 et seq.; 18 C.F.R. Part 358 (FERC Standards of Conduct, FERC Order 717); Cal. Code Regs. 17 § 95914(c)(1); SEC Rules 10b-5, 10b-5-1, 10b5-2.
SCE-17, Vol.1 Enterprise Technology GRC Rebuttal Testimony, Appendix B, Workpapers, "Digital and Process Transformation (DPT) Use Cases for 2023"	All	Use Case information including proprietary information on operational processes.	SCE proprietary and trade secret information, intellectual property or competitive data (e.g., noncore competitive growth opportunities, pricing forecast, supply and demand forecast) and other commercial records including project specific calculations, project costs, equipment cost; market-sensitive data; nonpublic business plans and strategies. Gov't Code §§ 7922.000; 7927.605(a); 7927.705.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on 4/12/2024 at West Covina, California.

DocuSigned by:
Rick Nanda
30416BF10FB64F5...

Rick Nanda

Confidential O&M Workpapers - Perpetual License SaaS Cloud

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Basis for Confidentiality In Accompanying Confidentiality Declaration.
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Southern California Edison Company's 2025 General Rate Case

DECLARATION OF

Rick Nanda

REGARDING THE CONFIDENTIALITY OF CERTAIN DATA

I, Rick Nanda, declare and state:

1. I am Principal Manager, Application Services – Enterprise/Information Architecture at Southern California Edison (SCE). Albert Ma, Vice President, IT Enterprise Services delegated authority to me to sign this declaration. I have responsibility for overseeing and reviewing SCE's 2025 General Rate Case Application to the California Public Utilities Commission, Exhibit SCE 06, Volume 01, Enterprise Technology.

2. I am making this declaration in accordance with the instructions set forth in General Order 66D and the California Public Utilities Commission's (Commission) decisions issued in R. 14-11-001, which were issued on August 25, 2016, and September 28, 2017, respectively, and govern the submission of confidential documents to the Commission.

3. I have personal knowledge of the facts and representations herein and, if called upon to testify, could and would do so, except for those facts expressly stated to be based upon information and belief, and as to those matters, I believe them to be true.

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Location of Confidential Data	Pages (if available)	Description of Information that is Confidential	Basis for SCE's Confidentiality Claim
SCE 06 Volume 1, O&M Work Paper- Perpetual License, SaaS, Cloud	All	Vendor Pricing	Third-Party (Vendor) information, including vendor proprietary information such as Vendor Bid, Pricing Information and Vendor

Location of Confidential Data	Pages (if available)	Description of Information that is Confidential	Basis for SCE's Confidentiality Claim
			Proprietary Information subject to non-disclosure or confidentiality agreement, contract between the utility and third party vendors that contain confidentiality clauses. (*See* Gov't Code §§6254(K), 6255(a) *See, e.g.,* D.11-01-036, 2011 WL 660568)
SCE 06 Volume 1, Microsoft EA Renewal	All	Vendor Pricing	Third-Party (Vendor) information, including vendor proprietary information such as Vendor Bid, Pricing Information and Vendor Proprietary Information subject to non-disclosure or confidentiality agreement, contract between the utility and third party vendors that contain confidentiality clauses. (*See* Gov't Code §§6254(K), 6255(a) *See, e.g.,* D.11-01-036, 2011 WL 660568)

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

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Executed on 4/17/2023 at Rosemead, California.

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Rick Nanda
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Rick Nanda

Table IV-10: Cloud Software
2022 Recorded vs. Test Year 2025- Reasons for Increases
Constant 2022 $ Millions

PubAdv-SCE-083-LMW_Q13c	Cloud

Line	Category	2022 Recorded	2025 Normalized (Average of 2025-2028)	2025 Normalized (Average of 2025-2028) versus 2022 Recorded
1	Growing business needs to digitize our environment and support SCE initiatives impactful to customer satisfaction, affordability, reliability, safety, and quality	12.46	22.70	10.25
2	Movement to the Cloud as most new functionalities are primarily not available on premises and related limitations on accounting rules	11.77	18.83	7.05
3	Year-over-year vendor pricing increases and growth in licenses for new users	15.63	15.48	(0.15)
4	**Total**	**39.86**	**57.01**	**17.15**

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Southern California Edison Company's 2025 General Rate Case

DECLARATION OF

RICK NANDA

REGARDING THE CONFIDENTIALITY OF CERTAIN DATA

I, Rick Nanda, declare and state:

1. I am Principal Manager, Application Services – Enterprise at Southern California Edison (SCE). Albert Ma, Vice President, Technology, Data, and Strategic Services delegated authority to me to sign this declaration. I have responsibility for overseeing and reviewing SCE's 2025 General Rate Case Application to the California Public Utilities Commission, Exhibit SCE 17, Volume 01, Enterprise Technology Rebuttal Testimony.

2. I am making this declaration in accordance with the instructions set forth in General Order 66D.

3. I have personal knowledge of the facts and representations herein and, if called upon to testify, could and would do so, except for those facts expressly stated to be based upon information and belief, and as to those matters, I believe them to be true.

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Location of Confidential Data	Pages (if available)	Description of Information that is Confidential	Basis for SCE's Confidentiality Claim
SCE-17, Vol.1 Enterprise Technology GRC Rebuttal Testimony, Appendix B, Workpapers, "Cloud Increases"	All	Vendor Pricing, product names, product descriptions, Software publisher licensing information, 2022 recorded amounts, forecast 2025-2028 amounts.	Third-Party (Vendor) information, including vendor proprietary information such as Vendor Bid, Pricing Information and Vendor Proprietary Information subject to non-disclosure or confidentiality agreement, contract between the utility and third-party vendors that contain confidentiality clauses. Protected from disclosure under Gov't Code §§ 7927.300, 7925.000, 7927.705, 7924.510(f), 7927.605, 7922.000, 7922.540; 7930.205, Evid. Code § 1060; Civil Code § 3426 et seq.; 18 C.F.R. Part 358 (FERC Standards of Conduct, FERC Order 717); Cal. Code Regs. 17 § 95914(c)(1); SEC Rules 10b-5, 10b-5-1, 10b5-2.

Location of Confidential Data	Pages (if available)	Description of Information that is Confidential	Basis for SCE's Confidentiality Claim
SCE-17, Vol.1 Enterprise Technology GRC Rebuttal Testimony, Appendix B, Workpapers, "Perpetual License Increases"	All	Vendor Pricing, product names, product descriptions, Software publisher licensing information, 2022 recorded amounts, forecast 2025-2028 amounts.	Third-Party (Vendor) information, including vendor proprietary information such as Vendor Bid, Pricing Information and Vendor Proprietary Information subject to non-disclosure or confidentiality agreement, contract between the utility and third-party vendors that contain confidentiality clauses. Protected from disclosure under Gov't Code §§ 7927.300, 7925.000, 7927.705, 7924.510(f), 7927.605, 7922.000, 7922.540; 7930.205, Evid. Code § 1060; Civil Code § 3426 et seq.; 18 C.F.R. Part 358 (FERC Standards of Conduct, FERC Order 717); Cal. Code Regs. 17 § 95914(c)(1); SEC Rules 10b-5, 10b-5-1, 10b5-2.
SCE-17, Vol.1 Enterprise Technology GRC Rebuttal Testimony, Appendix B, Workpapers, "Digital and Process Transformation (DPT) Use Cases for 2023"	All	Use Case information including proprietary information on operational processes.	SCE proprietary and trade secret information, intellectual property or competitive data (e.g., noncore competitive growth opportunities, pricing forecast, supply and demand forecast) and other commercial records including project specific calculations, project costs, equipment cost; market-sensitive data; nonpublic business plans and strategies. Gov't Code §§ 7922.000; 7927.605(a); 7927.705.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on 4/12/2024 at West Covina, California.

DocuSigned by:
Rick Nanda
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Rick Nanda

Table IV-11: Historical Averages of Historical Recorded Cloud Costs
2022 Constant $000

Line	Category	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average Increases	Total Normalized Forecast
1	Historical Amount	10,444	12,817	21,441	18,822	25,002	28,108	36,491	39,861	43,994		
2	Year-to-Year Difference		2,373	8,624	(2,619)	6,180	3,106	8,383	3,370	4,133	4,194	58,733
3	Average Increase (2015-2022)		2,373	8,624	(2,619)	6,180	3,106	8,383	3,370		4,202	58,772
4	Average Increase (2020-2022)						3,106	8,383	3,370		4,953	62,150
5	Average Increase (2021-2023)							8,383	3,370	4,132	5,295	63,689
6	Cal Advocates Chosen Years: Year-to-Year Difference		2,373				3,106		3,370		2,950	53,361
7	SCE's Forecast											57,010

Table IV-12: Forecast Calculations Utilizing Historical 2015-2023 and 3 Year Averages
2022 Constant $000

Line	Category	2022	2023	2024	2025	2026	2027	2028
1	LYR + Average Increase Year-to-Year Difference	39,861	44,055	48,249	52,442	56,636	60,830	65,024
2	Normalized				58,733			
3	LYR + Average Increase (2015-2022)	39,861	44,063	48,266	52,468	56,671	60,873	65,076
4	Normalized				58,772			
5	LYR + Average Increase (2020-2022)	39,861	44,814	49,767	54,720	59,673	64,626	69,579
6	Normalized				62,150			
7	LYR + Average Increase (2021-2023)	39,861	45,156	50,451	55,746	61,041	66,336	71,631
8	Normalized				63,689			

Perpetual License Increase

Line	Description for Increase	2022 Recorded	Normalized (2025-2028)	2022 Recorded versus 2025 Normalized
1	Cap to O&M for licenses: GE Energy Management Services, Hewlett Packard, Open Link, OsiSoft, Itron, and others	0.00	20.02	20.02
2	SAP	2.68	10.93	8.25
3	Year-over-year vendor pricing increases	34.15	37.34	3.19
4	**Total**	**36.83**	**68.29**	**31.46**

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Pages B151-B195

Southern California Edison Company's 2025 General Rate Case
DECLARATION OF
RICK NANDA
REGARDING THE CONFIDENTIALITY OF CERTAIN DATA

I, Rick Nanda, declare and state:

1. I am Principal Manager, Application Services – Enterprise at Southern California Edison (SCE). Albert Ma, Vice President, Technology, Data, and Strategic Services delegated authority to me to sign this declaration. I have responsibility for overseeing and reviewing SCE's 2025 General Rate Case Application to the California Public Utilities Commission, Exhibit SCE 17, Volume 01, Enterprise Technology Rebuttal Testimony.

2. I am making this declaration in accordance with the instructions set forth in General Order 66D.

3. I have personal knowledge of the facts and representations herein and, if called upon to testify, could and would do so, except for those facts expressly stated to be based upon information and belief, and as to those matters, I believe them to be true.

4. Listed below are the data for which SCE is seeking confidential protection and the basis for SCE's confidentiality request.

Location of Confidential Data	Pages (if available)	Description of Information that is Confidential	Basis for SCE's Confidentiality Claim
SCE-17, Vol.1 Enterprise Technology GRC Rebuttal Testimony, Appendix B, Workpapers, "Cloud Increases"	All	Vendor Pricing, product names, product descriptions, Software publisher licensing information, 2022 recorded amounts, forecast 2025-2028 amounts.	Third-Party (Vendor) information, including vendor proprietary information such as Vendor Bid, Pricing Information and Vendor Proprietary Information subject to non-disclosure or confidentiality agreement, contract between the utility and third-party vendors that contain confidentiality clauses. Protected from disclosure under Gov't Code §§ 7927.300, 7925.000, 7927.705, 7924.510(f), 7927.605, 7922.000, 7922.540; 7930.205, Evid. Code § 1060; Civil Code § 3426 et seq.; 18 C.F.R. Part 358 (FERC Standards of Conduct, FERC Order 717); Cal. Code Regs. 17 § 95914(c)(1); SEC Rules 10b-5, 10b-5-1, 10b5-2.

Location of Confidential Data	Pages (if available)	Description of Information that is Confidential	Basis for SCE's Confidentiality Claim
SCE-17, Vol.1 Enterprise Technology GRC Rebuttal Testimony, Appendix B, Workpapers, "Perpetual License Increases"	All	Vendor Pricing, product names, product descriptions, Software publisher licensing information, 2022 recorded amounts, forecast 2025-2028 amounts.	Third-Party (Vendor) information, including vendor proprietary information such as Vendor Bid, Pricing Information and Vendor Proprietary Information subject to non-disclosure or confidentiality agreement, contract between the utility and third-party vendors that contain confidentiality clauses. Protected from disclosure under Gov't Code §§ 7927.300, 7925.000, 7927.705, 7924.510(f), 7927.605, 7922.000, 7922.540; 7930.205, Evid. Code § 1060; Civil Code § 3426 et seq.; 18 C.F.R. Part 358 (FERC Standards of Conduct, FERC Order 717); Cal. Code Regs. 17 § 95914(c)(1); SEC Rules 10b-5, 10b-5-1, 10b5-2.
SCE-17, Vol.1 Enterprise Technology GRC Rebuttal Testimony, Appendix B, Workpapers, "Digital and Process Transformation (DPT) Use Cases for 2023"	All	Use Case information including proprietary information on operational processes.	SCE proprietary and trade secret information, intellectual property or competitive data (e.g., noncore competitive growth opportunities, pricing forecast, supply and demand forecast) and other commercial records including project specific calculations, project costs, equipment cost; market-sensitive data; nonpublic business plans and strategies. Gov't Code §§ 7922.000; 7927.605(a); 7927.705.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on 4/12/2024 at West Covina, California.

DocuSigned by:
Rick Nanda
30416BF10FB64F5...

Rick Nanda

Cloud and Perpetual License Complete Analysis

1.099771 Rate of esclation from 2018 Constant to 2022 Constant for Non-Labor

		2018 Constant $					2022 Constant												
Line	Category	2019	2020	2021	2022	2023	2019	2020	Convert to 2021 Nominal	Constant Dollar Conversion from 2021 nominal $ to 2022 $	2021	PTYR Factor	2022	PTYR Factor	Conversion from nominal to 2022 Constant	2023	Total 2019-2022	Total 2019-2023	Forecast Normalized Amount (2021-2023)
1	**CLOUD**																		
2	Forecast 2021 GRC	13,584	15,316	18,130	18,720	20,628	14,939	16,844			19,939		20,588			22,686	72,310	94,996	21,071
3	Authorized*			19,159			12,729	12,891	1.047422	1.04998	21,071	1.06517	20,408	1.06101	0.9370	20,290	67,099	87,389	
4	Recorded						25,002	28,108			36,491		39,861			43,994	129,462	173,456	
5	Forecast vs. Recorded						10,063	11,264			16,552		19,273			21,308	57,152	78,460	
6	Authorized vs. Recorded						12,273	15,217			15,420		19,453			23,704	62,363	86,067	
7	**PERPETUAL LICENSE**																		
8	Forecast 2021 GRC	51,310	50,263	53,922	58,843	54,469	56,429	55,278			59,302		64,714			59,903	235,723	295,626	61,306
9	Authorized*			55,745			51,564	52,234	1.047422	1.04998	61,306	1.06517	59,377	1.06101	0.9370	59,034	224,482	283,516	
10	Recorded						40,898	38,643			36,253		36,825			39,233	152,619	191,852	
11	Forecast vs. Recorded						(15,531)	(16,635)			(23,049)		(27,889)			(20,670)	(83,104)	(103,774)	
12	Authorized vs. Recorded						(10,666)	(13,591)			(25,053)		(22,552)			(19,801)	(71,863)	(91,664)	
13	**PERPETUAL LICENSE & CLOUD**																		
14	Forecast 2021 GRC			72,052	77,563	75,097	71,369	72,122	-	-	79,241	-	85,302	-	-	82,590	308,033	390,622	82,377
15	Authorized*						64,293	65,125			82,377		79,785			79,324	291,581	370,904	
16	Recorded						65,900	66,751	-	-	72,744	-	76,686	-	-	83,227	282,081	365,308	
17	TOTAL Forecast 2021 GRC vs. Recorded						(5,469)	(5,371)			(6,497)		(8,616)			637	(25,952)	(25,314)	
18	TOTAL Authorized (Normalized) vs. Recorded						1,607	1,626			(9,633)		(3,099)			3,903	(9,500)	(5,596)	
19	% Difference (Authorized vs. Recorded)																-3.3%	-1.5%	

* 2019 and 2020 Authorized is from 2018 GRC

		2021 GRC, amounts in 2018 constant dollars				2021 GRC, amounts in 2022 constant dollars				2021 Recorded		
Reason	Publisher	2021	2022	2023	2021-2023 Normalized	2021	2022	2023	2021-2023 Normalized (A)	2021 Nominal	2021 in 2022 Constant $ (B)	Underspent in 2022 Constant $ (A-B)
Capitalized	SAP America Inc	4,834,284	4,834,285	11,469,216	7,045,928	5,316,605	5,316,606	12,613,511	7,748,908	1,224,530	1,285,704	(6,463,203)
Capitalized Total		**4,834,284**	**4,834,285**	**11,469,216**	**7,045,928**	**5,316,605**	**5,316,606**	**12,613,511**	**7,748,908**	**1,224,530**	**1,285,704**	**(6,463,203)**
non-renewal	Alertsite	145,200	145,400	145,600	145,400	159,687	159,907	160,127	159,907	-	-	(159,907)
non-renewal	Aspen	15,000	15,000	15,000	15,000	16,497	16,497	16,497	16,497	-	-	(16,497)
non-renewal	CA Inc.	32,200	32,300	32,400	32,300	35,413	35,523	35,633	35,523	-	-	(35,523)
non-renewal	Cloudera Inc.	47,500	47,500	47,500	47,500	52,239	52,239	52,239	52,239	-	-	(52,239)
non-renewal	Connixt, Inc.	60,000	60,000	60,000	60,000	65,986	65,986	65,986	65,986	-	-	(65,986)
non-renewal	Deque Systems, Inc.	25,100	25,100	25,100	25,100	27,604	27,604	27,604	27,604	-	-	(27,604)
non-renewal	FastMan Pty. Ltd.	54,457	55,546	56,657	55,553	59,890	61,088	62,310	61,096	-	-	(61,096)
non-renewal	GE Energy Management Services Inc ALCS	340,800	341,200	341,600	341,200	374,802	375,242	375,682	375,242	-	-	(375,242)
non-renewal	GE Energy Management Services Inc eDNA Maintenance	610,000	610,000	610,000	610,000	670,860	670,860	670,860	670,860	-	-	(670,860)
non-renewal	Infosys	300,000	300,000	300,000	300,000	329,931	329,931	329,931	329,931	-	-	(329,931)
non-renewal	Innovation Data Process	26,200	-	-	8,733	28,814	-	-	9,605	-	-	(9,605)
non-renewal	iText Software Corp	1,976	1,996	2,016	1,996	2,173	2,195	2,217	2,195	-	-	(2,195)
non-renewal	META 5 Inc	92,727	93,654	94,591	93,657	101,979	102,998	104,028	103,002	-	-	(103,002)
non-renewal	Open Text Inc.	287,215	287,215	287,215	287,215	315,871	315,871	315,871	315,871	-	-	(315,871)
non-renewal	Professional Flight Management (PFM)	16,391	16,883	17,389	16,888	18,026	18,567	19,124	18,572	-	-	(18,572)
non-renewal	Ricoh	6,400	6,500	6,600	6,500	7,039	7,149	7,258	7,149	-	-	(7,149)
non-renewal	RSA	119,700	119,800	119,900	119,800	131,643	131,753	131,863	131,753	-	-	(131,753)
non-renewal	RSA	12,100	12,200	12,300	12,200	13,307	13,417	13,527	13,417	-	-	(13,417)
non-renewal	SailPoint Technologies	42,189	42,189	42,189	42,189	46,398	46,398	46,398	46,398	-	-	(46,398)
non-renewal	Software FX	15,788	15,788	15,788	15,788	17,363	17,363	17,363	17,363	-	-	(17,363)
non-renewal	Solarwinds, Inc	26,000	26,200	26,400	26,200	28,594	28,814	29,034	28,814	-	-	(28,814)
non-renewal	Sunbird	900	1,000	1,100	1,000	990	1,100	1,210	1,100	-	-	(1,100)
non-renewal	Syncfusion	10,460	-	-	3,487	11,504	-	-	3,835	-	-	(3,835)
non-renewal	Tableau Software	81,200	81,300	81,400	81,300	89,301	89,411	89,521	89,411	-	-	(89,411)
non-renewal	Talend Inc	-	-	-	-	-	-	-	-	-	-	-
non-renewal	Unitech Systems	78,300	78,400	78,500	78,400	86,112	86,222	86,332	86,222	-	-	(86,222)
non-renewal	Veritas	132,750	132,900	133,050	132,900	145,995	146,160	146,325	146,160	-	-	(146,160)
non-renewal	VMWare	14,100	14,200	14,300	14,200	15,507	15,617	15,727	15,617	-	-	(15,617)
non-renewal	ZOHO Corporation	23,656	23,656	23,656	23,656	26,016	26,016	26,016	26,016	-	-	(26,016)
non-renewal Total		**2,618,309**	**2,585,927**	**2,590,251**	**2,598,162**	**2,879,540**	**2,843,927**	**2,848,682**	**2,857,383**	**-**	**-**	**(2,857,383)**
Total		**7,452,593**	**7,420,212**	**14,059,467**	**9,644,090**	**8,196,145**	**8,160,534**	**15,462,194**	**10,606,291**	**1,224,530**	**1,285,704**	**(9,320,586)**

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Ignio Software as a Service (SaaS) conversion	Digital	This effort is to move to a SaaS solution due to discontinuation of on premise support. As the vendor has ended support for the on premise version of Ignio, this effort is to migrate to a cloud solution that is supported by the vendor. If we do not do this work, we will lose vendor support that could introduce risks and instability to the platform.	$ -	$ 94,232	$ 92,385	$ 354,367	$ 88,797	$ 157,445	$ 157,445

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Pega Business Process Management (BPM) platform Upgrade for centralized env.	Digital	This effort is centralization to streamline operational support. The current applications maintain separate and independent environments which increase the work required to maintain the environments. By centralizing or combining the environments into shared environments this will reduce cost of maintaining and supporting separate environments.	$ -	$ 188,464	$ 184,769	$ 181,146	$ 177,594	$ 182,993	$ 182,993

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Pega BPM platform Upgrade for GIPT	Digital	This effort is to upgrade to current version to avoid instability and reliability issues due to old version. As the vendor is ending support for the version used by GIPG, this effort is to upgrade to a version supported by the vendor. If we do not do this work, we will lose vendor support that could introduce risks and instability to the platform.	$ -	$ 75,386	$ 73,908	$ 72,458	$ 71,038	$ 73,197	$ 73,197

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Pega BPM platform Upgrade for Service Transition, Planning &Support (STPS) & Hardware (H/W) Procurement	Digital	This effort is to upgrade to current version to avoid instability and reliability issues due to old version. The current applications maintain separate and independent environments which increase the work required to maintain the environments. By centralizing or combining the environments into shared environments this will reduce cost of maintaining and supporting separate environments.	$ -	$ -	$ 92,385	$ -	$ 88,797	$ 45,295	$ 45,295

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Citizen Development - On-Going Support	Digital	This effort is support for citizen development guardrails to mitigate risks This effort is to define and implement the necessary controls to ensure Citizen Developers do not introduce risks or instability when implementing new products.	$ -	$ 94,232	$ 92,385	$ 90,573	$ 88,797	$ 91,497	$ 91,497
Ignio SaaS extend for CSRP	Digital	This initiative will include extending the Ignio capabilities to CSRP. This effort is to implement the module of Ignio that is compatible with CSRP allowing the team to increase efficiencies by automating manual efforts.	$ -	$ -	$ -	$ 760,622	$ -	$ 190,155	$ 190,155

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Uipath Platform Upgrade	Digital	This effort is to upgrade to current version to avoid instability and reliability issues due to old version. Application refreshes are required to maintain the necessary vendor support, the UiPath platform has to be upgraded on a recurring basis to avoid losing vendor support and causing instability on the platform.	$ -	$ 103,655	$ -	$ 99,630	$ -	$ 50,821	$ 50,821
Application Lifecycle Management (ALM) Octane Refresh	Digital	This effort is an ALM Octane major version refresh. Octane refreshes are required to maintain the vendor support and stay current with patches to avoid instability and risks.	$ -	$ 235,581	$ 230,961	$ -	$ 221,993	$ 172,134	$ 172,134

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
DevOps Acceleration - DataPower/API Gateway Pattern	Digital	This effort is to develop patterns to leverage DevOps pipelines to increase efficiencies of deployments. Develop a DevOps pattern and connectivity to allow for automated deployments. Without this work, will be unable to achieve the efficiencies by using automated deployments.	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Support Cost per year - 40 DevOps pipelines	Digital	This is to maintain 40 DevOps pipelines to allow for automated deployments by the application teams. Without this the application teams will need to continue with the manual deployment efforts.	$ -	$ 141,348	$ 184,769	$ 181,146	$ 221,993	$ 182,314	$ 182,314

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Enterprise DevOps Tools Refresh	Digital	This effort is enterprise DevOps tools major version refreshes (Jenkins, SonarQube, Nexus) To maintain the vendor support and stay current with patches to avoid instability and risks.	$ -	$ 188,464	$ -	$ 181,146	$ -	$ 92,403	$ 92,403
Value Stream Management Tool Refresh	Digital	This work is to maintain and update the Value Stream Management tool that allows the tracking by business process or value stream. Without this effort, the planning teams will need to continue with the manual processes and may miss value added opportunities.	$ -	$ 188,464	$ 184,769	$ -	$ 177,594	$ 137,707	$ 137,707

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
AppCenter administration Infrastructure	Digital	Microsoft Visual Studio AppCenter is used to manage and deploy mobile applications. Without this effort, automated processes would need to be reverted to manual steps to complete the tasks. The forecast is for Azure resources for the AppCenter administration scripts.	$ -	$ 9,423	$ 9,238	$ 9,057	$ 8,880	$ 9,150	$ 9,150
Apple Developer License	Digital	This is to pay Apple for the rights to use their Developer APIs and list our products in the store. If we are unable to use the Developer APIs from Apple then it will restrict our ability to offer a streamlined development and deployment methods for products.	$ -	$ 4,712	$ 4,619	$ 4,529	$ 4,440	$ 4,575	$ 4,575

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Augmented Reality/Virtual Reality (AR/VR) Developer Kit Licenses - Apple	Digital	This item is to stand up support, buy any licensed software we would need and bring these devices into SCE IT. This would also be to develop the capability to support Meta, Apple, and Microsoft devices. Without this item the cost for purchasing the AR/VR devices may not be fully realized.	$ -	$ 9,423	$ 9,238	$ 9,057	$ 8,880	$ 9,150	$ 9,150
Augmented Reality/Virtual Reality (AR/VR) Developer Kit Licenses - Meta	Digital	This item is to stand up support, buy any licensed software we would need and bring these devices into SCE IT. This would also be to develop the capability to support Meta, Apple, and Microsoft devices. Without this item the cost for purchasing the AR/VR devices may not be fully realized.	$ -	$ 9,423	$ 9,238	$ 9,057	$ 8,880	$ 9,150	$ 9,150

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Augmented Reality/Virtual Reality (AR/VR) Developer Kit Licenses - Microsoft	Digital	This item is to stand up support, buy any licensed software we would need and bring these devices into SCE IT. This would also be to develop the capability to support Meta, Apple, and Microsoft devices. Without this item the cost for purchasing the AR/VR devices may not be fully realized.	$ -	$ 9,423	$ 9,238	$ 9,057	$ 8,880	$ 9,150	$ 9,150

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Cloud based Mobile test platform - Unified Functional Testing (UFT) Mobile/Other SaaS : Cloud-Hosted Devices Solution	Digital	The Micro Focus® UFT Mobile cloud devices lab extension allows users to include real devices hosted privately in the cloud by Micro Focus Software as a Service. This enables users to interact with a larger selection of devices and achieve maximum device coverage, without having to deal with procuring, configuring, and maintaining all of the devices needed for testing.	$ -	$ 235,581	$ -	$ -	$ 221,993	$ 114,393	$ 114,393

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Swift Migration - CraftComm	Digital	This effort is to migrate code base from React Native (RN) to Swift and move from RN based libraries to Swift based native libraries. We need to drop support for Android and start supporting Apple / iOS devices only. This work would be to do this transition and eliminate the technical debt associated with the Android platform. Without this effort, costs will continue to be incurred for Android devices.	$ -	$ 103,655	$ -	$ -	$ -	$ 25,914	$ 25,914

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Micro Focus® UFT Mobile (UFTM) device refresh	Digital	This effort is to upgrade UFTM connected devices. This item is to transition test scripts over to Continuous Integration pipeline scripts that use Apple's cloud test environment instead of having to pay and continue to support our own.	$ -	$ -	$ 27,715	$ -	$ 72,208	$ 24,981	$ 24,981
Micro Focus® UFT Mobile (UFTM) License renewal	Digital	This effort is the renewal of UFTM Enterprise license & support. This item is to transition test scripts over to Continuous Integration pipeline scripts that use Apple's cloud test environment instead of having to pay and continue to support our own.	$ -	$ -	$ 600,500	$ -	$ 310,790	$ 227,822	$ 227,822

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Micro Focus® UFT Mobile (UFTM) upgrade	Digital	This effort is the upgrade UFTM to major version. This item is to transition test scripts over to Continuous Integration pipeline scripts that use Apple's cloud test environment instead of having to pay and continue to support our own.	$ -	$ 94,232	$ -	$ 90,573	$ -	$ 46,201	$ 46,201
Citizen Development - Power Platform ongoing governance/operations	Digital	This would be to support and fund staff and efforts to support the Power Platform for Citizen Development. With this item, the proper governance and operations would not be in place to mitigate risks and ensure stability of the platform.	$ -	$ 254,427	$ 249,438	$ 244,547	$ 239,752	$ 247,041	$ 247,041

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Custom applications – ACDC, C3 Small Tools ongoing operational support and enhancements	Digital	App supporting the capture of asset information via a bar code scan, currently used for RFI installation C3 Custom Mobile App supporting automated updates of estimated restoration times for outages from the field Small Tools App developed on Power Apps to electronically capture small tools that are taken out of the tool room and person who took them This effort is to establish support for applications used to capture asset information, estimate restoration times and ensuring the necessary equipment is available.	$ -	$ -	$ -	$ -	$ -	$ -	$ -

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Subscription Custom applications subscription costs	Digital	This item is related to the subscription costs for ACDC and C3 applications. Without this item, the processes described above would need to revert to manual efforts consuming more resources.	$ -	$ -	$ -	$ -	$ -	$ -	$ -

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Custom applications – Inspect App, Inspect Cam ongoing operational support and enhancements	Digital	Cam - Custom Mobile IOS App Supporting Distribution Ground Inspection VoltVOLT is a web-based annotation, data labeling, and categorization tool leveraging an open-source image annotation engine (i.e. Microsoft VoTT) used for digitally labeling electric Transmission and Distribution assets. VOLT acts as a centralized repository for annotations for the purposes of enabling easier management and training of Artificial Intelligence / Machine Learning models These applications automate the asset inspection and	$ -	$ 16,491	$ 16,167	$ 15,850	$ 15,539	$ 16,012	$ 16,012

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Analytics Community for Excellence (ACE) Governance	Data Management	Without architectural guidelines and governance, the rapidly expanding data and analytics landscape will end up with suboptimal design patterns, tool and data duplication and lack of cost control. The premise of moving to cloud platforms is to have better cost structure and faster development for data and analytics use cases and this is achievable only with constant and dedicated governance.	$ -	$ 141,348	$ 138,577	$ 135,860	$ 133,196	$ 137,245	$ 137,245

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Citizen Development Governance	Digital	Without adequate citizen development guidelines and governance, the multitude of self-service platforms and workloads will quickly expand and become difficult to control both in terms of duplication and costs. It will also delay the movement of costly IT workloads to business users - both allowing for faster delivery as well as lower costs. Most use cases also run the risk of being orphaned in terms of support without adequate guidance provided to end users.	$ -	$ 329,813	$ 138,577	$ 135,860	$ 133,196	$ 184,361	$ 184,361

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Data Quality and Data Governance	Data Management	This effort is to build data quality and governance. Without adequate data quality checks and reconciliations being built, there is a major risk of not being able to service regulatory reporting requirements for regulatory bodies as well as SCE's partners.	$ -	$ 169,618	$ 166,292	$ 163,032	$ 79,917	$ 144,715	$ 144,715
Integration Center of Excellence (ICOE) Governance	Data Management	Modernization & maintenance of the ICOE (Integration Center of Excellence) Without this modernization effort, tools, pattern, architecture governance and operations will be negatively impacted.	$ -	$ 28,270	$ 27,715	$ 27,172	$ 26,639	$ 27,449	$ 27,449

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Power Business Intelligence (BI) Expansion & Governance	Data Management	Not upgrading or expanding will cause the platform to fall out of support and increase risks of unplanned downtimes causing widespread reporting outage across the organization	$ -	$ 452,315	$ 461,923	$ 298,891	$ -	$ 303,282	$ 303,282
SAS Self Service Governance	Data Management	There are delays in data sharing today with third parties via Managed File Transfer (MFT) transfer via the Legacy route. Direct data sharing will lead to better customer satisfaction and less lead time to obtain data from SCE.	$ -	$ 329,813	$ 69,288	$ 67,930	$ -	$ 116,758	$ 116,758

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Customer Usage Data (CUD) - Improve data quality in IT landscape and help institutionalize data quality governance	Data Management	Root Cause Analysis (RCA) and remediation if not implemented, will cause the issue to reappear adding cost of investigation and fixes multiple times and also possible penalties as financial risk. The measure of issue has been anecdotal without scorecard, the cost of multiple RCAs and data fixes has not eliminated the issues, it has been always adding to the O&M cost pressure	$ -	$ -	$ -	$ -	$ -	$ -	$ -

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Salesforce Platform	Salesforce	This is for support of the Salesforce platform which hosts critical applications to our business. Unavailability and degraded performance on this platform will impact applications that support activities for Wildfire. As well there other applications on the platform and their business processes would not be able to work, such as: Arbora (Vegetation Management), Inspectforce (Inspections of T&D assets), WorkIt and DCB (Work Management).	$ -	$ 1,512,641	$ 1,482,982	$ 1,453,904	$ 1,425,396	$ 1,468,731	$ 1,468,731

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Post Digital Self Service (DSS) transition to Operations Stabilization	SCE.com Digital Self Service	Investing in Digital Self Service allows reduces our customers dependency on the customer contact center.	$ -	$ 1,130,787	$ 1,108,615	$ 1,086,877	$ 1,331,957	$ 1,164,559	$ 1,164,559
Post CSRP additional pre-paid capacity	Billing and Usage Systems (Industry Specific Solution for Utilities)	High priority key functional improvements that are intended to expedite transaction and reduce manual processing. If not executed, manual work arounds will be required leading to slower response to customers	$ -	$ 942,322	$ 923,845	$ 905,731	$ 887,971	$ 914,967	$ 914,967
Unbilled Revenue/Delayed Billing & Active Collections	Billing and Usage Systems (Industry Specific Solution for Utilities)	This effort is support for Active Collection restart. Potential impact to SCE revenue due to delay in collecting payments from customers, if not executed.	$ -	$ 1,069,197	$ 816,578	$ 604,727	$ 829,934	$ 830,109	$ 830,109

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
CS: Industry Specific Solution for Utilities (ISU) Data Archiving	Billing and Usage Systems (Industry Specific Solution for Utilities)	Data archiving ensures we do not run out of table space. Running out of space would cause an unplanned outage which would impact the organization and our SCE customers	$ -	$ 494,719	$ 499,569	$ 504,467	$ 509,413	$ 502,042	$ 502,042
Making Front Office build packages compatible with GitHub advance security	GitHub Security Compatability	This tool allows us to efficiently store our source code, including version history. It is an industry standard. SCE's Front Office systems include customer facing systems such as SCE.com and Customer Call Center applications	$ -	$ 141,348	$ 138,577	$ 135,860	$ 133,196	$ 137,245	$ 137,245

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Making Back Office build packages compatible with GitHub advance security	GitHub Security Compatability	This tool allows us to efficiently store our source code, including version history. It is an industry standard. SCE's Back Office includes metering, billing, payment, and collections.	$ -	$ 141,348	$ 138,577	$ 135,860	$ 133,196	$ 137,245	$ 137,245
Max Attention SAP Enroll Custom Code	Billing and Usage Systems (Industry Specific Solution for Utilities)	Helps minimize downtime, and to resolve issues in a timely manner. This service helps us reduce unplanned downtime for the systems our customers rely on.	$ -	$ 376,929	$ 369,538	$ 362,292	$ 355,189	$ 365,987	$ 365,987

App Refresh O&M Projects New Work									
O&M Project Name	**New Work Category**	**Impacts/Justification**	**2021 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
SAP Archiving	Billing and Usage Systems (Industry Specific Solution for Utilities)	This project is to build a business aligned data archival capability. This will improve the ability to service customers, reduce the cost of storage, improve operational and systems efficiency and decrease compliance and regulatory risk, without impacting operations. If not done all of these benefits will not be realized by SCE and their customers.	$ -	$ 437,966	$ 923,845	$ 906,431	$ 1,331,957	$ 900,050	$ 900,050
		Total Costs	**$ -**	**$ 9,755,053**	**$ 9,476,222**	**$ 9,237,709**	**$ 9,348,000**	**$ 9,454,246**	**$ 9,454,246**

App Refresh O&M Projects 2022 Recorded			
Line No.	**Project Name**	**Work Category**	**2022 Recorded Costs**
1	SMOO_Team Connect Legal (TCL)	Typical	$ 784
2	SMOO_OPEN TEXT Support (O&M)	Typical	$ 12,000
3	SMOO Infra-To create Limit PO.No charges	Typical	$ 83,538
4	SMOO-APPS ENT Limits PO set up only	Typical	$ (1,026)
5	SMOO_Mainframe Decommission Efforts	Anomalous	$ 122,081
6	NERC CIP SharePoint AccessAdministration	Typical	$ 90,625
7	SMOO: CS Portfolio Project Support Servi	Typical	$ 318,468
8	SMOO STPS Digitization	Typical	$ 13,950
9	SMOO iVOS Upgrade - MSH Renewal	Typical	$ 49,764
10	SMOO: FRM Automation Development	Typical	$ 44,197
11	SMOO IT Audit Remediation Support	Typical	$ 164,750
12	SMOO_IBMPowerSystem Migration Assessment	Typical	$ 24,526
13	SMOO: UBR Interim Enhanced Support 2021	Typical	$ 100
14	SPD - Track 1 - Mainframe CS Application	Anomalous	$ 1,413,272
15	SPD - Track 2 – Non-Mainframe CS Applica	Anomalous	$ 655,843
16	SPD - Track 3 – Mainframe Non-CS Applica	Anomalous	$ 635,349
17	SPD - Track 4 – Mainframe Operations and	Anomalous	$ 739,580
18	SMOO_DR Observations	Typical	$ 215,835
19	SMOO OTDS Upgrade	Typical	$ 289,850
20	SMOO_Cloud CapEx Assessment	Typical	$ 450,000
21	Snowflake Platform Support Transition	Typical	$ 56,733
22	SMOO_EHS Environmental Compliance Mig	Typical	$ 102,485
23	SMOO PowerBI Capacity Expansion	Typical	$ 97,464
24	SMOO Winshuttle Studio Upgrade	Typical	$ 339,575
25	SMOO_CS Data Quality Initiative	Typical	$ 93,035
26	SMOO - HRSP Upgrade 2022	Typical	$ 280,705
27	AppRat Azure Cloud platform optimization	Anomalous	$ 148,577
28	SMOO AppRat SAP Data Management 2022	Anomalous	$ 367,530
29	SMOO AppRat PPM Decomm 2022	Anomalous	$ 112,515
30	SMOO AppRat CDM Dashboard Portal Decommi	Anomalous	$ 21,530
31	SMOO AppRat Decomm Initiatives	Anomalous	$ 512,554
32	SMOO-AppRat SCE Data Archival Assessment	Anomalous	$ 339,300
33	SMOO-Data Intelligence Foundation	Typical	$ 360,000
34	SMOO HANA NSE	Typical	$ 100,973
35	SMOO RCMS Flow Plan LicenseO&M	Typical	$ 2,720
36	SMOO SNowflake Credits 2022	Typical	$ 800,000
37	SMOO DevOps Oracle PL/SQL & API Connect	Typical	$ 265,965
38	SMOO Push Notification As A Service	Typical	$ 239,508
39	SMOO Re-Usable Mobile Components	Typical	$ 207,020
40	SMOO BOBJ Upgrade O&M	Typical	$ 370,000
41	SMOO Power Platform Governance (O&M)	Typical	$ 273,381
42	SMOO GRID Data to HANA O&M	Typical	$ 60,000
43	SMOO CRO Cancellation Process O&M	Typical	$ 267,356
44	SMOO TnD Training Region Stablization-M1	Typical	$ 85,000
45	Miscelleneous Overhead	Typical	$ 55,411
46	Adjustments - GRC/FERC	Typical	$ (18,499)
47	**Total Costs**		**$ 10,864,324**

App Refresh O&M Projects 2023 Recorded		
Line No.	**Project Names**	**2023 Constant**
1	SMOO: CS Portfolio Project Support Servi	$198,490
2	SMOO STPS Digitization	$4,704
3	SMOO OTDS Upgrade	$559
4	SMOO PowerBI Capacity Expansion	$227,837
5	SMOO Winshuttle Studio Upgrade	$4,471
6	SMOO_CS Data Quality Initiative	$23,523
7	SMOO AppRat SAP Data Management 2022	$95,298
8	SMOO AppRat Decomm Initiatives	$161,567
9	SMOO SM OEC_DM support (PO setup only)	$13,119
10	SMOO-Data Intelligence Foundation	$22,135
11	SMOO HANA NSE	$9,216
12	SMOO RCMS Flow Plan LicenseO&M	$5,333
13	SMOO DevOps Oracle PL/SQL & API Connect	$196
14	SMOO Push Notification As A Service	$1,125
15	SMOO Re-Usable Mobile Components	$2,184
16	SMOO BOBJ Upgrade O&M	$126,217
17	SMOO Power Platform Governance (O&M)	$784
18	SMOO GRID Data to HANA O&M	$112,756
19	SMOO Ventiv CMS/Content Mgmt Mod Annual	$59,013
20	SMOO TnD Afaria Replacement Assessment	$44,118
21	SMOO – C3 & ACDC Efforts O&M	$54,231
22	SMOO Removal of SHA1 algorithm O&M	$90,538
23	SMOO-GIPT Upgrade-C&PS	$241,056
24	SMOO InfoPedia Xchange to Power BI	$43,796
25	SMOO_CS_DRUPAL_UPGRADE_Infosys	$176,801
26	Snowflake Unauthorised Usage Analytics	$115,773
27	SMOO_ Flexera Agent Upgrade	$156,767
28	SMOO HRSP Upgrade 2023	$315,576
29	SMOO Genetec Upgrade(O&M)	$312,680
30	SMOO AZURE For TPP And UGD Tracker	$14,996
31	SMOO AZURE NDP Tracker	$9,359
32	CSRP Enhancement Work	$2,172,480
33	CSRP UBR Interim Enhanced Support	$232,267
34	Miscellaneous Overhead	$26,073
35	Adjustments - GRC/FERC	($9,602)
36	**Total 2023 Costs**	**$5,065,436**

App Refresh C&PS New Work									
Initiative Name	**New Work Category**	**Impacts/Justification**	**2022 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Salesforce Professional Services	Salesforce	from the vendor for consulting on the Salesforce platform which hosts critical applications to our business. If there are issues that cannot be addressed by MPSs then there could be unavailability and degraded performance on this platform which will impact applications that support activities for Wildfire. As well there other applications on the platform and their business processes would not be able to work, such as: Arbora (Vegetation Management), Inspectforce (Inspections of T&D assets), WorkIt and	$ -	$ 301,543	$ 295,631	$ 289,834	$ 284,151	$ 292,790	$ 292,790

App Refresh C&PS New Work									
Initiative Name	**New Work Category**	**Impacts/Justification**	**2022 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Salesforce Professional Services	Salesforce	from the vendor for consulting on the Salesforce platform which hosts critical applications to our business. If there are issues that cannot be addressed by MPSs then there could be unavailability and degraded performance on this platform which will impact applications that support activities for Wildfire. As well there other applications on the platform and their business processes would not be able to work, such as: Arbora (Vegetation Management), Inspectforce (Inspections of T&D	$ -	$ 301,543	$ 295,631	$ 289,834	$ 284,151	$ 292,790	$ 292,790

App Refresh C&PS New Work									
Initiative Name	**New Work Category**	**Impacts/Justification**	**2022 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Community Choice Aggregation (CCA) - Mass Enrollment Testing/ESP EDI Testing	CCA	CCA mass enrollment is critical to the company and the enrollments are mandated by the CPUC. This funding will ensure we have enough resources to meet the demand set by the enrollment schedule.	$ -	$ 696,557	$ 623,107	$ 560,601	$ 488,935	$ 592,300	$ 592,300
Data Quality Initiative	Data Quality	The data quality rules improve overall data quality for third party data sharing, and reduces the amount of manual effort needed to perform data corrections.	$ 212,113	$ 339,707	$ 343,038	$ 336,311	$ 339,609	$ 339,666	$ 127,553

App Refresh C&PS New Work									
Initiative Name	**New Work Category**	**Impacts/Justification**	**2022 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Data Quality	Data Quality	Data quality is required to support major asset types and enhance the systems, processes and governance required to properly capture and maintain data moving forward. This includes prioritization, and remediating priority asset types (including high fire poles and wires). Improve overall data quality and reduce the amount of manual effort needed to perform data corrections.	$ -	$ 659,626	$ 646,692	$ 634,012	$ 621,580	$ 640,477	$ 640,477

App Refresh C&PS New Work									
Initiative Name	**New Work Category**	**Impacts/Justification**	**2022 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
SNOWFLAKE Professional Services	Snowflake	Snowflake professional services is required to mitigate platform and migration issues . It will have delay on Hadoop decommission plan , building new applications and data sharing requirements .	$ -	$ 94,232	$ 92,385	$ 128,266	$ 125,751	$ 110,158	$ 110,158
Hydstra Professional Services	Hydstra	This is a third party product which gathers data from the Hydro-electric control systems. This proprietary application requires vendor support which cannot be provided by our Managed Services Providers.	$ -	$ 63,088	$ 63,707	$ 64,332	$ 64,962	$ 64,022	$ 64,022

App Refresh C&PS New Work									
Initiative Name	**New Work Category**	**Impacts/Justification**	**2022 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Cloud 4 Customer (C4C) Quarterly Refresh	SAP C4C	Quarterly feature release testing, data correction, and integration remediation of the SAP Cloud for Customer Utilities (C4C) solution. C4C is designed for utility companies to enhance their customer engagement, streamline processes, and optimize call center operations.	$ -	$ 400,487	$ 404,413	$ 408,378	$ 412,382	$ 406,415	$ 406,415
Intelligent Online Analytical Processing (IOLAP) Professional Services - Snowflake Migration	Snowflake	Required to establish standards & governance, provide consultation and control on projects/ enhancements in data and analytics space to ensure quality, design efficiency and operational effectiveness	$ -	$ 141,348	$ 176,270	$ 172,813	$ 207,118	$ 174,387	$ 174,387

App Refresh C&PS New Work									
Initiative Name	**New Work Category**	**Impacts/Justification**	**2022 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
TIBCO EBX-MDM (Master Data Management) tool	MDM Tool	TIBCO EBX-MDM is a Master Data Management software. Delay in upload of Contracts, Resource, Meter and Locations master data will impact settlement process and EPM users.	$ -	$ 56,539	$ 55,431	$ 54,344	$ 53,278	$ 54,898	$ 54,898

App Refresh C&PS New Work									
Initiative Name	**New Work Category**	**Impacts/Justification**	**2022 Recorded**	**2025**	**2026**	**2027**	**2028**	**Normalized Forecast (2025-2028)**	**Total 2025 Increase**
Tagetik Professional Services	Tagetik	This is a vendor that supports COBRA process. The Consolidated Omnibus Budget Reconciliation Act (COBRA) gives workers and their families who lose their health benefits the right to choose to continue group health benefits provided by their group health plan for limited periods of time under certain circumstances such as voluntary or involuntary job loss, reduction in the hours worked, transition between jobs, death, divorce, and other life events.	$ -	$ 150,489	$ 147,538	$ 144,645	$ 141,809	$ 146,120	$ 146,120
		Total Costs	**$ 212,113**	**$ 2,903,616**	**$ 2,848,211**	**$ 2,793,536**	**$ 2,739,575**	**$ 2,821,234**	**$ 2,609,121**

App Refresh C&PS 2022 Recorded			
Line No.	**C&PS Effort Name**	**2022 Recorded Costs**	
1	Professional Services - Power Plant	$	315,389
2	Staff Augmentation - Service Management	$	22,668
3	Staff Augment-Appl Srvc (CS/PS/SONGS/IT)	$	332
4	Staff Augment-Appl Srvc (ENT/IA)	$	425,063
5	SMOO - UI Planner Project (C&PS)	$	32,150
6	Staff Augment-Appl Srvc(T&D,GM,&Wildfir)	$	77,497
7	SMOO_Staff AUG-Appl Svcs T&D/GM/WF	$	(1,227)
8	SMOO_Open Link Financial 2021(O&M)	$	135,442
9	SMOO - LENS Professional Services	$	5,178
10	SMOO - SEMT Professional Services	$	149,988
11	SMOO - SBS Professional Services	$	(1,997)
12	CS Data Quality IT Support - 2022	$	234,744
13	SMOO SWM O&M Work - 2022	$	81,459
14	SMOO - CMS_GoMocha_Professional services	$	49,270
15	SMOO Cloudera RSA Services	$	110,496
16	SMOO_General Chat Bot	$	12,793
17	SMOO-ALM Octane Upg 16.0.2	$	111,833
18	SMOO ISU Training Sys Refresh Infra	$	15,890
19	SMOO ISU Training Sys Refresh InfoSys	$	82,906
20	SMOO-ALM Octane Upg 16.0.2 Merito	$	23,000
21	SMOO_T&D Region Change 2022	$	216,530
22	SMOO MCG Professional Services	$	195,000
23	SMOO DPT to 05 BOTS Transition	$	17,198
24	SMOO UiPath Upg to 2021.10.x	$	38,722
25	SMOO ISU Training Sys Refresh SW	$	11,962
26	SMOO T&D Map3d Enhancements	$	119,370
27	SMOO OEC Items 6170 and 870	$	117,960
28	SMOO - SBS Support 2023	$	200,000
29	UiPath DPT Pilot Transition – Phase 2	$	39,225
30	Miscellaneous (Consultant Services)	$	197,431
31	Miscellaneous Overhead	$	16,119
32	Adjustments - GRC/FERC	$	(8,813)
33	**Total Costs**	**$**	**3,043,578**

App Refresh C&PS 2023 Recorded		
Line No.	**C&PS Effort Name**	**2023 Constant**
1	Professional Services - Power Plant	$460,607
2	Staff Augmentation - Service Management	$34,652
3	Staff Augment-Appl Srvc (ENT/IA)	$368,336
4	Staff Augmentation - Process Integration	$45,147
5	SMOO - UI Planner Project (C&PS)	$19,608
6	Staff Augment-Appl Srvc(T&D,GM,&Wildfir)	$109,349
7	SMOO-ENT Talend Professional Services	$91,344
8	SMOO - LENS Professional Services	$2,769
9	SMOO - CMS_GoMocha_Professional services	$142,221
10	SMOO-ALM Octane Upg 16.0.2	$92,702
11	SMOO ISU Training Sys Refresh Infra	$19,863
12	SMOO ISU Training Sys Refresh InfoSys	$56,926
13	SMOO OEC Items 6170 and 870	$80,424
14	SMOO - SEMT Professional Services	$134,283
15	Customer Service Data Quality 2023	$285,090
16	SMOO-Prgm & Financial Mgmt Svc-C&PS CR&B	$171,672
17	SMOO T&D OCM for Trackers Migration	$149,443
18	SMOO - OpenLink Professional Svcs	$132,354
19	SMOO ENT Talend C&PS	$41,667
20	SMOO - Ignio SaaS Migration Svc - C&PS	$63,677
21	SMOO_SPIDA_TIM/TAM Decom	$85,129
22	SMOO - IOLAP Professional Services	$173,825
23	SMOO-ENT-Salesforce Platform Contract	$614,045
24	SMOO-New DevOps Patterns Cyber Review	$5,435
25	SMOO-SailPoint for GitHub & Octane C&PS	$141,544
26	SMOO-GIPT Upgrade-C&PS	$65,631
27	SMOO M365 Copilot - C&PS	$355,054
28	SMOO - SBS Support 2024	$98,040
29	SMOO UFT Digital Lab 2023 upgrade	$48,588
30	SonarQube	$49,036
31	SMOO IPC Professional Services - SCE Data Ctr	$8,749
32	SMOO Administrative Support Services	$17,777
33	SMOO Ventiv Technology	$43,120
34	SMOO Consultant Services	$46,675
35	Miscellaneous (Consultant Services)	$72,203
36	Miscellaneous Overhead	$35,189
37	Adjustments - GRC/FERC	($16,010)
38	**Total Costs**	**$4,346,164**

Additional Functionalities for Perpetual License Capital Selected Projects

SAP/Open Text

- SAP Extended ECM by OpenText is a software solution that integrates with SAP systems to enhance enterprise content management capabilities. Key functionalities supports Document Management, Content Lifecycle Management, Integrations with SAP, Workflow and Collaboration workflows, Information Retrievals and helps maintains Compliance and Governance.

- This upgrade will also migrate the functionalities to the cloud.

Github

- GitHub is a software used for version control for code development, that provides SCE with the flexibility to securely host in an SCE environment or use GitHub's cloud environment. Key features are access controls for managing permissions, authentication connectors, and more.
- GitHub Advanced Security is an add-on to GitHub Enterprise that provides additional security features. These features include:
    - Code scanning: This feature searches for potential security vulnerabilities and coding errors in your code using CodeQL or a third-party tool.
    - CodeQL CLI: This allows you to run CodeQL processes locally on software projects or to generate code scanning results for upload to GitHub Enterprise Cloud.

HP/Merito Products

- Micro Focus is the publisher and maintenance provider for LoadRunner Enterprise, Appli cation Lifecycle
  Management Octane Pro, and UFT Mobile Center software applications.

- The HP products provide various new testing functions:
    - HP ALM is a test management tool that
      provides test case and test execution management functions. The upgrade will increase the usage rights from Americas to Global for these licenses.
    - HP PC (aka LRE) provides performance/load testing simulations of up to a large number of concurrent users. Currently SCE is limited to 5 protocol technologies in varying quantities, new model will provide 12 protocol technologies
    - HP UFT is a test automation tool which helps to automate software testing. The upgrade will provide additional capabilities to functionally test mobile applications and devices.
    - ALM Octane supports agile projects for user stories, testing and other agile activi ties. A portion of current licenses will be migrated to the Octane enterprise tool.

App Refresh Capital New Work									
Application Name	**New Work Category**	**Application Description**	**Business Impact of not performing the effort**	**2022 Recorded**	**2025 Refresh Cost**	**2026 Refresh Cost**	**2027 Refresh Cost**	**2028 Refresh Cost**	**Total 2025 Increase**
Data Strategy	Data Management	Periodic architectural exercise as part of Analytics Community for Excellence (ACE) governance	New data ingestion, ETL, modeling, reporting and visualization patterns and tool implementations. Not devising and implementing a coherent, uniform and quality oriented data strategy across SCE will impact all decision making capabilities for the organization impacting not just the safety, reliability and compliance to regulatory norms for external reports, but also internal impacts across business functions not being able to have visibility to longer term data trends within their purview.	$ -	$6,425,000	$5,100,000	$5,479,386	$3,750,000	$6,425,000

App Refresh Capital New Work									
Application Name	**New Work Category**	**Application Description**	**Business Impact of not performing the effort**	**2022 Recorded**	**2025 Refresh Cost**	**2026 Refresh Cost**	**2027 Refresh Cost**	**2028 Refresh Cost**	**Total 2025 Increase**
Integration Strategy	Data Management	This effort included the periodic architectural exercise as part of ICOE governance. Modernization & maintenance of the ICOE (Integration Center of Excellence) tools, pattern, architecture governance and operations.	If this work is not completed, more manual intervention for resources scaling up or down due to lack of cloud adoption, the on-premise tools lead to higher maintenance costs, and without these tools, patterns, and monderizations, features like containerization and zero downtime will not be available.	$ -	$1,000,000	$1,500,000	$1,500,000	$1,500,000	$1,000,000
Industry Specific Solution for Utilities (ISU) Tech Refresh including DP Live Upgrade	ISU	SAP-ISU is customer service solution for customer interaction, usage billing, payment and collections, and metering devices. Upgrade to ensure that we continue to run on a vendor supported version	Need to keep current in order to retain vendor support. Without vendor support we might not be able to restore service which would our ability to services our customers. Everything from move-in to move-out, to outage communication, to billing and payments would be impacted.	$ -	$11,150,000	$-	$-	$12,350,000	$11,150,000

App Refresh Capital New Work									
Application Name	**New Work Category**	**Application Description**	**Business Impact of not performing the effort**	**2022 Recorded**	**2025 Refresh Cost**	**2026 Refresh Cost**	**2027 Refresh Cost**	**2028 Refresh Cost**	**Total 2025 Increase**
Adding Additional Capabilities to Conversational Service Framework	Digital	New functionality to meet increasing business demands. Conversational Service Framework allows teams to automate and disseminate information to internal clients in a consistent manner to focus efforts on higher value add activities.	Resources may be required to continue to address the increasing requests from the business manually for additional information on processes, tools and policies. IT would be unable to meet increasing business demands.	$ -	$350,000	$-	$350,000	$-	$350,000

App Refresh Capital New Work									
Application Name	**New Work Category**	**Application Description**	**Business Impact of not performing the effort**	**2022 Recorded**	**2025 Refresh Cost**	**2026 Refresh Cost**	**2027 Refresh Cost**	**2028 Refresh Cost**	**Total 2025 Increase**
Pega BPM platform Upgrade for Human Resources (HR) Onboarding (OB)	Digital	The HR Onboarding application coordinates the requests for new positions within the organizations from job postings, hiring process, office space and IT equipment. Current version of Pega BPM is out of support. Upgrade application to current version to avoid loss of vendor support	Required to keep platform up to date on version. Without potential risks by being behind on patches/fixes.	$ -	$-	$150,000	$-	$-	$0
Proof of Concept (POC) and Technology Prototypes	Digital	Prototypes and Proof of Concepts allow the teams to try new ideas and technologies to quickly identify the viability for use. Conduct Proof of Concepts and develop technology prototypes	Without POCs or Prototypes, a full implementation will need to be completed to determine viability of new changes. There would be loss of ability to identify new efficiency improvements if this work is not completed.	$ -	$175,000	$175,000	$175,000	$175,000	$175,000

App Refresh Capital New Work									
Application Name	**New Work Category**	**Application Description**	**Business Impact of not performing the effort**	**2022 Recorded**	**2025 Refresh Cost**	**2026 Refresh Cost**	**2027 Refresh Cost**	**2028 Refresh Cost**	**Total 2025 Increase**
Additional capacity - annual support cost for an additional 20 Chatbot Use cases	Digital	Support costs for ChatBot automating business demands.	Loss of efficiencies gained by automating business processes. Without the automation of complex business processes, the work would need to be completed through manual efforts increasing the time to complete and potential errors.	$ -	$259,803	$285,783	$314,361	$345,797	$259,803
Additional capacity - annual Pega BPM support cost (8 applications)	Digital	Pega BPM allows the integration of multiple applications into on user interface to automate complex business processes such as Onboarding. Support costs for BPM applications that automate business processes.	Without the automation of complex business processes, the work would need to be completed through manual efforts increasing the time to complete and potential errors. There would be loss of efficiencies gained by automating business processes if this work is not completed.	$ -	$588,994	$647,894	$712,683	$783,951	$588,994

App Refresh Capital New Work									
Application Name	**New Work Category**	**Application Description**	**Business Impact of not performing the effort**	**2022 Recorded**	**2025 Refresh Cost**	**2026 Refresh Cost**	**2027 Refresh Cost**	**2028 Refresh Cost**	**Total 2025 Increase**
Additional capacity - Virtual Desktop Infrastructure (VDI)	Digital	Robotic Process Automations are implemented on Virtual Desktops or VDIs. These VDIs have limited capacity and therefore additional VDIs are required to accommodate the increasing number of RPA requests. This effort includes licenses required for RPA automations	With the benefit of RPAs, the automated processes would need to be completed manually and could result in increased duration and errors. There would be loss of efficiencies gained by automating business processes if this work is not completed.	$ -	$416,240	$344,000	$344,000	$344,000	$416,240

App Refresh Capital New Work									
Application Name	**New Work Category**	**Application Description**	**Business Impact of not performing the effort**	**2022 Recorded**	**2025 Refresh Cost**	**2026 Refresh Cost**	**2027 Refresh Cost**	**2028 Refresh Cost**	**Total 2025 Increase**
Optimize DevOps and Unified Functional Testing (UFT) Mobile Replatform Infrastructure	Digital	This enables users to interact with a larger selection of devices and achieve maximum device coverage, without having to deal with procuring, configuring, and maintaining all of the devices needed for testing. Increases reliability and stability by optimizing tools	With outdated tools, there is a risk to losing vendor support, updated patches which could lead to instability of the platform and possible outages due to outdated tools.	$ 360,917	$-	$-	$-	$-	$ (360,917)

App Refresh Capital New Work									
Application Name	**New Work Category**	**Application Description**	**Business Impact of not performing the effort**	**2022 Recorded**	**2025 Refresh Cost**	**2026 Refresh Cost**	**2027 Refresh Cost**	**2028 Refresh Cost**	**Total 2025 Increase**
Enterprise DevOps Interface Refresh	Digital	Update interfaces with major IT systems due to upgrades of major IT systems (ITSM, UMT360, Orbus) As applications are updated or refreshed, the interfaces to these tools must be updated to ensure they continue to work with the new version.	Loss of vendor support could result in vulnerabilities not being patched or fixed since the vendors focus on their current versions for supplying patches for vulnerabilities.	$ -	$-	$250,000	$-	$250,000	$0
ALM Octane platform refresh, capacity increase and support (software)	Digital	ALM Octane is the enterprise standard for requirements tracking by product.	Without this effort, the planning teams will need to continue with the manual processes and may miss value added opportunities. Without this work completed, there would be loss of efficiencies gained by using tools.	$ -	$1,000,000	$-	$-	$-	$1,000,000

App Refresh Capital New Work									
Application Name	**New Work Category**	**Application Description**	**Business Impact of not performing the effort**	**2022 Recorded**	**2025 Refresh Cost**	**2026 Refresh Cost**	**2027 Refresh Cost**	**2028 Refresh Cost**	**Total 2025 Increase**
Value Stream Delivery Platform (VSDP, aka DevOps 2.0)	Digital	This work is to implement the Value Stream Management tool that allows the tracking by business process or value stream.	Without this effort, the planning teams will need to continue with the manual processes and may miss value added opportunities.	$ -	$1,000,000	$-	$-	$-	$1,000,000
Wildfire mobile application product ongoing support transition services and additional enhancement capacity	Digital	This application allows the field crews to increase efficiencies in mitigating the risks associated with Wildfires such as inspecting lines and leveraging enhanced documentation.	Crews will need to go back to manual processes to review and inspect lines for Wildfire mitigation efforts.	$ -	$90,000	$90,000	$90,000	$90,000	$90,000
			Total Costs	**$ 360,917**	**$ 22,455,037**	**$ 8,542,677**	**$ 8,965,430**	**$ 19,588,748**	**$22,094,120**

PUBLIC ADVOCATES OFFICE (Cal Advocates)
DATA RESPONSE
Southern California Edison Company Test Year 2025 General Rate Case
A.23-05-010

Date: 27 March 2024

Origination Date: 26 March 2024

Response Due: 09 April 2024

To: Kristen Yee, SCE Discovery Manager
Kristen.Yee.@sce.com
Russell Archer, Russell.Archer@sce.com

cc: scegrc@sce.com

GRC 2025 Coordinator:
Vanessa M Rodriguez, Vanessa.Rodriguez@sce.com>

From: Tamera Godfrey, Project Coordinator
Public Advocates Office
505 Van Ness Avenue, Room 4104
San Francisco, CA 94102 tamera.godfrey@cpuc.ca.gov

Data Request No: **SCE-PubAdv-022-WD**

GENERAL OBJECTIONS

Cal Advocates objects to each data request to the extent that it mischaracterizes Cal Advocates' opening testimony.

Cal Advocates objects to each data request to the extent that it is overly broad, unduly burdensome, or not reasonably calculated to lead to the discovery of admissible evidence.

Cal Advocates objects to each instruction and data request as overly broad and unduly burdensome to the extent that it seeks documents or information that SCE will possess when it receives Cal Advocates' opening testimony. Responding to such requests would be oppressive, unduly burdensome, and unnecessarily expensive, and the burden of responding to such requests is substantially the same or less for SCE as for Cal Advocates. All such documents and information will not be produced.

Cal Advocates objects to each instruction and data request to the extent that it seeks information or documents protected from disclosure by the attorney-client privilege, attorney work product doctrine, or any other applicable privilege.

SCE Question 1:

In Cal Advocates' testimony regarding the Application Refresh capital expenditures forecast states the following in CA-17C, p. 35, lines 23-24:

"Based on this completion schedule Cal Advocates recommends a 2023 forecast of $18.116 million, in contrast to SCE's forecast of $43.589 million.

Please provide an explanation and calculations for Cal Advocates' Application Refresh 2023 capital expenditure forecast of $18.116 million.

Cal Advocates Response to Question 1:

Per CA-17C pg. 35 (lines 15-22) Cal Advocates noted:

> Projects expected to be completed in 2023 whose expected completion dates slipped into 2024:
>
> In progress with an expected completion date in 2024 (with most mid18 year 2024) – 9 Projects: Forecasted costs - $21.723 million.
>
> Not started but expected to be completed in 2024 – 1 Project: Forecasted cost - $3.250 million,
>
> Not started and forecast moved to OU Capitalized Software – 1 Project: Forecasted cost - $0.500 million.

The total for "Projects expected to be completed in 2023 whose expected completion dates slipped into 2024" is $25.473 million.

Because the above-mentioned projects updated completion dates were 2024 as opposed to what was originally in SCE's 2023 forecast (see SCE's response to data request PubAdv-SCE-223-LMW Q.1), the $25.473 million was subtracted from SCE's 2023 forecast of $43.589 million resulting in Cal Advocates' 2023 forecast of $18.116 million.

Response prepared by Mark Waterworth.

Application Refresh Capital Workpaper

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

			$ 43,588,512	$ 28,320,092	$ 58,200,649	$ 52,074,981	$ 70,079,780	$ 56,411,175		
Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost		
SailPoint	This refresh is part of maintaining and conducting major version upgrades of the core IGA (Identity Governance & Access) platforms at SCE. The major refresh schedule is set for every 2 years.	Loss of vendor support for critical component for Identity, Account Management, Onboarding, and SOX/NERC CIP Compliance. Risk of stability in platform and operational availability in support compliance and enterprise processes.	$ -	$ 2,000,000	$ -	$ 2,500,000	$ -	$ 3,000,000		
Microservices – Spring boot library Upgrade	This is a development tool needed to make changes to the SCE.com. There is a major difference between the currently used version and latest stable version. Therefore, it is recommended to upgrade the libraries. The old version is already out of support.	This is needed in order to receive vendor support. Without it we may not be able to make transactional changes to SCE.com website for our customers.	$ 155,000	$ -	$ 155,000	$ -	$ 155,000	$ -		
SCE.com PSPS/Wildfire Initiatives & Various Support Tracks	These efforts allow us to deploy enhanced monitoring and reporting to support PSPS wildfire events.	This is needed to support outages and PSPS events. In the event we have unplanned or planned outage, we must have our darksite up so that our customers can still receive updates regarding PSPS events.	$ -	$ -	$ 424,000	$ 549,000	$ 549,000	$ 174,000 ~~732,626~~		
SCE.com PODS Capacity Increase (vNet Rebuild)	This initiative is to increase the IP Address range for the clusters, so that we have required ability to increase the POD (cloud container units) based on user traffic. This activity requires assessment after every major initiative in order to keep the site optimal.	If we do not expand we will run out of available space. This will cause a cascading performance issue across sce.com development environments. We would not be able to continue to develop /support the platform. We would not be able to provide new or updated content in SCE.com for our customers	$ 1,140,000	$ -	$ 1,118,000	$ -	$ 1,641,600	$ -		
MDMS Tech Refresh	Meter Data Management System stores meter data from smart meters and provides usage information to billing system (ISU). This MDMS upgrade is a prerequisite to ISU upgrade. Upgrade to ensure that we continue to run on a vendor supported version	Need to keep current in order to retain vendor support. Without vendor support we might not be able to restore service which would impact billing, and our ability to share usage information with our customers.	$ 3,504,000	$ -	$ -	$ 5,950,000	$ -	$ -		
			$ 27,891,746	$ 57,327,037	$ 51,316,677	$ 69,255,394	$			

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
Industry Specific Solution for Utilities (ISU) Tech Refresh including DP Live Upgrade	SAP-ISU is customer service solution for customer interaction, usage billing, payment and collections, and metering devices. Upgrade to ensure that we continue to run on a vendor supported version	Need to keep current in order to retain vendor support. Without vendor support we might not be able to restore service which would our ability to services our customers. Everything from move-in to move-out, to outage communication, to billing and payments would be impacted.	$ -	$ -	$ 11,150,000	$ -	$ -	$ 12,350,000
Network Management System (NMS) 7.0 to 7.2 (or applying 7.0 SP4 Hotfix 2)	Network Management System (NMS) is a collection engine that manages communication with Edison SmartConnect meters to transmit and receive data. Upgrade to ensure that we continue to run on a vendor supported version	Need to keep current in order to retain vendor support. Without vendor support we might not be able to restore service which would impact billing, and our ability to share usage information with our customers.	$ -	$ 5,428,346	$ -	$ -	$ 8,400,000	$ -
OT (Open Text) Exstream Upgrade	OpenText application is used for customer bill printing and bill presentment in SCE.com	Need to keep current in order to retain vendor support. Without vendor support we might not be able to restore service which would impact our ability to print customer letters, and customer bills.	$ 2,000,000	$ -	$ -	$ -	$ 2,650,000	$ -
Smart Connect Monitoring and Analysis System (SCMAS) Upgrade	The SCMAS (Smart Connect Monitoring and Analysis System) web application is used as a focal point to manage Incidents, create ad-hoc NMS (Network Management System) jobs, perform Template management, and provide System Administration features	This is intended to refresh the solution which will replace SCMAS. This tool will allow our Advanced Metering Organization (AMO) to continue to safeguard and monitor our advanced meter infrastructure. The SCMAS replacement will be addressed in the Smart Meter Advanced Analytics (SMAA) project that will decommission SCMAS	$ -	$ -	$ -	$ -	$ 3,325,000	$ -
Cell Relay Availability (CRA)+ Cell Relay Configuration Management (CGM) Upgrade	CRA (Cell Relay Availability System) performs the scheduled jobs of communicating with cell relays to get the data which is used for visual tracking of cell relays function	This is related to our cell relay used for collecting data from the meters. Need to keep current in order to retain vendor support. Without vendor support we might not be able to restore service which would impact billing, and our ability to share usage information with our customers.	$ -	$ -	$ -	$ 2,000,000	$ -	$ -
Upgrade Jave Development Kit (JDK) and .Net for SCE Energy Procurement Applications	Upgrade all the in-house grown application to latest Java Development Kit (JDK) and .Net version	Needed in order to comply with cyber security standards. If we run an outdated version, it puts us at risk for a cyber related event. We need to stay current in order to continue to receive vendor security patches.	$ -	$ -	$ -	$ -	$ 750,000	$ -
Settlecore Application Refresh	Upgrade Settlecore from thick client to Web based application	This is needed to process settlements with CALISO and counter parties	$ -	$ -	$ -	$ -	$ 750,000	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
Commodity Management Platform (CMP) - Endur Grid Engine - Migration from Script Engine	Migrate Endur service to use Grid Engine. CMP-Endur is Energy Trading and Contract settlement system	This is SCEs primary energy trading system. This is needed in order to ensure we are able to provide energy to our customers	$ -	$ -	$ -	$ -	$ 950,000	$ -
Commodity Management Platform (CMP) - Endur Upgrade	Upgrade Endur to Version 22.	This is SCEs primary energy trading system. This is needed in order to ensure we are able to provide energy to our customers	$ -	$ -	$ -	$ 2,375,000	$ -	$ -
Rome Upgrade	Upgrade ROME to release 11. Rome is Credit and Collateral Management system	This is Energy Procurement Management (EPMs) risk management system. This is needed in order to assess the risk of counter parties. Not having this functional could put us at risk of not being able to provide energy.	$ -	$ -	$ -	$ -	$ 747,500	$ -
Generation Revenue Metering System (GRMS) (MV90) Upgrade	Upgrade MV90 GRMS to Latest version.	This is needed to read meter data from the generation sites. We need this in order to submit data to CALISO.	$ -	$ -	$ -	$ -	$ 661,250	$ -
Transmission & Distribution Non-Geographic Information System (GIS) Asset Management Refreshes	This effort is for the upgrades of: General Electric Smallworld (GESW), Spatial Business Systems, Operational Data Store/Feature Manipulation Engine, Map3D, Outage Database and Reliability Metrics (ODRM), Landvision	If these applications are not upgraded, Log4j and Java vulnerabilities will remain. Delay or unavailability for Business to maintain circuit map data, streetlight map data, transmission and distribution assets. Additonally, there will be continued compatibility issues with Oracle 19c. Impacts ability to record mapping updates to reflect asset and connectivity changes as a result of recently completed capital work. This may induce safety issues for field employees when maps do not reflect current field conditions. This will induce data latency and data integrity issues across integrated systems, that will increase work duplication and degrade performance. Users are currently experiencing ~500 of crashes a month increasing the time needed perform their work. Delays and manual effort of performing the final steps of qualifying and validating outage result for reporting to the CPUC if these applications are not upgraded.	$ 700,000	$ -	$ 1,000,000	$1,000,000 $ 1,758,304	$ 1,500,000	$ 1,000,000

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
Transmission & Distribution Geographic Information Refreshes	This effort is for the upgrades of: ArcGIS, SCEGeoview	If these applications are not upgraded: - There would be delays or be available for Business resiliency Team to provide the 5-day weather forecast data which helps on predicting and planning for a PSPS Event. Timely notifications are sent to the SCE present and proposed customers. - There will be delays or be unavailable for T&D grid operations team. It is used by Grid Operations during the PSPS to constantly monitor circuits if they are partially and fully de-energized. - There will be delays or impacts in managing PSPS event by Public Safety Partners in accessing SCE data. - There will be have delays or be unavailable to manage Grid radio devices. - There will be delays or be unavailable for Safety and Environmental OUs to create report for Incident Management, Safety Observation, Hazardous Waste Management, and Environmental Clearance applications. - The business would lose ability to visualize assets and attributes from a GIS mapping perspective. Being able to visualize assets in relation to High Fire areas, Bulletin 322, and flagged with Safety and Customer (i.e., Redlist) implication is essential for field and office personnel. This would limit ability to initiate Distribution and Subtransmission Capital work with existing geo-referenced assets and connectivity, extending the Work Order Design processes and mapping updates upon completion of the work. Time, cannot create new WOs for	$ -	$ 2,360,000	$ 4,500,000	$ 6,300,000	$ 6,600,000	$ 4,750,000

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
Transmission & Distribution Engineering & Planning Refreshes	This effort is for the upgrades of: Distributed Energy Resource Planning External Portal (DRPEP), Grid Interconnection Processing Tool (GIPT), Grid Analytics Tool (GAT), Cyme, Grid Connectivity Model (GCM)	If these applications are not upgraded risks would include SCE would be non-compliant to CPUC and limit SCE's efforts to support customer use of clean energy technologies, streamline the interconnection process, and help California meet its clean energy goals. These applications are needed to provide public access to SCE's Integration Capacity Analysis (ICA) for each line section or node in the distribution system and to perform the Commission-approved Locational Net Benefit Analysis (LNBA) methodology in our distribution systems. Additional impacts include SCE would be inhibited in the ability to support the timely processing of external Customer submissions of requests to interconnect Distributed Energy Resources (DERs) to SCE's electrical system under SCE's interconnection tariffs. These applications streamlines the complex end-to-end cross organizational and generation interconnection processes and centralizes the DER information captured during these processes.	$ -	$ -	$ 500,000	$ 1,200,000	$ 500,000	$ -
Transmission & Distribution (T&D) Grid Resilience Refreshes	This effort is for the upgrades of: Public Safety Power Shutoff (PSPS), Vegetation Management, GRViewer	If these applications are not upgraded, the vendor support would expire. Risks to the applications include: - There will be delay or unavailability for Business resiliency Team to provide the 5-day weather forecast data which helps on predicting and planning for a PSPS Event. Timely notifications are sent to the SCE present and proposed customers. - There will be delay or unavailability for T&D grid operations team. It is used by Grid Operations during the PSPS to constantly monitor circuits if they are partially and fully de-energized. - There will be delay or impact in managing PSPS event by Public Safety Partners in accessing SCE data.	$ -	$ -	$ -	$ 400,000	$ -	$ 500,000

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
Transmission & Distribution (T&D) Field Application Refreshes	This effort is for the upgrades of: Consolidated Mobile Solutions (CMS), Afaria, Field Automated Test System (FATS), Electrical Metering Services Tracking System(EMST), Inspect Cam, Inspec App, C3 (customer Crew Connect), ACDC (Asset Complete Data Capture), Bolt AI learning, Small Tools- Golden Gem, Advanced Systems for Power Engineering(Aspen), Test Smart Form Tool (TSFT/DOBLE), Transmission Circuit and Transmission Single Line, Field Mobility Portal 360 (FMP360)	If upgrades are not performed for these applications, then impacts would be seen in the inspections, work order completion, and E1P1 Notifications completions, meter engineering to provide designs for new complex metering would be impacted, and the tools that manage the devices in the field would not able to perform the activities.	$ 1,500,000	$ -	$ 4,250,000	$ 1,500,000	$ 500,000	$ 2,500,000
Transmission & Distribution (T&D) Desktop Application Refreshes	This effort is for the upgrades of: CIRCUIT BREAKER ANALYSIS 4.0 (LENS), Design Manager (DM), Automated Utility Design (AUD), SPIDA	If upgrades are not performed for these applications, then the ability to create and design work will stop, circuit breaker health will be unavailable to field crew, pole project planning, calculations, and costing would be unavailable, work order management and pricing would be impacted.	$ 3,084,329	$ 91,746	$ 6,750,000	$ 2,600,000	$ 3,900,000	$ 4,250,000
Accellion Cloud Migration/Modernization	Kiteworks is a highly scalable and secure mobile file sharing and collaboration platform. Kiteworks is the new name for Accellion. SCE uses Kiteworks to distribute Large CPUC data files with affiliate companies(external OC firms, parties and business). The application provides secure way to share file with various CPUC parties also can handle large data. SCE uses Kiteworks to distribute Large CPUC data files with affiliate companies(external OC firms, parties and business).	Currently, SCE is using a On Premise unix server to host the application however vendor also offers their cloud platform. Aligned to SCE's cloud road map, SCE will move the application to vendor supported application for better accessibility, availability, performance, DR and wants to release the OnPrem Infra and related Opx and Capx. If we do not execute this project, SCE will keep on incurring infrastructure related costs for the server and users will also not be able to explore the full potential of the cloud platform.	$ -	$ 100,000	$ 240,000	$ 1,000,000	$ -	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
Application Programming Interface (API) Connect version Upgrade/Modernization	This is the IBM tool used to design and manage API lifecycle and assists in creating self-service APIs.	By not upgrading, this will lead to losing IBM vendor support. IBM will not provide any support for the bugs raised due to IBM API current version which will lead to business disruption of application functions and sce.com being the primary one. Functionality on sce.com likes user detail service like address update, contact detail, account summary detail, bill submission, bill recalculation summary etc will be impacted. There are 100+ API up and running at present in production. API is an enterprise tool for API management used across all the OUs.	$ -	$ -	$ 300,000	$ -	$ 300,000	$ -
Account Payable System (APS) Merge with IVOS	Account Payable System (APS) application is used to transfer the account payable data between iVos and SAP. This is a Window Console application. APS application are mainly used by worker compensation department to generate the invoice details file from iVos for SAP and also to generate the Check Status file for iVos from SAP.	During iVOS migration iVOS Cloud - On Premise SAP Integration module APS was developed as a desktop application. This project will move APS to iVOS cloud. If we do not execute this project, APS and IVOS will remain as separate modules and maintaining them might be difficult and costly in comparison to having them integrated as a single application in cloud.	$ -	$ 100,000	$ -	$ -	$ -	$ -
SAP Business Objects (BOBJ) Upgrade & Expansion	This effort is to upgrade BOBJ to market -1 version and plan move to cloud. BOBJ is the enterprise reporting tool for SCE. All critical, operational and strategic business reports are on SAP Business Objects (BOBJ) platform.	BOBJ is used for most enterprise reporting and needs to be kept on market -1 version to ensure compatibility and vendor support. If the product falls out of vendor support, it poses a risk of unplanned downtimes and lack of vendor support for the platform. The business impact is unavailability of all reports supporting the Human Capital Management, Finance, Operations, T&D, Fleet management and Customer service reporting. It will basically impact all data based decision making capability of SCE as an enterprise.	$ -	$ 500,000	$ -	$ 500,000	$ -	$ 500,000

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
Business Warehouse Support Pack (BW SP) Upgrade validation	SAP BW is the main enterprise data warehouse at SCE supporting all data and analytics modeling, reports and applications across enterprise functions such as HR and Finance. SAP BW system is used as the enterprise data warehouse for all enterprise data sets in SCE. The SAP BW platform needs to be upgraded to market -1 version for it to be adequately supported	If not upgraded, the SAP Business Information Warehouse data warehouse environment runs the risk of falling gout of vendor support. It also exposes the data warehouse environment to security risks due to vendor provided patches for new vulnerabilities being unavailable. This platform will have a direct impact of most enterprise business processes including but not limited to HR reporting, Financial reporting, Customer service analysis and reporting, Enterprise Asset master data reporting, Business Consolidation Service, Finance month end close reporting.	$ -	$ -	$ 300,000	$ -	$ 300,000	$ -
ASPECT Workforce Management/ Quality Management Server (QMS) / Contact Center Enterprise Version 10 (CCE10) application upgrade	ASPECT is a comprehensive resource planning and staff management system that gives you the tools you need to achieve your contact-center sales and service goals at the lowest cost. Syntellect CCE10 enables user to fully control a universal queue of customer interactions of all types, including telephone and Interactive Voice Response (IVR), voice mail, email, web chat, web transactions, fax and agent tasks. QMS is a part of CCE10	These products were last upgraded in 2022 and is due for an upgrade in 2025. If these products are not upgraded on time, they will be out of vendor support and may cause business impact in case of any critical issue.	$ -	$ -	$ -	$ 1,130,000	$ -	$ -
Claims Information Management system (CIMS) Search and Mobile enablement	Claims Information Management system (CIMS) is a system to manage the Claims (Collections and Liabilities) used by the SCE Legal Organization Claims Division. CIMS is the system of records for thousands of incidents logged each year and its resulting Claims.	CIMS has moved to Cloud (Azure & SharePoint). As SharePointO365 also offers Mobile enablement, SCE will also add this functionality to enable various user actions on the go. If we execute this project, it will reduce the cycle time of claim lifecycle, improve searchability, productivity and increase the throughput, thus improving customer satisfaction.	$ -	$ -	$ 500,000	$ -	$ -	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
Compulaw Web Migration	CompuLaw is a third party Commercial Off the Shelf (COTS) Application developed by Aderant which is also referred to as Docket Management System. This product is used for the creation of Court Calendars based on the court rules. The main purpose behind installation of the system was to ensure that the Court deadlines are never missed. This system also helps the Timekeeper to keep the Attorneys on check.	SCE is currently using old Compulaw desktop version which is placed in an 2008 R2 server file share. However, the vendor already offers their web and cloud version of this same product which are based on most recent technologies and architecture and with many new features. If we do not execute this project, the current OnPrem version will be more challenging and costly to maintain and more vulnerable to cyber risk.	$ -	$ 120,000	$ -	$ -	$ -	$ -
DataPower Modernization OpenShift	IBM DataPower Gateway is a single gateway platform that helps provide security, control, integration, and optimized access to workloads across multiple business channels. These channels include mobile, web, application programming interface (API), service-oriented architecture (SOA), B2B, and cloud.	Moving DataPower to RedHat OpenShift will help free up on-premise resources and improve the integration architecture for the cloud to cloud integration scenarios. IBM OpenShift provides offerings like Containerization thereby reduces the hardware & licensing cost . It also provides features for cloud gateway. Without the DataPower modernization, SCE will continue to pay higher licensing cost. Resources scaling up and down will be effort and cost intensive.	$ -	$ 2,000,000	$ 500,000	$ -	$ -	$ -
SAP Data Intelligence (DI) Migration for SAP Business Objects Data Services (BODS) Cloud connectors	DI is the enterprise Extraction-Transformation Loading (ETL) cloud tool of choice and all workloads need to be migrated to DI from on prem systems. This requires connectivity with existing on prem counterpart ETL tools such as BODS to execute on prem workloads as a sub part of DI.	Without the implementation of BODS cloud connectors in SAP Data Intelligence, the corresponding ETL processes will be impacted. This includes all ETL between Hadoop and HANA environments, non-SAP to HANA environments, Remedy data to HANA pipelines. Etc. having a direct impact on warehousing and reporting across these areas. It will also impact processes such as Call Miner and all service management reporting across SCE.	$ -	$ 500,000	$ 500,000	$ 500,000	$ -	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
SAP Data Intelligence (DI) Migration for Information Steward (IS)	DI is the enterprise Extraction-Transformation Loading (ETL) cloud tool of choice and all workloads need to be migrated to DI from on prem systems. IS is the Data Quality (DQ) tool of choice currently which needs to be migrated over to DI on cloud for future proofing purposes as well as long term sustainability	SAP Data Intelligence is the enterprise ETL cloud tool of choice and all workloads need to be migrated to DI from on prem systems. If SAP Information Steward jobs and data quality rules are not migrated, it poses the risk of having these rules not supported by the vendor anymore, thereby impacting overall data quality across environments in SCE. It will impact data quality in areas such as Customer Service & T&D, across critical processes such as billing, usage, meter interval data. It will also impact SCEs ability to service the regulatory data requirements of its Demand Response Partners.	$ -	$ 500,000	$ 500,000	$ 500,000	$ -	$ -
SAP Data Intelligence (DI)/SAP Business Objects Data Services (BODS)/Information Steward (IS) Upgrade & Expansion	SAP DI / BODS and IS is a combined platform supporting all critical ETL platforms at SCE. BODS / DI are the only ETL tool that SCE uses to integrate its data platforms and move data from source to Data platforms. BODS is used for key ETL jobs and needs to be kept on market -1 version to ensure compatibility and vendor support	SAP DI / BODS and IS is a combined platform supporting all critical ETL platforms at SCE. Not keeping this platform upgraded and sized appropriately runs the risk of impacting all data pipelines across SCE across functional areas. Any data that has corresponding analysis and reporting needs will be impacted across CS, T&D, Enterprise areas. It also exposes the ETL pipelines to future vulnerabilities due to unavailability of vendor provided patches.	$ -	$ -	$ 500,000	$ -	$ 500,000	$ -
Data Warehouse Cloud (DWC) migration for HANA Self Service	DWC is the cloud platform of choice for self-service modeling. Use cases that are in on-premise HANA today need to be moved to DWC	Self-service use cases that are in on-premise HANA run the risk of being unsupported and pose security risks for the larger HANA platform holding critical data across functional areas. It's imperative to move these workloads to DWC both to make them more secure, easier to manage and maintain and more user friendly for end users. Business functions that will have significant impacts are HR reporting including headcount reporting and talent planning, CS reporting across customer process such as billing and usage, products and programs, devices. It also poses risks to IT service and incident management analytics and reports.	$ -	$ 500,000	$ 500,000	$ -	$ -	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
Electronic Data Interchange Value Added Network (EDI VAN) (Liaison LENS) replacement	The EDI VAN is simply a secure network where EDI documents can be exchanged between a network of business partners. Replacement of EDI VAN will lead to saving in license cost SCE pays for the 3rd party. Electronic Data Interchange(EDI) Value Added Network(VAN)	Continuing of EDI VAN usage will lead to increase in license cost for SCE	$ -	$ -	$ 400,000	$ 1,000,000	$ 400,000	$ -
High-performance ANalytic Appliance (HANA) Expansion / Upgrade validation	SAP HANA (High-performance ANalytic Appliance) is a multi-model database that stores data in its memory instead of keeping it on a disk. The SAP HANA platforms needs to be upgraded to market -1 version for it to be adequately supported	HANA data and usage growth will exceed its current capacity by 2025. If the system is not upgraded and expanded, it runs the risk of unplanned downtimes posing risks of unplanned outages. The platform hosts SCE enterprise Datawarehouse environments such as SAP BW and standalone HANA DB for managing Enterprise, CS, T&D and HR data.	$ -	$ 300,000	$ -	$ 300,000	$ -	$ 300,000
Native Storage Extension (NSE) Implementation and rollout	Native Storage Extension (NSE) will allow up to 7 times more storage on HANA using the same infrastructure without over consuming main memory. The current system is up to 60% full and this is an urgent requirement to ensure future sustainability of the platform	HANA on prem is up to capacity and NSE is required to ease the workload on HANA to avoid system risks and downtimes. NSE will allow SCE to retain data older then 1 year on the underlying disks thereby freeing the main memory to hold the most frequently accessed data. This will allow the system to function for longer with the same hardware capacity. Not implementing NSE poses immediate risks of system downtimes due to excessive memory consumption beyond the vendor recommended limits posing a risk to all data warehousing and reporting use cases across SCE.	$ -	$ 400,000	$ 400,000	$ -	$ -	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
SAP Analytics Cloud (SAC) Migration	SAC is the future visualization tool of choice from SAP and is projected as a future potential replacement for BOBJ for enterprise reporting. Once it gets tested and established, a migration of existing use cases will allow us to decommission on premise infrastructure	Not moving away from BOBJ to SAC will be costly since we will be required to maintain both on prem as well as cloud platform. It also poses the risk of falling behind in terms of available feature sets and functionality. SAC is expected to support all critical dashboarding and storyboarding needs for SCE including all HR reporting in the future based on data from SuccessFactors. SAC will also host critical planning process across Finance and HR for planning such as Operational Finance and Headcount. Not migrating and expanding the SAC platform will pose a direct risk to HR, Finance and planning processes for SCE.	$ -	$ 500,000	$ 500,000	$ 500,000	$ -	$ -
SAP PO- Service Pack Upgrade	SAP PO is the integration component SAP uses to send various functional data from SAP to other non-SAP system. For example SAP ECC (ERP Central Component) sends outgoing payment information to different banks like JPMC, PNC, Wells Fargo etc. It also integrate with Design Manager for process like create/update workorder, notification , material master data etc.	The new features/fixes of SAP PO service pack will not be available. Product will be out of support for these new features.	$ -	$ -	$ 335,000	$ -	$ -	$ -
SAS Grid / Statical Software (SAS) Viya Upgrade/Modernization	SAS Grid / Statical Software (SAS) Viya data visualization for Business	SAS system performance will degrade with increasing user base	$ -	$ 250,000	$ 100,000	$ 2,000,000	$ -	$ -
Sterling Managed File Transfer - Rearchitect/Modernize(Cloud)	Application used for the intra/intercompany encrypted Electronic Data Interchange (EDI) files and other file transfer activities	Without the MFT modernization, SCE will continue to pay higher licensing cost. Resources scaling up and down will be effort and cost intensive. There will be no zero-down time deployment.	$ 1,000,000	$ 2,000,000	$ 500,000	$ -	$ -	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
TM2 Tariff Manager upgrade / replacement	Tariff Manager 2 (TM2) supports the Utility's Regulatory department(s) in the preparation, management, and retention of CPUC advice letter filings. TM2 provides tools that support the process of cancellation, editing, composition, and publication of these complex documents. TM2 also automates the publication of both submitted filings and the tariff book to Utility websites, saving significant personnel resources while helping to ensure that the Utility remains in compliance with CPUC posting requirements.	Current TM2 version is out of vendor support and cannot be sustained due to old technology and vendor went out of business. If this application is not replaced/rebuilt or if it breaks down Regulatory department will be at great risk of not meeting CPUC compliance deadlines and the possibility of penalty. Also, a manual work around would need hiring of several employees to handle the incremental work. Hence this product needs to be upgraded or replaced to ensure this does not breakdown and SCE remain in compliance with CPUC posting requirements.	$ -	$ 700,000	$ -	$ -	$ -	$ -
Utilities International Inc. (UI) Planner upgrade to new B2 solution	Finance Utilities International Planner is a financial tool used by cash management and treasurers in finance department. It is used for financial planning and analysis (for purposes like forecasting, budgeting, etc.). It is considered consistent in applying business logic and integrates financial and regulatory statements.	UI Planner provides unique capabilities for Long Term Financial planning which includes establishing & managing Utility specific Financial Model, regulations & associated accounting processes. As an industry leading tool, UIPlanner has preconfigured calculations (in the areas of actualization, forecasting, revenue recognition, financing, income tax etc.) based on best practices across many utilities in United States and this also helps ensure faster updates to model the latest tax laws within the application. Existing 2-dimensional UI Planner Financial Model is reaching end-of-life in 2023. The project will bring the multidimensional UI Solutions Financial Model and will include the upgrade of the Asset Book and Tax solutions. It will help minimize the manual effort and improve processing of complex financial modelling by enabled automated invoices, with improved data accuracy, easier configuration and administration, improved calculations for several key areas (Ledger, Cash Balancing, Bonds, and State and Federal Income Taxes).	$ -	$ 100,000	$ -	$ -	$ -	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
Verint Upgrade	Verint Survey Tool is a vendor supported application which helps user to conduct surveys.	The current Verint Survey application version won't support latest security, application patches which results in cyber threat/risk while using this application. We may see many more vulnerabilities in near future if this application is not upgraded to their latest market version.	$ -	$ -	$ -	$ 500,000	$ -	$ -
Data Power Refresh / Upgrade	There are physical & virtual DataPower gateway which is playing a major security gateway for all the Application Programming Interface (API) calls.	DataPower is an enterprise gateway for all external integration to SCE platform used across all the OUs. Not having upgrade will lead to lack of IBM vendor support.	$ -	$ 1,800,000	$ -	$ -	$ -	$ 3,000,000
Data Strategy	Periodic architectural exercise as part of Analytics Community for Excellence (ACE) governance	New data ingestion, ETL, modeling, reporting and visualization patterns and tool implementations. Not devising and implementing a coherent, uniform and quality oriented data strategy across SCE will impact all decision making capabilities for the organization impacting not just the safety, reliability and compliance to regulatory norms for external reports, but also internal impacts across business functions not being able to have visibility to longer term data trends within their purview.	$ -	$ -	$ 6,425,000	$ 5,100,000	$ ~~5,479,386~~	$ 3,750,000
Integration Strategy	This effort included the periodic architectural exercise as part of ICOE governance. Modernization & maintenance of the ICOE (Integration Center of Excellence) tools, pattern, architecture governance and operations.	If this work is not completed, more manual intervention for resources scaling up or down due to lack of cloud adoption, the on-premise tools lead to higher maintenance costs, and without these tools, patterns, and monderizations, features like containerization and zero downtime will not be available.	$ -	$ -	$ 1,000,000	$ 1,500,000	$ 1,500,000	$ 1,500,000

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
Data Reconciliation products	Evaluate and move to new Data Quality (DQ) products such as SAP Data Intelligence from the current Information Steward on prem. Also standardize all audit and DW frameworks that have already been implemented	There are multiple DQ initiatives on multiple different tools and platforms as of today and all of them are seeing rapid development. Standardization is required to be implemented now otherwise moving to a new tool at a later stage will become too effort intensive. Supporting the existing DQ infrastructure will also become unmanageable in a few years posing risks to the quality of data available cross SCEs data platforms. This will impact critical functions such as regulatory reporting to DRPs, Customer usage reporting to end customers through sce.com and all data based decision making due to unreliability of data	$ -	$ 600,000	$ 500,000	$ 500,000	$ -	$ -
Click Remediation	Click is used for maintenance and service WO scheduling and crew assignment. This project is to implement a new scheduling application and migrate the functionalities of the outdated Click Application.	Risks of not completing this effort include: maintenance costs, outdated technology, security and compliance risks and loss of vendor support. Impacts t the application would impact: Work Order and business scheduling. Contributes to safety if work orders are not being performed on time.	$ -	$ -	$ 400,000	$ -	$ -	$ -
Ariba/Cloud Intergration Gateway (CIG) Upgrade	The project scope is to upgrade the Ariba / Cloud Integration Gateway System to latest version of the software Middleware	Risk of not performing the upgrade: 1) Frequent system outages. 2) Procure-to-Pay document may intermittently failed. 3) Compliance / Security Risk 4) Unavailability of new functionalities 5) Risk of not getting Vendor Product Support 6) Compatibility / Performance issues	$ -	$ -	$ 750,000	$ -	$ -	$ 750,000

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
eDMRM Upgrade	Electronic Document Management and Record Management (eDMRM) is enterprise wide repository to store and retrieve business records that includes drawings, notification workorder attachments, PO(purchase order) attachments, all other enterprise wide business related documents. The project scope is to periodically upgrade the EDMRM System to latest version or n-1 version of the software.	The current version is 6 versions back from the latest available version. Product Support has expired for the current version which then causes compatibility issues, performance issues, compliance and security risk and unavailability of new functionalities. Additionally, there is risk of not getting Vendor Product Support, which then the issues we encounter will not be support in case of any critical issues in production environment. This will impact availability of eDMRM application, which means the user cannot retrieve any prior stored information like drawings, PO attachments, notification workorder attachments. Also the field officers will not be able to upload/download asset images.	$ -	$ -	$ -	$ 870,000	$ 635,000	$ -
Federal Signal version upgrade / Genetec Security Center 5.10 version upgrade	Genetec is physical security monitoring software which is very critical for SCE. This tool have video surveillance capability to detect trespass, gun shooting detection, etc. This project is to periodically upgrade the Federal Signal and Genetec Security Center application- a requirement for physical safety. This application are very critical for SCE physical property security matter. It is also compliance matter.	This application is safety & compliance application. The planned upgrade will improve the current security risks in the application. Risks of not upgrading include: Compliance / Security Risk Unavailability of new functionalities Risk of not getting Vendor Product Support Compatibility / Performance issues	$ -	$ 450,000	$ -	$ 450,000	$ -	$ 450,000
Fieldglass Maintenance/Upgrade	The SAP Fieldglass is a cloud-based Vendor Management System for SCE contingent worker and service providers. Addition to the above Fieldglass supports to manage Statement Of Work with vendors. The project scope is to upgrade the Fieldglass / Middleware System to latest version of the software.	Risks of not upgrading the application include: Unable to transact data to/from Fieldglass Uncertainty in Business Continuity Compliance / Security Risk Unavailability of new functionalities Risk of not getting Vendor Product Support Compatibility / Performance issues	$ -	$ -	$ 500,000	$ -	$ -	$ 500,000

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
FIORI Migration/Modernization to Business Technology Platform (BTP)	BTP (Business Technology Platform) is a cloud based platform for application development, analytics and artificial intelligence, automation and integration. Currently Fiori applications are hosted in on-premise Gateway system. As a part of technology modernization and SAP roadmap, the application hosted in on-premise gateway system will be migrated to BTP platform. This project is to migrate the middleware Gateway application functionalities for existing Fiori applications to SAP BTP	Risks of not upgrading the application include: Unable to fully leverage new technology benefits(new function and user friendly look and feel). Risk of older versions (SAP Gateway) going out of support in future. Effects all of the new SAP Development efforts (easier to develop).	$ -	$ 850,000	$ 850,000	$ -	$ -	$ -
Gateway Upgrade	SAP Gateway, an integral part of SAP NetWeaver, lets you connect devices, environments, and platforms to SAP systems. It uses the Open Data Protocol (OData) so you can use any programming language or model to connect to SAP and non-SAP applications. The project scope is to upgrade the Gateway System to latest version of the software	SAP Gateway is used for Fiori mobile application. It is critical to upgrade to avoid compliance / security risk and loss of Vendor Support if we don't upgrade timely.	$ -	$ -	$ 500,000	$ -	$ -	$ 500,000
GIS Implementation - Interface Remediation	Project scope to provide the remediation support for GIS implementation and consolidation project.	This interface remediation is necessary for all on Premise Applications. We risk losing Vendor Support if we do not upgrade. There are also compliance impacts if not upgraded timely.	$ -	$ 470,000	$ -	$ -	$ -	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
GRC Version Upgrade	SAP GRC is compliance management tool which is very critical to SCE. We actively use this application to manage regulatory requirement, compliance control management, and access control management. This Project is for executing a Functional upgrade of the GRC systems	SAP GRC is key compliance management system at SCE. This is critical for SCE to be compliant with many regulatory requirement. Not upgrading will result in: Compliance / Security Risk Loss of Vendor Support, Used by Multiple Compliance Teams Risk of not getting Vendor Product Support Compatibility / Performance issues Risk of not getting Vendor Product Support Compatibility / Performance issues	$ -	$ -	$ 600,000	$ 800,000	$ -	$ 800,000
KOFAX Total Agility Upgrade	KOFAX Total Agility is scanning solution deployed in SCE. Currently, KTA is been used by Legal, Customer Care, T&D, Aircraft Operation for scanning document and uploading in different repositories. The project scope is to periodically upgrade KOFAX Total Agility to latest version or n-1 version of the software.	Browser compatibility issue exists for the current version. The vendor support has expired for the current version. The current version in SCE is 5 versions behind the latest released version. Not upgrading will result in: Compliance / Security Risk Unavailability of new functionalities Risk of not getting Vendor Product Support Compatibility / Performance issues	$ -	$ -	$ -	$ 500,000	$ -	$ -
NERC CIP Upgrade	This Project is to upgrade the NERC CIP SharePoint platform to the latest version. This NERC CIP repository for storing unstructured data	If this upgrade does not occur it will go out of support with Microsoft. Without support SCE will not have an approved NERC CIP repository for storing unstructured data which will cause us to be out of compliance and put our NERC CIP data at risk. These repositories also support Western Electricity Coordinating Council (WECC) audits which are mandatory and the system must be available for our NERC CIP business users.	$ -	$ 700,000	$ -	$ -	$ -	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
Onapsis Upgrade and Remediation	Onapsis is a code scanning tool to ensure the security and quality of SAP codes. Onapsis offers monitoring and protection for SAP and Oracle-based ERP systems. The service includes identifying vulnerabilities in the code, application, or system level. It should help improve ERP performance overall. Onapsis checks for all updates and system changes. This project is to upgrade the Onapsis application to the latest or n-1 version and to remediate the risks arising therefrom.	If this application is not upgraded SCE risks system vulnerabilities to external attacks leading to security risk and breach, compliance and security risk, and risk of losing vendor product support. It's a cyber risk if this application was not available. Business data could be breached if this application was not available to catch malicious and substandard codes in SAP applications	$ -	$ 600,000	$ -	$ 650,000	$ -	$ 650,000
OpenText Bill Presentment & Extended Enterprise Content Management (xECM) Platform Upgrade	SCE Bills are stored in Local Nas in archive Center. Open Text SCE Bill Presentment application will give ability to view the bill via SCE.com The project scope is to upgrade the OpenText Bill Presentment & xECM Platform to latest version or n-1 version	If this application is not upgraded SCE risks call center agents not able to use Edge version due to OpenText compatibility issue, compliance and security risks, unavailability of new functionalities, and risk of not getting Vendor Product Support. If no Edge access is available, call center agent will not be able to see the data to better assist. View bill functionality will be impacted. Hence Edge version should always be compatible for the call center agents to work and provide support.	$ -	$ -	$ -	$ 800,000	$ -	$ -
PowerPlan Upgrade	PowerPlan is a software catering to the needs of Utilities Accounting. It is considered as a critical application required to comply with Financial and Regulatory Reporting needs. SCE mainly uses it as a sub-ledger for Fixed Assets. Currently it is used to house SCE's This project is to upgrade the PowerPlan application to the latest or n-1 version and to remediate the risks arising therefrom.	If this application is not upgraded SCE risks losing Vendor Support for Out of Service Versions, unavailability of new functionalities, and performance issues. Current version of PowerPlan is no longer supported as it hit end of life in December 2022. The extended support was provided due to Premier Support contract. However, the support for the current version will not be extended beyond June 2023 and SCE must upgrade to continue getting support.	$ 5,040,000	$ -	$ 4,500,000	$ -	$ -	$ 4,500,000

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
RFgen (Mobile Data Collection Software) upgrade	RFgen is a mobile data collection software and warehouse automation solutions. This Project is to upgrade RFGen Handheld devices for Stores or the underlying software / hardware to the latest or n-1 version	If this application is not upgraded SCE risks impacting the receiving process at warehouse/storage location, performance issues, longer resolution time, compliance and security risk, and losing vendor product support.	$ -	$ -	$ -	$ 500,000	$ -	$ 500,000
SAP MAX attention	SAP MaxAttention provides an embedded support team, tailored engineering services, enhanced back-office support and attention from SAP executives.	SAP MaxAttention is the premium support plan we use for SAP. It provides us with enhanced support for operations and our projects. This also provides support for projects for analysis, troubleshooting and go lives. it there is a risk to new development projects. If this is not provided the trouble shooting of issues for projects operations will be impacted which could create BIEs, go live support will be reduced which would impact the end users and increase defects into production, and subpar analysis of work. All of our SAP systems are supported by this contract which SAP is our core enterprise systems with multiple modules that impact all users of the company and customers. Some key business applications are payroll , time, compensation , financial closure, work order processing and invoicing.	$ 1,800,000	$ 2,200,000	$ 500,000	$ 2,000,000	$ 2,000,000	$ 2,000,000
SAP On Prem Refresh / Upgrade / Modernization	This project is to assess the core software and hardware components in Enterprise SAP platform and perform the upgrade, migration, decommission and consolidation to optimize the environment.	Security Risks are at stake if the effort is not completed. Necessary for all on-premise applications. SAP applications occasionally need expertise opinion from the vendor during critical issues therefore, risk of losing vendor support has a high impact to the application.	$ -	$ -	$ -	$ -	$ 4,000,000	$ 1,739,800

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
SAP Modernization	EPCR (Enterprise Core Refresh): According to SCE's Enterprise SAP System maintenance strategy, core software and hardware components in the landscape are accessed and perform activities like upgrade, migration, decommission and consolidation wherever applicable. As part of EPCR'2022, HANA Support Pack Upgrade, SAP Application & NetWeaver Support Pack Stack Upgrade, Operating System Support Pack Upgrade will be performed.	SAP databases that are using CISCO hardware has an end of support by end of year 2023 , EPCR program objective is to migrate SAP databases from CISCO to new HP Superdome hardware. This will prevent any unplanned disruptions of key SAP business applications like payroll, time keeping, compensation, and financial closure.	$ -	$ -	$ -	$ -	$ 4,000,000	$ 1,500,000
SuccessFactors Implementation - Payroll etc.	Migrate Payroll from ERP Central Component (ECC) to SAP SuccessFactors cloud based solution.	SAP Enterprise Core Component software module has end of support by the year 2027 and advised customers to upgrade to S/4 HANA. This move to upgrade to S/4 HANA is managed through the NextGen ERP project. However, the ECC-HCM module transition to SuccessFactors is a prerequisite to NextGen ERP. Without this project, the planned major program S/4 HANA cannot be executed before the end of support. Workforce Planning, Budgeting, Employee Position Changes, Union Payscale revisions, Collective bargaining agreements will be impacted if the functions of the underlying SAP ECC software is nonfunctional.	$ -	$ -	$ -	$ -	$ 4,000,000	$ -
Support Pack Stack Upgrade	SAP Support Packages are released at regular intervals and provide Customers around the globe with the latest SAP Patches, legal requirements and corrections. They include all updates for international functions and local versions.	If this effort is not completed the risks include: Compliance / Security Risk Annual Update, Loss of Vendor Support Enhanced Security for a Secure Environment will not be update properly. New Features and Business Functionality will not get reflected. Interrupt SAP Support and customizing cost of solution implementation will increase	$ -	$ 400,000	$ 400,000	$ 400,000	$ 400,000	$ 400,000

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

Application Refresh Capital Forecast

Application Name	Application Description	Business Impact of not performing the effort	2023 Refresh Cost	2024 Refresh Cost	2025 Refresh Cost	2026 Refresh Cost	2027 Refresh Cost	2028 Refresh Cost
SAP BW/4 Hana Upgrade	SAP BW is the main enterprise data warehouse at SCE supporting all data and analytics rmodeling, reports and applications across enterprise functions such as HR and Finance. Superdome flex is the name of the HP provided servers.	Current BW system was last upgraded in 2018 and needs to undergo the next upgrade soon. The next upgrade is to BW/4HANA which is a new platform. Most objects in the current platform are dated, not perform and turning obsolete posing a significant risk to platform stability. The readiness for BW/4HANA requires a lot of pre-requisites to be met in terms of reimplementation of current applications which are effort intensive and time consuming. it's an enterprise system used across the enterprise for critical functions.	$ 3,250,000	$ -	$ -	$ -	$ -	$ -
Data Power Modernization	IBM DataPower Gateway is a single gateway platform that helps provide security, control, integration, and optimized access to workloads across multiple business channels. These channels include mobile, web, application programming interface (API), service-oriented architecture (SOA), B2B, and cloud.	If the upgrades do not occur we risk end of mainstream maintenance and loss of support. Moving datapower to RedHat openshift will help free up onpremise resource and improve the integration architecture for the cloud to cloud integration scenarios. IBM Openshift provides offering like Containerization thereby reduces the hardware & licensing cost . It also provides featues for cloud gateway. Without the datapower modernization, SCE will continue to pay higer licensing cost. Resources scaling up and down will be effort and cost intensive.	$ 1,000,000	$ -	$ -	$ -	$ -	$ -
Lease Interface upgrade/restructure	Lease module used for lease accounting in PowerPlan application. This tool enables SCE as Lessee to recognize, measure, and present expenses and cash flows arising from a leases (both operating and capital) as assets and liabilities on the balance sheet as per the needs of Generally Accepted Accounting Principles (GAAP).	Existing functionality is not working for lease interface. Some of the existing functionalities in the lease module are not working for lease interfaces built with SAP. Fixes will be implemented through the technical/functional upgrade of lease interfaces in PowerPlan and SAP.	$ 800,000	$ -	$ -	$ -	$ -	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

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SAP Cloud Platform Integration (CPI) migration to Cloud Foundry	SAP CPI migration from SAP Neo to Cloud Foundry to support SCE roadmap for SAP Business Technology Platform (BTP). SAP CPI is an enterprise Integration Platform as a Service (iPAAS) solution for integration with cloud applications. At SCE this is primarily used for integration of SAP Cloud for Customer (C4C), hybris marketing with on-premise, SAP ISU and SAP ECC.	SCE has recently procured licenses for Cloud Foundry (CF) which included CPI services. SCE will end up having two similar platforms (Neo & CF), maintenance of two SAP CPI platforms will lead to additional licensing cost. Critical interfaces including billing interfaces need to be migrated into the new platform before end of life, otherwise we will have impact to billing. Critical interfaces including billing interfaces need to be migrated into the new platform before end of life	$ 500,000	$ -	$ -	$ -	$ -	$ -
SAP Data Warehouse Cloud (DWC) & SAP Data Intelligence (SAC) Enterprise Production Roll Out/ SAP Data Intelligence (DI) Production Roll Out/SAS to DWC / High Performance Analytical Appliance (HANA) models for critical programs/Citizen Development Governance and Operationalization	DWC & SAC roll out to all SCE Departments - to provide self-service modeling capabilities to SCE Departments - associated governance and trainings/ DI production roll out - governance setup and replacing BODS cloud use cases (E.g. Call Miner)/ Remodeling in DWC / HANA for low performing / critical SAS applications / programs / models starting with T&D/ Citizen Development Champion roles required for Visualization (SAC, Power BI, BOBJ), Modeling (SAS, HANA, DWC) and Data Quality (DI / IS) This effort will provide for large segment of SAP business users to develop their own analyticala and reporting solutions. This will enable to make timely business decisions without relying on IT.	DWC is expected to be the platform of choice for all self-service data modeling needs - especially with the move to cloud DWs and especially when the source data is in any SAP platform (e.g. SuccessFactors). We would need to ensure that its rolled out to all Departments across SCE to ensure they start investing in building the right skillsets for this platform. Impact across all OUs in SCE - anyone using on prem or cloud SAP sources and having citizen development / self-service needs. The users will rely on IT for all of the analytics reporting requirements which will have both higher costs and longer turn around times.	$ 500,000	$ -	$ -	$ -	$ -	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

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Integration of Instractructure Tasks with SAP Landscape Management (LaMa)	SAP Landscape Management is an orchestration solution that can help us simplify, automate, and centralize the management and operations of our SAP landscapes running on premise, in the public or private cloud, and in hybrid environments.	Business benefits include: Automate repetitive, time-consuming administration tasks and tailor processes to our specific needs, centralize landscape operations and gain landscape-wide visibility through a single user interface and therby reduce time, resources and effort in the current decentralized system. If the upgrades are not completed the business risks are: Lower operational expenditure, supports digital transformation and Drive business innovation	$ 520,000	$ -	$ -	$ -	$ -	$ -
BOBJ Platform Upgrade	SAP BOBJ is the enterprise reporting tool for SCE - all critical, operational & strategic business reports are on SAP Business Objects (BOBJ) platform.	End of Mainstream maintenance/ Loss of support Risk of loosing most of the enterprise reporting capabilities if something were to happen to the platform and we dont have vendor support.	$ 350,000	$ -	$ -	$ -	$ -	$ -
(CARRY OVER) eDMRM -Electronic Document Management and Records Management	electronic Document Management and Record Management (eDMRM) is enterprise wide repository to store and retreive business records that includes corp drawings, notification workorder attachments, PO(purchase order) attachments, all other enterprise wide business related documents. KOFAX Total Agility (KTA) is scanning solution deployed in SCE. Currently, KTA is been used by Legal, Customer Care, T&D, Aircraft Operation for scanning document and uploading in different repositories.	The focus of this project is to upgrade current version of the eDMRM environment and related modules to 22.1 without any degradation of the functional and current system performance. Addiion to no vendor support, any kinds of issues we encounter will not be support incase of any critical issues in production environment, this will impact availability of eDMRM application, like the user cannot retrive any prior stored information like corp drawings, Purchase Order (PO) attachments, notification workorder attachments. Also the field officers will not be able to upload/download asset images.	$ 300,000	$ -	$ -	$ -	$ -	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
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(CARRY OVER) InfoPath forms migration	InfoPath Forms makes it possible for people to fill out forms in a Web browser which typically puts the data from the form in SharePoint. This is used in business processes for approvals, surveys and intake requests.	InfoPath is a deprecated technology and is out of support. If this is not migrated over to Power Platform and SharePoint Framework (SPFx) the applications will stop working when Microsoft retires them. This includes many business critical apps such as approvals on work orders and documentation.	$ 250,000	$ -	$ -	$ -	$ -	$ -
ITSM (IT Service Management): BMC Remedy to Helix Migration	IT Service management tool for man	Ongoing Upgrade project till 2024. BMC Helix helps to setup integrations to the latest IT processes such as Agile, DevOps, and AIOPS. It has abilitty to connect to Cloud based IT Sevice management system. It also bring the latest user interface to improve productivity.	$ 2,500,000	$ 600,000	$ -	$ -	$ -	$ -
Visual Boards and Agile Suite for BMC Helix	IT service management tools to manage Agile, DevOps processes for faster delivery of IT services	Delay in adaption of Agile process. No ability to measure agile adaption	$ 350,000	$ -	$ -	$ -	$ -	$ -
BMC Discovery Upgrade	IT service management Tool to discover data center assets, inventory, configuration and setup relationship data and maps applications to the IT Infrastructure	Non-compliance with license and limited functionality. Need to upgrade to BMC Helix Discovery as BMC Helix miguration is progressing to integrate to new functionalies. Eventually, the current license will reach end of life.	$ 300,000	$ -	$ -	$ -	$ -	$ -
BMC Discovery Upgrade - Containerization	IT service management Tool to discover data center assets, inventory, configuration and setup relationship data and maps applications to the IT Infrastructure	Non-compliance with license and limited functionality. Need to upgrade to BMC Helix Discovery as BMC Helix miguration is progressing to integrate to new functionalies. Eventually, the current license will reach end of life.	$ 500,000	$ -	$ -	$ -	$ -	$ -
Multi Cloud Asset Discovery Tools Integration	IT service management Tool to manage IT services in multi environments such as on-premise, cloud (SaaS) and hybrid IT sevices	Non-compliance with license and limited functionality. Need to upgrade to BMC Helix Multi Cloud Discovery as BMC Helix miguration is progressing to integrate to new functionalies connecting to various SaaS environments. Eventually, the current license will reach end of life.	$ 200,000	$ -	$ -	$ -	$ -	$ -
Multi Cloud Asset Discovery Tools Integration - Containerization	IT service management Tool to manage IT services in multi environments such as on-prem, cloud (SaaS) and hybrid IT sevices	Non-compliance with license and limited functionality. Need to upgrade to BMC Helix Multi Cloud Discovery as BMC Helix miguration is progressing to integrate to new functionalies connecting to various SaaS environments. Eventually, the current license will reach end of life.	$ 500,000	$ -	$ -	$ -	$ -	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

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Broadcom DX NetOps Upgrade to 21.2	IT service management monitoring tool to manage network performance, alerts and provide analytics.	End of Life and Impact to network performance monitoring for reliable operations.	$ 300,000	$ -	$ -	$ -	$ -	$ -
Testing Center of Excellence (TCOE): Cyber observations for HP Application Lifecycle Management (ALM) & HP PC	TCOE to modify the log-in processes to adhere to our cybersecurity log-in standards/protocols.	Non-compliance with cybersecurity access standards. SCE uses access standards such as Okta. If we don't follow Okta etc standards, users may have left SCE but their tools accesses will remain and are not properly terminated.	$ 400,000	$ -	$ -	$ -	$ -	$ -
Testing Center of Excellence (TCOE): Enhance to high end virtual machines	TCOE to expand our testing lab to include more machines with more capacity to handle increase in test automation etc.	Future test automations additions may be restricted. If SCE IT expands its scope of test automation, we will need more machines to automate testing. Without these extra more powerful machines, our automation efforts may be restricted.	$ 300,000	$ -	$ -	$ -	$ -	$ -
Testing Center of Excellence (TCOE): SQA (System Quality Assurance) Improvements	TCOE to conduct improvements such as automation, which will help speed up the process of reviewing projects for adherence to STPS processes.	SQA reviews continues in manual mode as opposed to automated. A lot of automation has moved to digitized STPS. SQA has more suggestions for how we can speed up SQA reviews/audits through additional enhancements to digitized STPS tool.	$ 250,000	$ -	$ -	$ -	$ -	$ -
Testing Center of Excellence (TCOE): BMC Helix License and IBM OpenShift License Renewal	IT Service management tool for managing IT service tickets and containerized ITSM Environments	License expires on 2027. BMC Helix helps to setup integrations to the latest IT processes such as Agile, DevOps, and AIOPS. It has ability to connect to Cloud based IT Service management system. It also bring the latest user interface to improve productivity.	$ -	$ -	$ -	$ -	$ 7,800,000	$ -
IT Service Management (ITSM): BMC Helix Suite Refresh	IT Service management tool for managing IT service tickets	License expires on 2027. BMC Helix helps to setup integrations to the latest IT processes such as Agile, DevOps, and Artificial Intelligence Operations (AIOPS). It has ability to connect to Cloud based IT Service management system. It also bring the latest user interface to improve productivity.	$ -	$ -	$ 300,000	$ 600,000	$ 2,800,000	$ 1,600,000

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

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TCOE: Test Tools Refresh (HP ALM/Application Lifecycle Management, LR(/Loadrunner Enterprise) /New Automation Licenses	TCOE to upgrade our key test tools every 3 to 4 years, to implement new available tool features. This is a standard protocol for all tools which we purchase from the market.	Unable to use new features of testing; unable to support new automation types. Technology changes on an ongoing basis and our tools need to be constantly upgraded to keep up with new operating systems etc. Without upgrades, our tools become outdated and won't be able to continue to support us functionally.			$ 300,000	$ 400,000	$ 400,000	$ 400,000
Adding Additional Capabilities to Conversational Service Framework	New functionality to meet increasing business demands. Conversational Service Framework allows teams to automate and disseminate information to internal clients in a consistent manner to focus efforts on higher value add activities.	Resources may be required to continue to address the increasing requests from the business manually for additional information on processes, tools and policies. IT would be unable to meet increasing business demands.	$ -	$ -	$ 350,000	$ -	$ 350,000	$ -
Pega BPM platform Upgrade for Human Resources (HR) Onboarding (OB)	The HR Onboarding application coordinates the requests for new positions within the organizations from job postings, hiring process, office space and IT equipment. Current version of Pega BPM is out of support. Upgrade application to current version to avoid loss of vendor support	Required to keep platform up to date on version. Without potential risks by being behind on patches/fixes.	$ -	$ -	$ -	$ 150,000	$ -	$ -
Proof of Concept (POC) and Technology Prototypes	Prototypes and Proof of Concepts allow the teams to try new ideas and technologies to quickly identify the viability for use. Conduct Proof of Concepts and develop technology prototypes	Without POCs or Prototypes, a full implementation will need to be completed to determine viability of new changes. There would be loss of ability to identify new efficiency improvements if this work is not completed.	$ -	$ -	$ 175,000	$ 175,000	$ 175,000	$ 175,000
Additional capacity - annual support cost for an additional 20 Chatbot Use cases	Support costs for ChatBot automating business demands.	Loss of efficiencies gained by automating business processes. Without the automation of complex business processes, the work would need to be completed through manual efforts increasing the time to complete and potential errors.	$ -	$ -	$ 259,803	$ 285,783	$ 314,361	$ 345,797

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

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Additional capacity - annual Pega BPM support cost (8 applications)	Pega BPM allows the integration of multiple applications into on user interface to automate complex business processes such as Onboarding. Support costs for BPM applications that automate business processes.	Without the automation of complex business processes, the work would need to be completed through manual efforts increasing the time to complete and potential errors. There would be loss of efficiencies gained by automating business processes if this work is not completed.	$ -	$ -	$ 588,994	$ 647,894	$ 712,683	$ 783,951
Additional capacity - Virtual Desktop Infrastructure (VDI)	Robotic Process Automations are implemented on Virtual Desktops or VDIs. These VDIs have limited capacity and therefore additional VDIs are required to accommodate the increasing number of RPA requests. This effort includes licenses required for RPA automations	With the benefit of RPAs, the automated processes would need to be completed manually and could result in increased duration and errors. There would be loss of efficiencies gained by automating business processes if this work is not completed.	$ -	$ -	$ 416,240	$ 344,000	$ 344,000	$ 344,000
Optimize DevOps and Unified Functional Testing (UFT) Mobile Replatform Infrastructure	This enables users to interact with a larger selection of devices and achieve maximum device coverage, without having to deal with procuring, configuring, and maintaining all of the devices needed for testing. Increases reliability and stability by optimizing tools	With outdated tools, there is a risk to losing vendor support, updated patches which could lead to instability of the platform and possible outages due to outdated tools.	$ 150,000	$ -	$ -	$ -	$ -	$ -
Enterprise DevOps Interface Refresh	Update interfaces with major IT systems due to upgrades of major IT systems (ITSM, UMT360, Orbus) As applications are updated or refreshed, the interfaces to these tools must be updated to ensure they continue to work with the new version.	Loss of vendor support could result in vulnerabilities not being patched or fixed since the vendors focus on their current versions for supplying patches for vulnerabilities.	$ -	$ -	$ -	$ 250,000	$ -	$ 250,000
ALM Octane platform refresh, capacity increase and support (software)	ALM Octane is the enterprise standa	Without this effort, the planning teams will need to continue with the manual processes and may miss value added opportunities. Without this work completed, there would be loss of efficiencies gained by using tools.	$ -	$ -	$ 1,000,000	$ -	$ -	$ -

Southern California Edison - 2025 GRC
Software Maint. Replacement GRC Activity
SCE-06 Vol.01
Nominal $

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Value Stream Delivery Platform (VSDP, aka DevOps 2.0)	This work is to implement the Value Stream Management tool that allows the tracking by business process or value stream.	Without this effort, the planning teams will need to continue with the manual processes and may miss value added opportunities.	$ -	$ -	$ 1,000,000	$ -	$ -	$ -
Wildfire mobile application product ongoing support transition services and additional enhancement capacity	This application allows the field crews to increase efficiencies in mitigating the risks associated with Wildfires such as inspecting lines and leveraging enhanced documentation.	Crews will need to go back to manual processes to review and inspect lines for Wildfire mitigation efforts.	$ -	$ -	$ 90,000	$ 90,000	$ 90,000	$ 90,000
Application Rationalization	Optimizing the IT applications portfolio will save costs and improve IT service operations.	If this effort is not completed, IT will continue to have even higher needs for capital and O&M support	$ 10,445,183	$ 1,200,000	$ -	$ -	$ -	$ -

How Often Should I Replace My Servers?

by Revolution Group | Feb 17, 2017 | IT Services

Servers are such a vital part of a company's technology infrastructure. Depending on how you use your server, your day-to-day operations could come to a halt if you experience issues like server downtime. By not being able to complete your day-to-day tasks, you're sure to lose money. So, you ask, "How often should I replace my servers?" The answer can vary but below are some ways to prevent the chaos and financial nightmare of having a server die when you're unprepared.

How Often Should I Replace My Servers?

We recommend to always follow the manufacturer's warranty and their recommended replacement timeline. Those timelines typically vary from 3-5 years and very rarely extend past 5 years. Why? Because it becomes extremely expensive to support a server after it has been running for 5 years. Statistics show it costs 200% more to support for a server that is 5 years old or older.

Even after increasing support to that server, managers still report that their 5+ year old server goes down about 3 times more than a new server. Thinking abou

that number in terms of productivity hours lost, your operations could suffer greatly. Despite the known costs of old servers, we see more and more CIOs and IT Directors waiting as long as possible to replace their servers because of capital constraints. Attempting to maintain an old server leads to poor server performance and reactive purchases.

When laying out the timeline to replace your server, another consideration is industry regulatory requirements that may put added constraints on your server lifespan. Continue to check on industry standard requirements and follow those guidelines in conjunction with your manufacturer's warranty.

On the flip side, there is such a thing as replacing your server too soon. If you replace your server too early, you may not get the full return on your existing server investment.

The Cost of Servers

With such high costs of physical servers, companies should take the following costs into consideration.

First, there will always be a large, upfront purchase cost. If you have a professional Managed IT Services team, the upfront cost of a server should always be in the budget before the warranty end date. Budgeting this cost can help soften the blow when it comes time to purchase your new server.

Second, there is a set-up fee associated with a new server. We highly recommend hiring a professional to set-up your server so it will function exactly the way you intend it to. The set-up cost will likely vary depending on what roles you would like the server to take on. Some examples of what happens during server set-up are email hosting and backup and disaster recovery systems.

The third major cost is server warranty. Adding warranty to your server can come with a large price tag but could potentially save thousands of dollars if someth goes wrong. There are varying levels of warranty that can be purchased for your

server, and it's important to find the one that best fits your company's needs. Typical warranties include replacement parts and an onsite tech to replace those parts.

Other Considerations Before Replacing Your Server

How manageable will a server refresh be for your organization? Added expenses and additional planning are necessary when replacing your server that should be taken into consideration before making the leap.

Are you going to hire an IT consulting company to replace your old server and help you source a new server? What other ancillary expenses should you expect to encounter during the process?
Who's going to manage your new server?
What will you do with your decommissioned server? Can you repurpose it from a front-line machine to a test server or development server? Will you try to include it in a trade-in program?

Options Outside of Physical Servers

After seeing the amount of money invested into physical servers, it's shocking to know that many servers aren't being used to their full potential. Some statistics even show that at any given time, the majority of servers are only using about 10% of their capacity. If your company has a 10% capacity server, it may be time to consider virtualization.

To put it simply, virtualization creates a virtual version of something instead of an actual, tangible version. Today, virtualization can be found in both the hardware and software applications within a company. To learn more about virtualization, **view this video from VMWare**.

Server virtualization became popular when managing on-premise servers became too cumbersome and expensive – monitoring and managing the serve.

health status, expanding capacity when necessary, etc.

We hope this helped answer your question of, “How often should I replace my servers?” For more information on how Revolution Group has been helping companies source, replace, set-up, and decommission servers for over 20 years, please give us a call at 614-212-1111.

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SCE-17, Vol. 01
WP Support to Correct Cal Advocates Forecast
$ in Thousands

Line	Adjustments	2018	2019	2020	DR Response	Filtered on File for the Following
1	Recorded CSRP (Nominal $)	2,161	6,232	1,677	PubAdv-SCE-111-LMW Q.10 Revised	Year=2018,2019,2020; Project/Program Name = CSRP; 2018 Cost Driver = Project
2	OU Cap. Software DCI Assets	5,592	2,610	7,153	PubAdv-SCE-111-LMW Q.10 Revised	Calculated: Total 2018 - 2020 Project Cost less CSRP
3	Total Projects	7,753	8,842	8,831	PubAdv-SCE-111-LMW Q.10 Revised	Year=2018,2019,2020; 2018 Cost Driver = Project

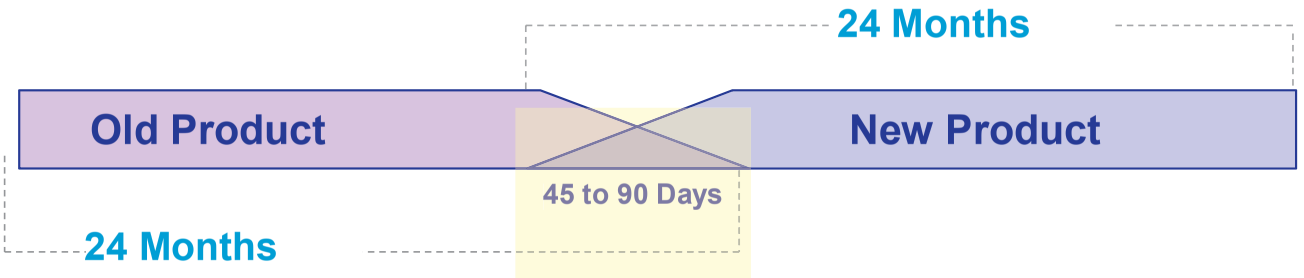
Rugged Device Lifecycle

Rugged Device Lifecycle

- Models in service now and future release forecast

Model	Release Date	Life Cycle	
		4 years	Next Generation
Dell Latitude 5414	2015/2016	2020	2021
Dell Latitude 7414	2017	2021	2021
Dell Latitude 7214	2017	2021	2021
Dell Latitude 7404	2015/2016	2019/2020	2020
Dell Latitude 5404	2015/2016	2019/2020	2020
Dell Latitude 7204	2015	2019	2020
Dell Latitude 7424	2022	2026	2027
Dell Latitude 7212	2019	2023	2024
Dell Latitude 5424	2022	2026	2027
Dell Latitude 5420	2022	2026	2027
Dell Rugged Tablet 7220	2022	2026	2027

Rugged Device Lifecycle

Transition Management

- **Why are managed transitions important?**
  - Migrating to new products is expensive and time consuming
  - Managed transitions provide visibility to product transitions and enable customers to plan IT resources and deployments
- **How does IT manage transitions?**
  - Ruggedized laptop models have long lifecycles (24 months) with managed transitions of at least 45-90 days