

Application No.: A.18-11-015, -016, -017 (consolidated)
Date: December 18, 2020
Exhibit No.: Mission:data-0500
Witnesses: Michael Murray
Commissioner: Martha Guzman Aceves
ALJs: Andrea McGary, Jessica T. Hecht

**PREPARED DIRECT TESTIMONY OF
MICHAEL MURRAY
FOR MISSION:DATA COALITION**

December 18, 2020

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

16

17

TABLE OF CONTENTS

I. INTRODUCTION 3

II. RECOMMENDATION #1: SERVICE LEVEL AGREEMENT 6

**III. RECOMMENDATION #2: NO CHANGES TO CUSTOMER-FACING
AUTHORIZATION EXPERIENCE WITHOUT ENERGY DIVISION APPROVAL 13**

**IV. RECOMMENDATION #3: CERTAIN SDG&E FEATURES SHOULD BE
IMPLEMENTED AT SHAREHOLDERS’ EXPENSE..... 16**

**V. RECOMMENDATION #4: THE IOUS SHOULD HAVE A COMMON, PUBLIC-
FACING WEBSITE TO COMMUNICATE CTP OUTAGES AND MAINTENANCE
ANNOUNCEMENTS 21**

VI. CONCLUSION..... 22

VII. STATEMENT OF QUALIFICATIONS OF MICHAEL MURRAY..... 23

18

I. INTRODUCTION

19 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

20 A. The purpose of my testimony is to address four points: (1) the need for
21 performance requirements to accompany the investor-owned utilities' ("IOUs")
22 proposals in this proceeding, (2) the need to prevent the IOUs from making changes
23 that could adversely affect the customer experience without Energy Division approval,
24 (3) two features proposed by SDG&E totaling \$205,523 should be funded by
25 shareholders, not ratepayers, because they should have been implemented previously;
26 and (4) the IOUs should have a common, public-facing website for communicating
27 outages associated with the click-through platforms ("CTP").

28 **Q. WHAT ARE THE CLICK-THROUGH PLATFORMS?**

29 A. By "CTP" I refer to the information technology ("IT") systems and processes
30 offered by Pacific Gas & Electric ("PG&E") under its Rule 24, Southern California Edison
31 ("SCE") under its Rule 24, and San Diego Gas & Electric ("SDG&E") under its Rule 32
32 (together, "Rule 24/32").

33 **Q. WHAT IS THE MISSION:DATA COALITION?**

34 A. Mission:data Coalition is national coalition of 30 technology companies delivering
35 consumer-focused, data-enabled energy savings for homes and businesses. Our
36 members have developed innovative services leveraging smart meter and utility bill data
37 that benefit consumers and utilities, whether in the form of energy efficiency, demand
38 response, smart thermostats, rooftop solar, smart home systems, and other distributed

39 energy resources (“DERs”). Mission: data advocates nationwide to advance customers’
40 ability to quickly and conveniently share their energy-related data held by utilities with
41 energy management companies of their choice. This energy-related data includes
42 energy usage data, billing data, and information needed to participate in demand
43 management programs of all types.

44 **Q. HAS MISSION:DATA BEEN INVOLVED WITH THE DEVELOPMENT OF**
45 **DATA-SHARING PLATFORMS IN CALIFORNIA?**

46 A. Yes. I was involved with the Customer Data Access proceeding in 2012-2013,
47 which resulted in D.13-09-025. More recently, I was a regular attendee of Customer
48 Data Access Committee meetings.

49 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.**

50 A. To further the Commission’s objectives regarding third party demand response
51 and ensure high-performing CTPs, I have four recommendations:

- 52 1. **The IOU proposals should incorporate a Service Level Agreement (“SLA”)**
53 **to ensure accountability.** As the business proverb says: *Hope is not a strategy.*
54 For the IOUs’ click-through platforms to operate at a level consistent with industry
55 norms, the Commission needs to condition cost recovery on attaining
56 performance.
- 57 2. **As a condition of approving the applications, the IOUs should be prohibited**
58 **from changing the customer-facing authorization experience without**
59 **notification to stakeholders and Energy Division approval.** Modifications to
60 the standard and expected online authorization process, and specifically the

61 customer experience, have been made by SCE and are proposed by SDG&E,
62 and further changes could be made in the future by any IOU. These deviations,
63 even if minor, risk going against the Commission's orders in D.16-06-008 to
64 prevent "enrollment fatigue"¹ and in D.16-09-056 to "eliminate barriers to data
65 access,"² and Energy Division approval is necessary to prevent changes that
66 could be potentially disruptive.

67 3. **Two features of SDG&E's proposal, totaling \$205,523, should be funded by**
68 **shareholders because SDG&E should have implemented them previously.**

69 SDG&E proposes two features, a dedicated test environment and an automated
70 way for DRPs to check the status of existing authorizations, that are expected of
71 an IT system of this type and should have been implemented previously by
72 SDG&E.

73 4. **The IOUs should have a common, public-facing website to communicate**
74 **CTP outages and maintenance announcements.** While SDG&E describes it
75 has implemented a "communication plan" with DRPs, this approach is
76 inadequate because it is not public-facing nor is it aligned with the other IOUs. A
77 common, state-wide, publicly-accessible website for communicating planned and
78 unplanned outages is a necessary solution and serves as an accountability tool.

¹ California Public Utilities Commission. Decision D.16-06-008, *Decision Addressing Budgets for Day-Ahead, Real-Time, and Ancillary Services During the Intermediate Implementation Step of Third-Party Demand Response Direct Participation*. June 16, 2016 at FoF22-23, 25 and OP9.

² California Public Utilities Commission. Decision D.16-09-056, *Decision Adopting Guidance for Future Demand Response Portfolios and Modifying Decision 14-12-024*. October 5, 2016 at OP8.

79

II. RECOMMENDATION #1: SERVICE LEVEL AGREEMENT

80

Q. PLEASE DESCRIBE YOUR FIRST RECOMMENDATION.

81

A. My first recommendation is that, as a condition of cost recovery, the IOUs should

82

be required to adhere to the terms of a service level agreement (“SLA”). Adherence to

83

an SLA is both appropriate and necessary in order for the Commission to hold the IOUs

84

accountable for their expenditures, which will ultimately be borne by ratepayers.

85

Q. WHAT IS A SERVICE LEVEL AGREEMENT?

86

A. An SLA specifies the performance of an information technology (“IT”) system. It

87

is the norm in IT agreements between a user and an IT platform provider. In my 10-year

88

experience as a software executive, I was expected to commit to meeting system

89

availability requirements and responsiveness to bugs or issues as a routine contractual

90

matter.

91

An SLA generally has the following components: (1) an “uptime” requirement; (2)

92

requirements for responding to users – in this case, DRPs – and remedying system

93

defects according to a schedule; (3) penalties for non-compliance; and (4) establishing

94

communication methods for providing support and notifications of system outages. I

95

have specific proposals for each of these four items outlined in Exhibit __ (MM-1).

96 **Q. WHY IS A SERVICE LEVEL AGREEMENT NECESSARY IN YOUR VIEW?**

97 A. Efforts to improve the performance of the IOUs' IT systems involved with direct
98 participation demand response have been underway in California for at least five years.³
99 While progress has been made in many areas, such as the user experience and
100 responsiveness of IT systems, the IOUs' CTPs are not without flaws, as I describe
101 below. Sporadic outages, glitches, and errors still occur, and these problems impose
102 costs on DRPs and utilities alike. The best solution is not to pretend that defects and
103 glitches do not exist or will never exist but rather to acknowledge them, plan for them,
104 and implement systems and processes to address them in a timely manner.

105 One of the important roles played by the California Commission is to mimic
106 competitive pressure that utilities would experience in a hypothetical competitive
107 market. Since unfettered monopolies are inclined to charge exorbitant prices and deliver
108 sub-standard service, public utility commissions are designed to impose restraints and
109 discipline on regulated monopolies in order to approximate those pressures
110 experienced in a competitive environment. With regard to IT systems, competitive
111 pressures drive not only price reductions but also improvements in service quality. By
112 evaluating the CTPs' performance against the SLA I have proposed, the Commission
113 can effectively simulate the competitive discipline that would exist if DRPs and utilities
114 were to negotiate in a hypothetical free market in which the IOUs were not monopolies.

³ See, e.g., Applications A.14-06-001, -002, -003 filed June 2, 2014.

115 **Q. WHAT PERFORMANCE PROBLEMS HAVE BEEN SEEN IN THE PAST?**

116 A. The problems experienced by DRPs receiving energy-related information from
117 SCE and SDG&E have included prolonged unplanned system outages, missing data,
118 incorrect data, inexplicable terminations of data flows and inconsistent response times.⁴
119 For example, SDG&E revealed in discovery a history of numerous unplanned outages
120 which have not been made public. Significant outages of various types occurred
121 February 5 – March 1, 2019 (24 days), May 16 – 22, 2019 (6 days), May 31 – June 5,
122 2019 (5 days), and June 14 – 24, 2019 (10 days).⁵ Furthermore, according to publicly-
123 available performance metrics (but not reported by SDG&E in a discovery response),
124 SDG&E directed some 569 customers to a “System Down” web page in the period June
125 5-13, 2019.⁶ These are significant outages, lasting many days at a time, that indicate
126 SDG&E is not prudently managing its IT systems.

127 SCE, for its part, should be commended for acknowledging many of its shortfalls that
128 have occurred to date. The first step to improvement is recognition that there is a
129 problem. In updated testimony, SCE stated:

⁴ See, e.g., *Comments of OhmConnect, Inc. on August 8, 2017 IEPR Commissioner Workshop on Demand Response*. California Energy Commission, Docket No. 17-IEPR-12, dated August 22, 2017; *Complaint of OhmConnect, Inc. vs. Southern California Edison Company for Data Failures*, C19-03-005 filed March 8, 2019.

⁵ Exhibit ___ (MM-2), SDG&E response to Mission:data Coalition 1st data request dated September 2, 2020.

⁶ Exhibit ___ (MM-3), Google Analytics report.

- 130 • “SCE has learned that its existing data platform does not provide adequate
131 functionality or capacity to accommodate the enhancements contemplated in OP
132 29.”⁷
133 • “SCE acknowledges that there have been challenges in its data delivery
134 processes, specifically with RQMD files...”⁸

135 To its credit, SCE is proposing investments for a cloud-based infrastructure that
136 promises to eliminate many, if not most, of the issues it has experienced to date.
137 Nevertheless, despite the promise of improvement in the future, an SLA is appropriate
138 for all the IOUs to ensure a baseline level of performance and to provide confidence to
139 the Commission that it is getting the most value for ratepayers’ investments.

140 **Q. WHAT ARE SDG&E’S CLAIMS ABOUT ITS PERFORMANCE?**

141 A. SDG&E states it provides “a seamless way to authenticate and authorize third-
142 party receipt of the customer’s information,”⁹ that “The current CTP is working precisely
143 as envisioned,”¹⁰ and that “SDG&E believes these metrics [web pages load within 3
144 seconds and over 29,000 authorizations have been granted from July 2018 to October
145 2020] demonstrate strong CTP performance during the first twenty seven months of

⁷ Updated Testimony of Southern California Edison Company in Support of its Application in Compliance with Ordering Paragraph 29, Resolution E-4868, Seeking Cost Recovery for Improvements to the Click-Through Authorization Process. November 13, 2020 at 2:4-6.

⁸ *Id.* at 27:20-22.

⁹ Updated Prepared Direct Testimony of Douglas S. White, Chapter 1, on Behalf of San Diego Gas & Electric Company. November 13, 2020 at 11:4-6.

¹⁰ Updated Prepared Direct Testimony of Neil Umali, Chapter 2, on Behalf of San Diego Gas & Electric Company. November 13, 2020 at 3:6.

146 CTP operations.”¹¹ However, it is hard to reconcile those claims with SDG&E’s history of
147 repeated unplanned outages, described above, which negatively affected both
148 customers and DRPs.

149 In updated testimony, SDG&E describes the response times from synchronous
150 data requests for the period July 1 to September 23, 2020.¹² While the statistics
151 provided appear to be favorable, drawing overall conclusions about the performance of
152 the CTP from these statistics in isolation would be unwise because the timeframe
153 selected was quite limited and delivery of the synchronous data set is only one
154 component of the CTP.

155 **Q. WHAT ARE THE DETAILS OF THE SLA YOU PROPOSE?**

156 A. First, I propose an uptime requirement (also known as “availability”) of 99.8%.
157 This means that the CTP shall be useful and available for both customers and DRPs
158 without severe errors or system defects 99.8% of the time. I also describe an accuracy
159 requirement of 99.8%, meaning 99.8% of data delivered to a DRP shall be the correct
160 data for the correct customer. The accuracy requirement prevents time-consuming
161 efforts such as debugging, data cleaning and re-transmission that occur when incorrect
162 data are transmitted to the DRP.

163 Second, I define scheduled maintenance windows. Scheduled maintenance
164 windows must be announced fourteen (14) days in advance and shall not exceed 30

¹¹ Updated Prepared Direct Testimony of Tom Moses, Chapter 3, on Behalf of San Diego Gas & Electric Company. November 13, 2020 at 5:12-13.

¹² *Id.*, Table TM-2 at 6.

165 hours per year. The uptime metric described above is calculated by excluding
166 scheduled maintenance windows.

167 Third, I propose timelines for issue resolution based upon issue severity. It is
168 normal and expected for severe defects to receive high priority and mild defects to
169 receive a lower priority. I specify timelines for the IOUs to acknowledge an issue,
170 provide status updates to the DRP, and finally to resolve the issue.

171 Fourth, I propose penalties that increase as performance decreases. In a
172 competitive market, failure to meet an SLA typically results in refunds paid to the user.
173 However, since ratepayers are funding the CTPs in a regulated environment, I have
174 proposed that breaches of the SLA result in rescission of the presumption of prudence
175 associated with a percentage of the IOUs' total CTP funding for which an IOU seeks
176 cost recovery in the next rate case. This puts the burden back on the IOU to prove in its
177 next rate case that its expenditures were reasonable. The Commission can then decide
178 whether and to what extent cost recovery is warranted.

179 Finally, the SLA I propose includes limitations that excuse performance failures
180 associated with (i) force majeure events and (ii) the advanced metering infrastructure
181 ("AMI") communications network.

182 **Q. WHY DO YOU BELIEVE THE SLA YOU PROPOSE IS APPROPRIATE?**

183 A. In my experience as a software executive, it is normal and expected for IT
184 platform providers to commit to an SLA. In fact, the lack of an SLA altogether usually
185 indicates that the platform provider does not have the expertise, business processes, or
186 wherewithal to deliver. In a competitive environment, users of a platform demand SLAs

187 because business processes and costs will vary significantly based upon the expected
188 uptime. 95% uptime vs. 99% uptime is a massive difference; 95% uptime implies
189 outages of over 18 days per year, or 438 hours, when a platform is wholly unusable.

190 In my experience, I have seen SLAs of “three nines” (99.9%) for many cloud-
191 based service providers. That is consistent with major cloud providers Microsoft,¹³
192 Oracle¹⁴ and Amazon,¹⁵ who guarantee 99.9%+ uptime. However, I understand that
193 CTPs are composed of many applications working together, and cloud hosting uptime is
194 perhaps too aggressive to be applied to CTPs. Therefore, I recommend 99.8% for both
195 an uptime and accuracy requirement. This standard is more lenient than that offered by
196 major cloud providers – it permits downtime of 44 hours per year, or 1.8 days – but it
197 ensures that the IOUs are under reasonable pressure to deliver value with ratepayer
198 funds.

199 As for the penalty structure, I note that it is more utility-friendly than many cloud
200 providers’ SLAs. For example, Amazon grants a full, 100% refund should uptime fall
201 below 95.0%;¹⁶ I propose only a 50% rescission of the presumption of prudence.
202 Furthermore, unlike with competitive firms, the IOUs have the opportunity to argue for
203 full cost recovery in a future rate case.

204

¹³ <https://azure.microsoft.com/en-us/support/legal/sla/summary/>

¹⁴ <https://www.oracle.com/cloud/iaas/sla.html>

¹⁵ <https://aws.amazon.com/compute/sla/>

¹⁶ *Id.*

205 **III. RECOMMENDATION #2: NO CHANGES TO CUSTOMER-FACING**
206 **AUTHORIZATION EXPERIENCE WITHOUT ENERGY DIVISION APPROVAL**

207 **Q. PLEASE DESCRIBE YOUR SECOND RECOMMENDATION.**

208 A. I am concerned that IOUs could make modifications to the customer-facing
209 authorization experience, without oversight, that would result in negative outcomes for
210 customers and DRPs. This could go against Commission directives to prevent
211 “enrollment fatigue” and to “eliminate barriers to data access,” as I stated earlier.¹⁷
212 Therefore, it is appropriate to make the IOUs’ applications subject to the limitation that
213 the IOUs may not make modifications to the customer-facing authorization experience
214 without Energy Division approval.

215 **Q. WHAT CHANGES HAVE SCE MADE TO THE CUSTOMER-FACING**
216 **AUTHORIZATION EXPERIENCE?**

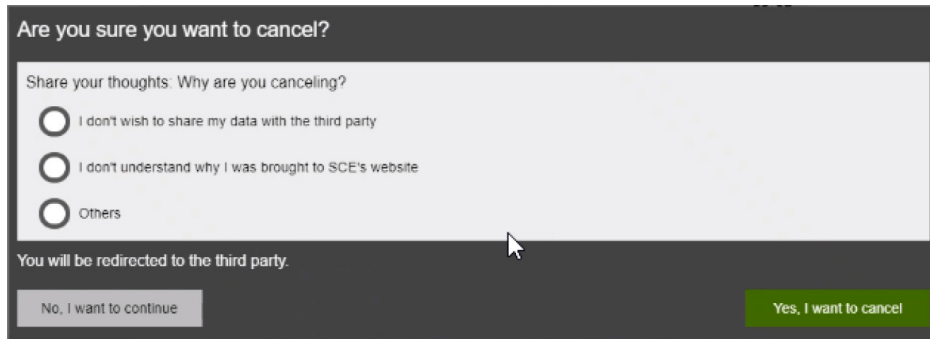
217 A. SCE has inserted a survey into its customer authorization process. According to
218 SCE’s updated testimony, SCE:

219 sought to gain insight on customer abandonment related to the SCE.com
220 authorization process. To achieve this objective the SCE Phase 2.1 scope was
221 expanded to implement a survey to obtain information as to why customers did
222 not complete authorizations...¹⁸

¹⁷ See footnotes 1 and 2 *infra*.

¹⁸ *Updated Testimony of Southern California Edison Company* at 9:22-23.

223 A screenshot of the modification, obtained in discovery and presented as Exhibit ____
224 (MM-4), is provided below.



225

226 *Figure 1: Survey added by SCE to the customer authorization process.*

227 **Q. IS THAT CHANGE APPROPRIATE IN YOUR VIEW?**

228 A. No. However well-intentioned, this type of change to the user experience – even
229 for a customer declining to grant an authorization – is a departure from the standard
230 process with which customers are familiar. If IOUs are permitted to unilaterally make
231 changes to the customer experience without Energy Division approval in the future,
232 there could be negative consequences. The IOUs could diminish the user experience in
233 various ways, at both customers' and DRPs' expense, to test various hypotheses
234 without consulting Energy Division or DRPs. This would be disruptive and
235 counterproductive, particularly when the customer experience has already been heavily
236 litigated in the past.

237 **Q. WHAT IS YOUR VIEW ON THE VALIDITY OF THE SURVEY RESULTS?**

238 A. I think they are of little value because it was not a properly designed survey. For
239 example, there were only three options presented to the customer: "I don't wish to share

240 my data with the third party” and “I don’t understand why I was brought to SCE’s
241 website” and “Others.” Many customers will simply click the first option and exit because
242 it is the easiest thing to do. As a result, drawing conclusions from the results presented
243 by SCE is highly dubious. If SCE wanted to obtain more meaningful opinions of its
244 customers, it should solicit a subset of customers by email, telephone or mail and
245 randomize the order of possible responses and types of phrasing in order to reduce
246 bias.

247 **Q. WHAT CHANGE TO THE CUSTOMER EXPERIENCE DOES SDG&E**
248 **PROPOSE?**

249 A. SDG&E proposes to “pre-screen” for enrollment conflicts by denying a customer
250 the ability to grant an authorization if the customer is already participating in one or
251 more SDG&E demand response programs.¹⁹

252 **Q. IS THAT A PROBLEM IN YOUR VIEW?**

253 A. Yes. SDG&E has not provided examples or screenshots and, as with SCE,
254 SDG&E’s pre-screening could have unintended negative consequences such as
255 improperly disqualifying customers from using DRPs services or harming the user
256 experience. While we understand SDG&E is seeking to save customers time, it must be
257 recognized that conflicts between utilities and DRPs over customer eligibility have

¹⁹ Updated Prepared Direct Testimony of Tom Moses, Chapter 3, on Behalf of San Diego Gas & Electric Company at 10:14 – 11:3.

258 existed in the past. It would be wise to maintain the current process and deny SDG&E
259 the authority to make changes to its authorization experience that have not been
260 thoroughly vetted by DRPs, stakeholders, Energy Division and the Commission.

261 **IV. RECOMMENDATION #3: CERTAIN SDG&E FEATURES SHOULD BE**
262 **IMPLEMENTED AT SHAREHOLDERS' EXPENSE**

263 **Q. PLEASE DESCRIBE YOUR THIRD RECOMMENDATION.**

264 A. SDG&E proposes to offer a dedicated test environment to DRPs as well as an
265 automated method for DRPs to determine the status of an authorization – for example,
266 whether a customer has revoked an authorization, or the customer moved out of a
267 premise and closed their utility account, etc. I strongly support the creation of these
268 tools; however, I recommend that SDG&E's shareholders, not ratepayers, should pay
269 for them because by the standard of modern IT practice they should have been offered
270 many years ago. If the Commission were to grant cost recovery now for these two
271 components, it would excuse SDG&E's poor management in the past.

272 **Q. WHAT IS SDG&E'S PROPOSED TEST ENVIRONMENT?**

273 A. SDG&E proposes to offer a "dedicated test environment" so that "DRPs can
274 quickly integrate and test the CTP after they register with SDG&E."²⁰ SDG&E proposes

²⁰ Updated Prepared Direct Testimony of Tom Moses, Chapter 3, on Behalf of San Diego Gas & Electric Company at 6:12-13.

275 to spend \$17,373 in labor and \$36,203 in non-labor costs, for a total of \$53,576, on the
276 dedicated test environment.

277 **Q. WHAT JUSTIFICATION DOES SDG&E PROVIDE FOR THIS TEST**
278 **ENVIRONMENT?**

279 A. SDG&E provides only three brief paragraphs of justification.²¹ SDG&E does not
280 explain why it has not yet provided a fully-functional test environment to DRPs or what
281 SDG&E's shortfalls have been that the proposed test environment is designed to
282 remedy.

283 **Q. SHOULD SDG&E HAVE OFFERED THE TEST ENVIRONMENT BEFORE?**

284 A. Yes, definitely. It is standard practice for any modern IT platform that serves
285 various entities to offer a test environment. Testing is critical for DRPs to understand
286 how the platform operates, how to debug their software, and how the operation of the
287 platform might deviate in small but important ways from the available technical
288 documentation. Although the cost of this test environment is relatively modest in
289 SDG&E's updated testimony, it would be inappropriate on principle to ask ratepayers to
290 fund such a critical and obvious part of an IT platform. SDG&E's CTP has been
291 operating for at least three years, and the absence of a testing environment until now
292 represents poor practices on SDG&E's part.

²¹ *Id.* at 6-7.

293 **Q. WHAT DOES SDG&E PROPOSE REGARDING THE STATUS OF**
294 **AUTHORIZATIONS?**

295 A. SDG&E proposes to offer an automated way for DRPs to interrogate the status of
296 individual authorizations. SDG&E states that it “already offers details of a customer’s
297 authorization as part of the current CTP data set. However, the data set does not
298 provide the status of the authorization.”²² For example, a DRP might not be receiving
299 data for a given set of customers, and the status could be that the customer’s utility
300 account was closed, the authorization has expired, or various other reasons. This
301 information is important to DRPs because it allows them to plan business processes
302 appropriately and determine which customers may need to be contacted to continue the
303 service versus those customers who have closed their accounts and moved out of the
304 utility’s territory.

305 **Q. IS THIS FUNCTIONALITY NECESSARY?**

306 A. Yes, absolutely. In fact, it is stunning that SDG&E has not provided this
307 functionality to date, given the volume of authorizations it has processed (some 30,000
308 to date), some percentage of which are affected by revocations, expirations, etc.

²² *Id.* at 8:4-6.

309 **Q. IS THIS FUNCTIONALITY EXPECTED?**

310 A. Any high-volume transaction IT system, such as the CTP, is reasonably expected
311 to have a programmatic method to determine the status of individual authorizations.
312 Otherwise, the DRP would have to revert to manual, one-off communications with a
313 utility via telephone, email, etc. to resolve questions on individual customer
314 authorizations. Questions on individual authorizations could number in the hundreds or
315 thousands, creating significant unnecessary administrative costs for both IOUs and
316 DRPs. As a former software executive, I struggle to fathom why SDG&E would have
317 neglected to provide this capability in the past.

318 I also note that the Green Button standard, on which SDG&E partially relies for
319 its CTP,²³ calls for an automated inquiry method on authorization statuses. For
320 example, in the publicly-available certification tests for Green Button, there is a test for
321 providing an automated response to inquiries about authorization statuses.²⁴ This
322 functionality has existed in the Green Button standard since 2015 if not earlier, providing
323 another reason supporting my assertion that SDG&E should have provided this
324 functionality already.

²³ Although SDG&E's CTP is not designed to be Green Button-certified, SDG&E uses the Green Button file for exchanging historical and ongoing energy usage information, and SDG&E also uses OAuth2.0 for its CTP, which is part of the Green Button standard.

²⁴ See REQ21.6.2 in Function Block #3, TestID FND004, row 184, "Authorized GET access to Authorization entry."

<https://osqug.ucaiug.org/sqsystems/OpenADE/Shared%20Documents/Testing%20and%20Certification/GreenButtonTestPlan/GreenButtonTestCases.xlsm>

325 **Q. HOW MUCH DOES THIS FUNCTIONALITY COST?**

326 A. SDG&E proposes to spend \$46,207 in labor cost and \$105,740 in non-labor
327 costs to provide authorization statuses, for a total amount of \$151,947.

328 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATION.**

329 A. SDG&E exhibited poor practices by neglecting to include authorization statuses
330 in a high-volume system and to offer a test environment to DRPs. Asking ratepayers to
331 fund these expenses now – for a total of \$205,523 – is inappropriate because it would
332 absolve SDG&E for its sub-par behavior. DRPs have managed to work around
333 SDG&E's failures to date, but that accommodation should not lead the Commission to
334 relinquish its oversight role to set reasonable expectations for IT systems in the modern
335 world. By requiring SDG&E's shareholders, rather than ratepayers, to pay for these two
336 essential features, the Commission can further its objective of supporting third party
337 demand response in California while minimizing ratepayer impacts.

338 V. **RECOMMENDATION #4: THE IOUS SHOULD HAVE A COMMON, PUBLIC-**
339 **FACING WEBSITE TO COMMUNICATE CTP OUTAGES AND MAINTENANCE**
340 **ANNOUNCEMENTS**

341 Q. PLEASE DESCRIBE YOUR FOURTH AND FINAL RECOMMENDATION.

342 A. Finally, I recommend that the IOUs create a single, unified public-facing website
343 in order to communicate about CTP outages and provide maintenance announcements
344 to DRPs and customers. This should be a condition of approving the IOUs' applications.

345 Q. PLEASE DESCRIBE THE BENEFITS OF THIS APPROACH.

346 A. While individual communications between the IOUs and DRPs via email or
347 telephone are necessary to work through technical and interoperability issues, they are
348 not sufficient. It is the norm in the industry for digital platform operators to provide a
349 website showing the status of their online systems' components. A public website
350 provides a single location for announcing scheduled and unscheduled maintenance
351 windows, reducing unnecessary communication between DRPs and IOUs when an
352 outage occurs. A website would also benefit firms who are considering becoming a DRP
353 but want to understand the cadence of outages and maintenance in order to plan
354 appropriately. Finally, a public-facing website helps the Commission execute its
355 oversight role and resolve disputes that may arise between DRPs and IOUs regarding
356 the operation of the CTPs.

357 **Q. HOW IS THIS DIFFERENT FROM THE IOUS' PERFORMANCE METRIC**
358 **TRACKING WEBSITES?**

359 A. The website I propose would display outage information. Currently, outages –
360 either planned or unplanned – are not provided in the IOUs' existing tracking websites.
361 For example, SCE's does not provide this information at all.²⁵ For SDG&E, Google
362 Analytics is used, but it only reports on the web pages visited by customers. It may be
363 possible to determine a customer-facing outage by the appearance of website "hits" to
364 an "error" web page, as I showed in Exhibit __ (MM-3), but outages associated with
365 data delivery processes are excluded from SDG&E's Google Analytics. Therefore, the
366 public website I propose are not duplicative and would complement the IOUs' existing
367 performance metric tracking websites.

368 **VI. CONCLUSION**

369 For the reasons stated above, I urge the Commission to adopt the recommendations
370 presented herein.

371

372

²⁵ <https://www.sce.com/PerformanceMetrics>

373 **VII. STATEMENT OF QUALIFICATIONS OF MICHAEL MURRAY**

374 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

375 A. My name is Michael Murray. I am the President of Mission:data Coalition
376 (“Mission:data”). My business address is 1752 NW Market Street #1513, Seattle, WA
377 98107.

378 **Q. BRIEFLY DESCRIBE YOUR PRESENT EMPLOYMENT.**

379 A. I co-founded Mission:data in 2013 and have led our efforts to intervene at public
380 utility commissions in 15 states as well as the District of Columbia on issues of
381 advanced meters, data privacy and the benefits of electronic access to energy usage
382 data. I intervened at the California Public Utilities Commission in 2012-2013 in A.12-03-
383 002 et al., which institute the first state-wide implementation of Green Button Connect
384 My Data.

385 **Q. PLEASE SUMMARIZE YOUR PROFESSIONAL AND EDUCATIONAL**
386 **BACKGROUND.**

387 A. I began my career in 2004 as co-founder and CEO of Lucid, an energy
388 management software company for commercial buildings, where I grew the company
389 from zero to 40 employees, raised \$10 million in venture capital and recruited board
390 members from Apple, Intuit and Bear Stearns. Lucid offers a cloud-based service that
391 analyzes real-time meter data from thousands of commercial buildings across North
392 America to support energy efficiency. Lucid’s customers include over 350 organizations,
393 eight of the eight Ivy League universities and others. I hold two U.S. patents relating to

394 energy data collection, sharing and analysis, #8,176,095 and #8,375,068. I earned a
395 B.A. with highest honors from Oberlin College in 2004.

396 **Q. HAVE YOU PREVIOUSLY TESTIFIED ON BEHALF OF MISSION:DATA**
397 **COALITION BEFORE THE CALIFORNIA PUBLIC UTILITIES COMMISSION?**

398 A. Yes. I provided testimony in A.18-11-005, an application of Southern California
399 Gas Company to implement a demand response program.

400 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

401 A. The purpose of my testimony is to sponsor Exhibit Mission:data-1, the Prepared
402 Direct Testimony of Michael Murray for Mission:data Coalition in A.18-11-015
403 (consolidated), and Exhibits __ (MM-1) through __ (MM-4).

404 **Q. WAS EXHIBIT MISSION:DATA-1 PREPARED BY YOU OR UNDER YOUR**
405 **SUPERVISION?**

406 A. Yes.

407 **Q. ARE THE STATEMENTS MADE IN YOUR TESTIMONY TRUE AND CORRECT**
408 **TO THE BEST OF YOUR KNOWLEDGE AND BELIEF?**

409 A. Yes.

410 **Q. TO THE EXTENT EXHIBIT MISSION:DATA-1 CONTAINS EXPRESSIONS OF**
411 **OPINION, DO THEY REPRESENT YOUR BEST PROFESSIONAL JUDGMENT?**

412 A. Yes.

413 **Q. DO YOU ADOPT EXHIBIT MISSION:DATA-1 AS YOUR SWORN TESTIMONY**

414 **IN A.18-11-015 ET AL.?**

415 A. Yes.

416 **Q. DOES THIS CONCLUDE YOUR STATEMENT OF QUALIFICATIONS?**

417 A. Yes.