ATTACHMENT A

SOCALGAS OVERVIEW OF DERS TARIFF PETITION FOR MODIFICATION

November 2020 Version Reviewed
on December 2, 2020

SoCalGas A Sempra Energy utility®

Overview of Distributed Energy Resources Services (DERS) Tariff - Petition for Modification

November, 2020

Agenda

- California's critical need for long duration, highly resilient energy solutions
- The DERS tariff can help meet the need for long duration, resilient solutions for SoCalGas customers
- Summary of proposed modifications to the DERS tariff
- Gaseous fuel technologies provide long duration, highly resilient solutions
- Benefits of proposed modifications to the DERS tariff

The need for long duration, highly resilient energy solutions

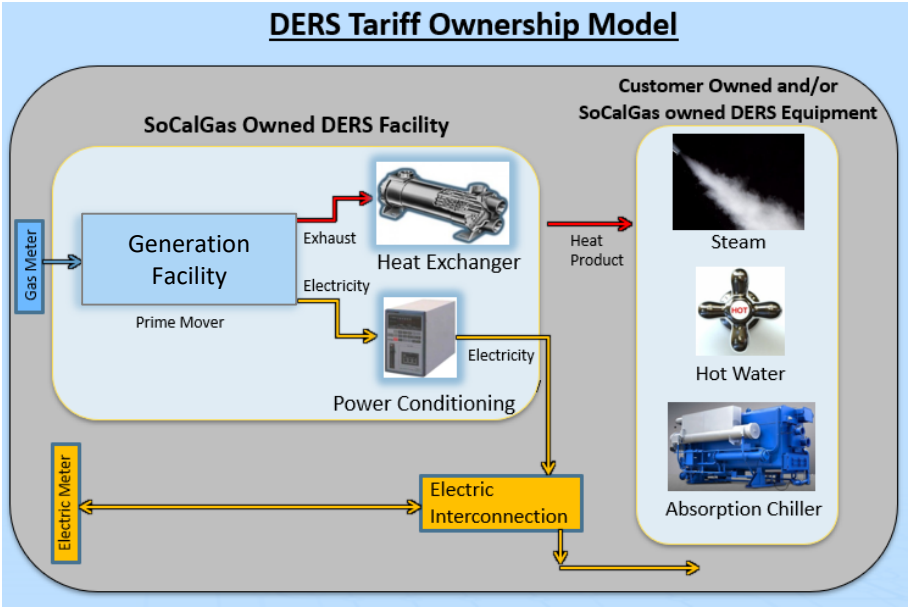
- **There is a demonstrated need for solutions to improve electric reliability and resiliency**
  - In 2019, approximately 2,300 Public Safety Power Shutoff (PSPS) events occurred combined in PG&E, SCE and SDG&E service territories. The average outage duration within SCE service territory was 30 hours
  - Increasing frequency of PSPS and recent reliability events raise the need to enhance energy reliability and resiliency in 2020 and beyond
  - CPUC and stakeholders are responding to this challenge by facilitating microgrid solutions, but a gap remains for funding and long duration/flexible clean technology solutions

- **Customer microgrid solutions connected to the gas system today are a low-carbon resiliency solution and can become a zero-carbon resiliency solution as fossil gas is displaced with renewable gas and green hydrogen**
  - Fuel cell technology can be utilized as a primary PSPS and reliability solution with 24/7 baseload and back-up capability, and have significant benefits to air quality as there are essentially zero criteria pollutant emissions released during operation
  - Other natural gas technologies using renewable gas can be utilized as an alternative solution for a small set of customers with small/fluctuating electric demand. These technologies can operate seamlessly to provide long duration resiliency during PSPS events and can be paired with storage/solar

- **The Distributed Energy Resources Services (DERS) tariff can provide a highly resilient solution to many different customer segments**
  1) Medium/large critical facilities (provide health, safety and/or other essential services to the community)
  2) Commercial customers with high resiliency needs

The DERS tariff can provide a highly resilient, long duration energy solution to customers

- **Overview of existing tariff**
  - Allows SoCalGas to install, own, operate, and maintain combined heat and power (CHP) and waste heat to power assets on customer premise
  - The tariff service fee charged to the customer includes CapEx and O&M
  - Program costs are funded by shareholders
  - Available to both commercial and residential customers (<20 MW)



- **Requested modifications to the existing DERS tariff**
  - Non-CHP technologies to be eligible under the tariff
  - Update the existing SGIP emission factors (no emission factor beyond 2020)

- **Timeline**
  - PFM was filed with the CPUC on October 20, 2020

* DERS Tariff Final Decision (D.)15-10-049 (Oct 2015), Final Resolution (G-3523) issued on 5/30/17

Summary of DERS tariff proposed modifications

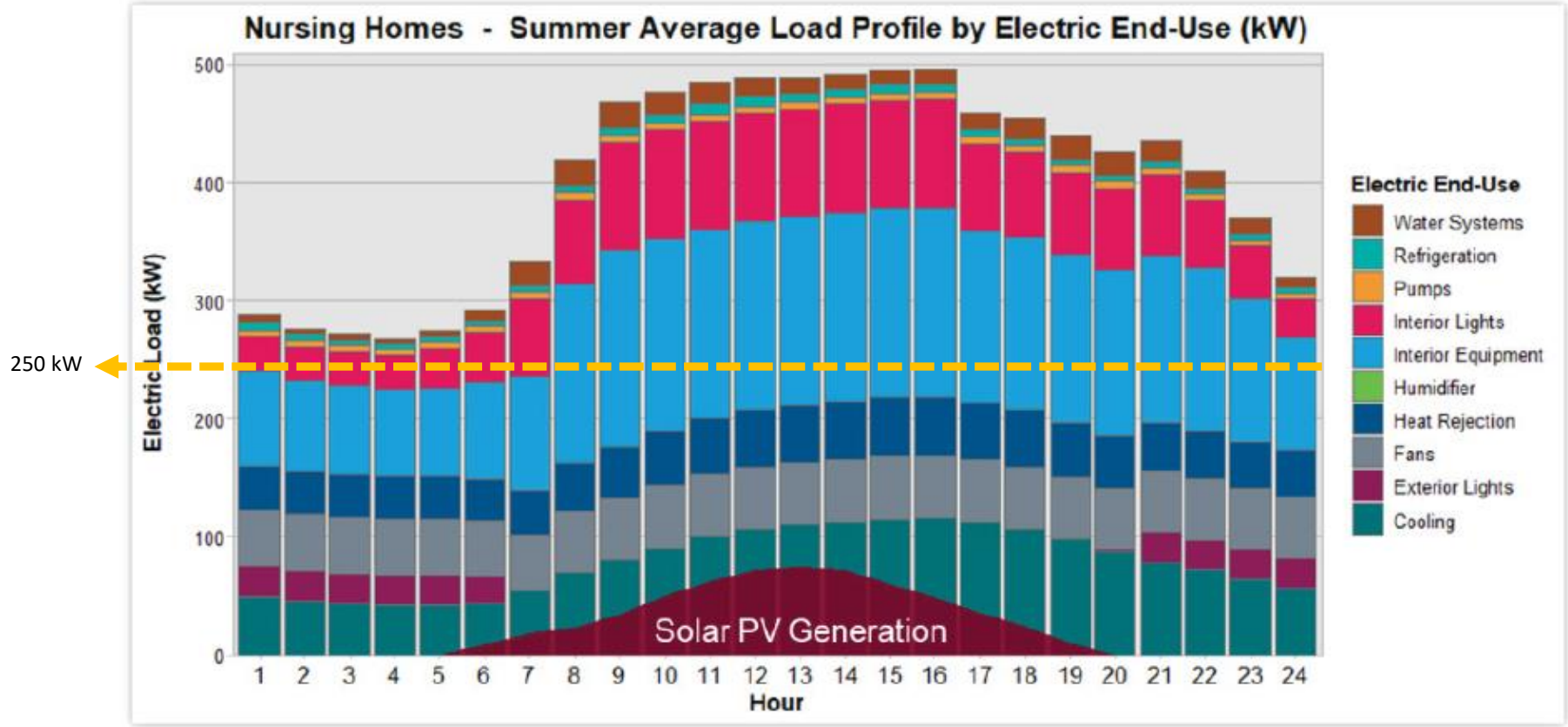
Topic	Current	Requested Modification	Support
Eligible technologies	▪ Combined heat and Power (CHP) ▪ Waste heat to power (WHP)	▪ Add non-CHP technologies (examples include) – fuel cell – NG backup generator – solar when installed with a gaseous fuel technology	▪ Allowing the DERS tariff to be technology neutral enables DERS tariff customers to receive the most effective solution based on their individual energy needs
GHG emissions factor	▪ Self-Generation Incentive Program (SGIP) emission standards	▪ Baseload 24/7 technologies – update the existing SGIP emission factors ▪ Back-up only technologies – baseline is diesel generators	▪ SGIP has an emission factor only through 2020

Gaseous fuel technologies provide long duration, highly resilient solutions

- SoCalGas commissioned ICF to analyze onsite power applications at critical facilities and commercial facilities with high resiliency needs in the SoCalGas service territory*
- ICF study conclusion: To minimize emissions while maximizing resiliency and maintaining favorable economics, a combination of a 24/7 gaseous fuel technologies, PV, and energy storage is likely to provide the most benefits

Example scenario under the PFM

- Customer could install a ~250 kW fuel cell along with solar to provide power 24/7, 365 days/year
- Fuel cell continues to operate during an electric grid outage to provide backup power



* Executive Summary of ICF study is included in the PFM filing

Benefits of proposed modifications to the DERS tariff

- **Climate and air quality** – DERS tariff facilities can mitigate the use of back-up diesel generators (reduction of GHG's and criteria pollutants)

Natural Gas Fuel Cells Emit:
50[2] – 69%[2] less carbon[1]
Nearly 100% less NOX[2]
Nearly 100% less PM 10[3]

…..than diesel generators

Natural Gas Standby Generators Emit:
18% less carbon[1]
39% less NOX[1]
96% less PM 10[1]

…..than diesel generators

- **Provides community and customer energy resiliency during grid outages**
  - critical facilities can continue to provide essential services to the community
  - commercial customers can continue to keep their doors open
- **No ratepayer impact** - only those customers participating in the DERS tariff will incur the costs of these services
- **Customer energy savings** – 24/7 baseload solutions can provide energy savings while providing the added benefit of long duration, highly resilient back-up power
- **Best fit solutions can be delivered now** – every customer has different individual energy needs and expanding the eligible technologies will ensure customers can receive the most effective solution when considering costs, emissions and long duration resiliency

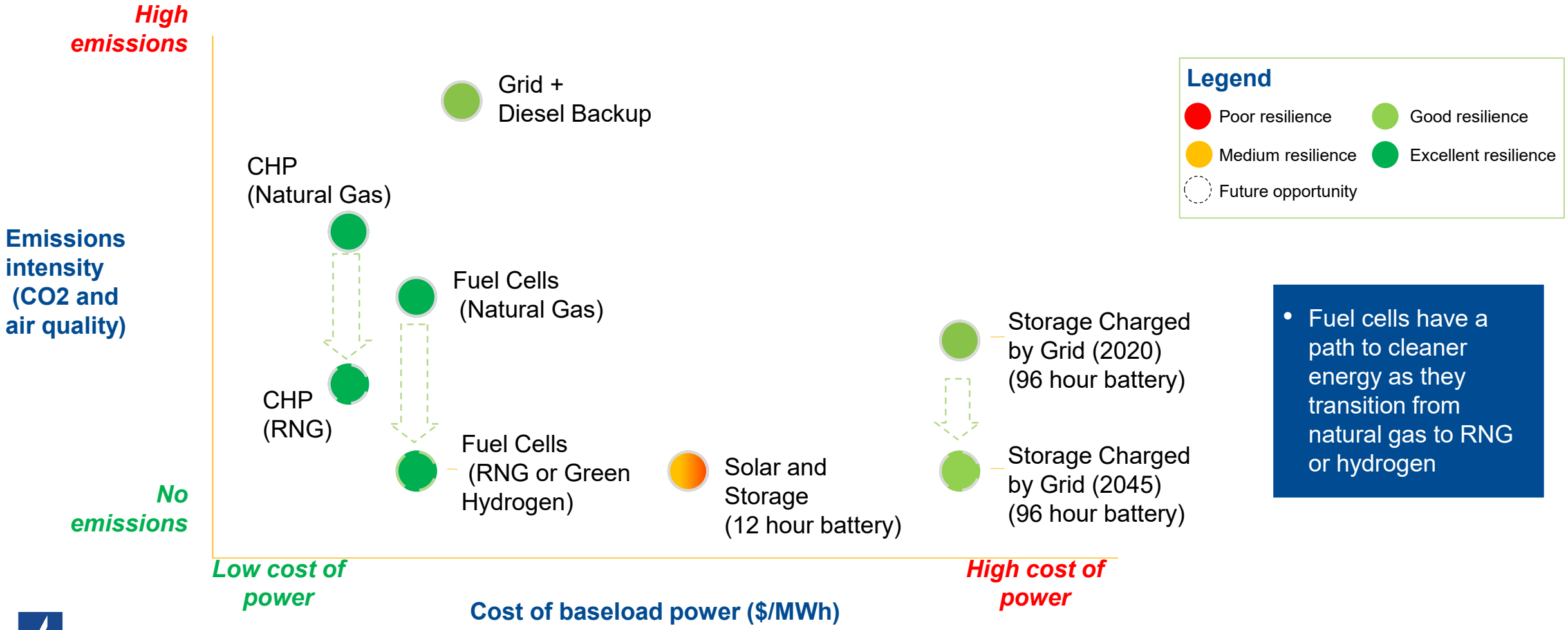
[1] https://urldefense.proofpoint.com/v2/url?u=https-3A__www.epa.gov_sites_production_files_2016-2D09_boilers-5Fand-5Femergency-5Fengines-5Fpte-5Fcalculator-5Fversion-5F1.0.xlsx&d=DwMFAg&c=oBiQyooBvnd4iujXa1WDRw&r=sGXQ9YB5o4MjVxLl7y98odkL9xqduuo-Usqi3BTflRg&m=nONCzv_g1TRaDcpUgorKGO7VX9KMyiK0IpJESKX9DFQ&s=If9zHTuyUEV5e7L0t--JGlO-4faGAfFxpaurw9reNfk&e=
[2] https://www.bloomenergy.com/datasheets/energy-server-es5-200kw
[3] http://www.doosanfuelcellamerica.com/download/pdf/catalog/pafc-400kw_us_en.pdf

Thank You

Appendix

Fuel cells offer premium resiliency today and a pathway to zero-emissions resiliency tomorrow

Comparison of emissions intensity, cost of baseload power, and level of resiliency offered



- Fuel cells have a path to cleaner energy as they transition from natural gas to RNG or hydrogen

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Market analysis – Critical facilities

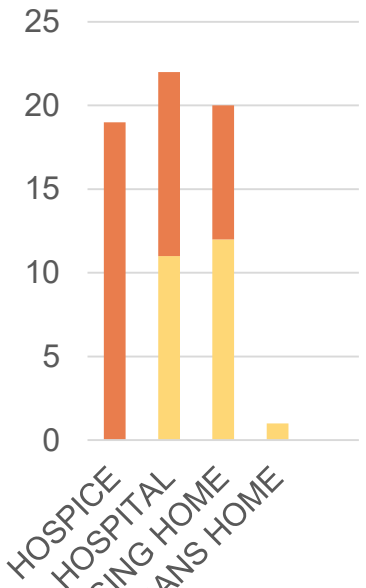
Technical potential of ~125 MW in tier 2 and 3 fire threat areas, across over 800 facilities

Fire risk tier
- Tier 2 - Elevated
- Tier 3 - Extreme

Healthcare

- Hospice
- Hospital
- Nursing Home
- Veterans Home

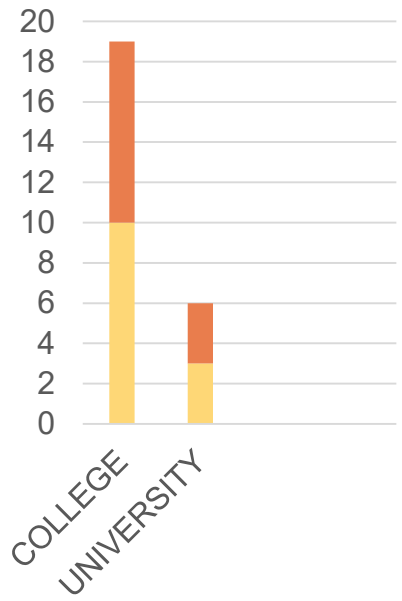
Total ~ 60



Schools

- College
- University

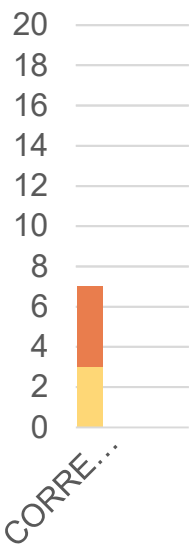
Total ~ 25



Prisons

- Correctional Institutions

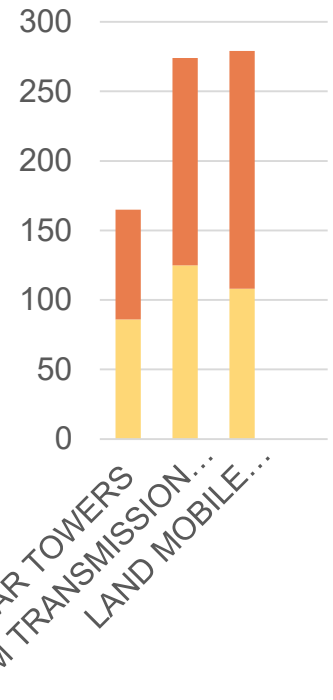
Total ~ 7



Communications

- FM Transmission Towers
- Cellular Towers
- Land Mobile Broadcast Towers

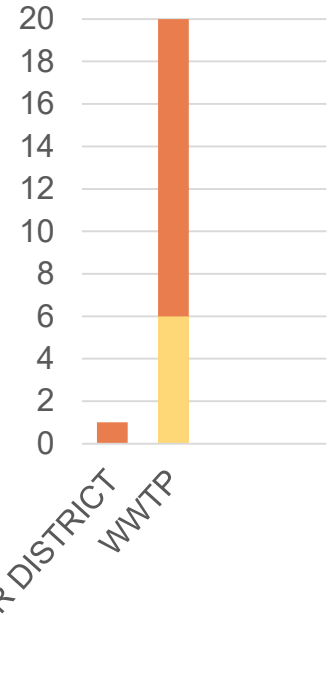
Total ~720



Water and Wastewater

- Water District
- Wastewater Treatment Plant

Total ~ 20

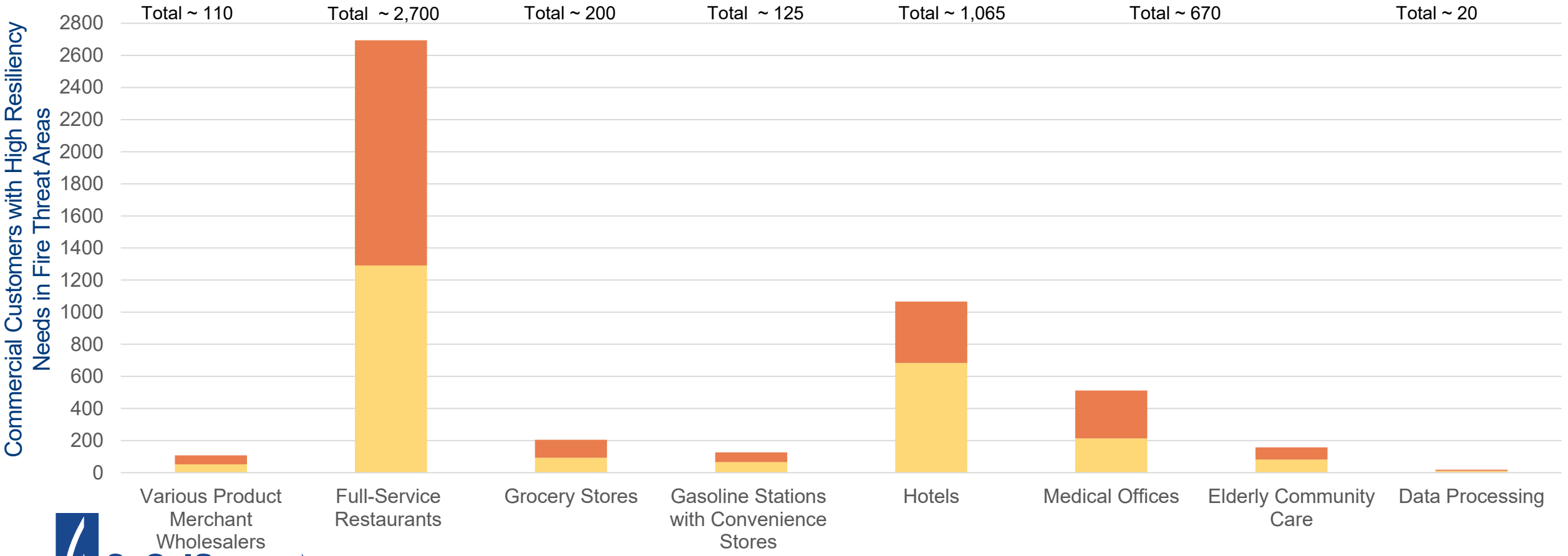


Market analysis – Commercial customers with high resiliency needs

Technical potential of ~1,200 MW in tier 2 and 3 fire threat areas, across over 4,800 facilities

Fire risk tier
- Tier 2 - Elevated
- Tier 3 - Extreme

Wholesalers	Restaurants	Grocery Stores	Gas Stations	Hotels	Healthcare	Data Center
• Various Types of Product Merchant Wholesalers	• Full-Service Restaurants	• Grocery Stores	• Gas Stations with Convenience Stores	• Hotels	• Medical Offices • Elderly Community Care	• Data Processing
Total ~ 110	Total ~ 2,700	Total ~ 200	Total ~ 125	Total ~ 1,065	Total ~ 670	Total ~ 20



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