ENERGY MANAGEMENT PLAN CONTRACT

THIS ENERGY MANAGEMENT PLAN CONTRACT (this "Contract") is made as of _____, 2017 (the "Execution Date") between San Diego Gas & Electric Company, a California corporation (hereinafter referred to as "SDG&E"), and the San Diego Unified Port District, (hereinafter referred to as the "District"). SDG&E and the District may be referred to individually as "Party" and collectively as "Parties."

R E C I T A L S

WHEREAS, the State of California promotes the efficient use of low-cost, low-emissions energy sources in the operations of its ports and harbors, including the District;

WHEREAS, there is an opportunity in the District operations, to reduce emissions of greenhouse gases and criteria pollutants;

WHEREAS, the State of California encourages the development of new businesses and the retention of existing businesses within port and harbor district boundaries such as the District;

WHEREAS, the State of California, as reflected in California Assembly Bill 628 (as codified in California Public Resources Code §25990) ("AB628"), has encouraged investor-owned utilities such as SDG&E to engage in joint projects with port and harbor districts such as the District to provide and administer energy-related service alternatives and programs that may promote economic development and retention in those districts;

WHEREAS, the District and SDG&E jointly desire to implement an energy management plan in accordance with AB628 that includes energy efficiency, clean energy, shorepower rate and other related elements as further described in this Contract to promote economic development and retention in the District;

WHEREAS, the District desires, in cooperation with SDG&E, to implement, and to encourage tenants of the District to implement, energy efficiency measures;

WHEREAS, the District's meter location providing electric shorepower service to cruise ships would receive a transparent discount that will result in an electric bill that is equivalent to being assessed a rate for demand and energy usage based on SDG&E's effective class-average rate per kilowatt-hour applicable to the Medium/Large Commercial & Industrial ("M/L C&I") customer class;

WHEREAS, in addition to the elements of the energy management plan specified in this Contract, SDG&E and the District are jointly working on other energy projects including a clean transportation plan for charging infrastructure to support electrification of vehicles in the District (SB350), and are considering other projects such as a mobile energy storage solution for shorepower demand charge management and grid resilience; and

WHEREAS, SDG&E plans to file an application with the CPUC pursuant to AB628 seeking CPUC review and approval of the Contract and related matters ("Application").

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree, as follows:

I. Definitions.

A. "AB628" shall mean California Assembly Bill 628 (as codified in California Public Resources Code §25990).

B. "Application" shall have the meaning set forth above.

C. "Confidential Customer Information" means information regarding any SDG&E customer, including an SDG&E customer's name, address, telephone number, account number and all billing and usage information that is marked confidential by SDG&E. If the District is uncertain whether any information should be considered Confidential Customer Information, the District may contact SDG&E prior to disclosing the information.

D. "Contract" shall have the meaning set forth above.

E. "Contractor" means an entity contracting directly or indirectly with the District, or any subcontractor thereof subcontracting with such entity, to furnish services or materials as part of or directly related to the District's energy initiatives, the Climate Action Plan and any related programs, and the EMP.

F. "Cruise Ship Meter" shall have the meaning set forth in Section VII.

G. "District" shall mean the San Diego Unified Port District.

H. "Energy Management Plan" or "EMP" shall mean the document attached hereto as Exhibit A.

I. "Enhanced Partnership Program" or "EPP" shall have the meaning set forth in Section III.

J. "Execution Date" shall mean _____, 2017.

K. "Final CPUC Approval" shall have the meaning set forth in Section IX.

L. "Notice of Breach" shall have the meaning set forth in Section X.

M. "Party" shall have the meaning set forth above.

N. "Parties" shall have the meaning set forth above.

O. "SDG&E" shall mean San Diego Gas & Electric Company, a California corporation.

P. "Shorepower Rate" shall have the meaning set forth in Section VII.

II. Energy Management Plan. Pursuant to AB628, upon Final CPUC Approval, the Parties shall implement the EMP, a copy of which is attached hereto as Exhibit A. The Parties shall cooperate with each other in good faith and use reasonable efforts to implement the EMP.

III. Enhanced Partnership Program. Upon Final CPUC Approval, the Parties shall establish and maintain an Enhanced Partnership Program ("EPP"). The objective of the EPP will be to lead the effort to successfully implement the EMP. The resources in the EPP will coordinate, plan, implement, manage, track, and report the progress and impact of the EMP. The EPP will establish a formal structure to receive feedback from stakeholders and interested parties on the implementation of the EMP. The EPP will consist of one or more SDG&E and District employees. Specific activities and details about the EPP are further described in the EPP section of the EMP.

IV. Energy Efficiency. Upon Final CPUC Approval, the Parties shall use the completed assessments of energy efficiency opportunities to support the Port's Climate Action Plan and inform the development of specific goals and actions that reduce air emissions, promote economic development, and reduce energy consumption. This will include assessments that identified current and emerging processes and technologies to reduce energy consumption and improve energy efficiency for the Port and its tenants. SDG&E will use this information to solicit a comprehensive solution to achieve these goals using a competitive request for offer process. Specific aspects of this plan are described in the Energy Efficiency section of the EMP.

V. Clean Transportation. Upon Final CPUC Approval, the Parties shall collaboratively study and analyze one or more projects that will reduce vehicular emissions of greenhouse gases and criteria pollutants in District operations. Specific aspects of this plan are described in the Clean Transportation section of the EMP.

VI. Clean Generation. Upon Final CPUC Approval, the Parties shall collaboratively study and analyze the viability of innovative clean generation program options. Detailed descriptions of the Clean Generation plans are included in the Clean Generation section of the EMP.

VII. Shorepower Rate. Beginning on the first day of the month following Final CPUC Approval, SDG&E shall apply the Shorepower Rate to the District meter location(s) providing electric service to cruise ships ("Cruise Ship Meter"). The Shorepower Rate shall be implemented as follows:

A. SDG&E will bill the District each month for Electric service at the Cruise Ship Meter at an applicable M/L C&I rate schedule.

B. SDG&E will provide the District each month a transparent discount, initially through a monthly refund check, that results in an effective electric bill that is equivalent to the Cruise Ship Meter being assessed a rate, before assessment of applicable taxes and fees, that is equivalent to SDG&E's then-effective class-average rate per kilowatt-hour applicable to the M/L C&I customer class. The discount is initially provided through a monthly refund check, rather than an on-bill line-item discount, because of technical and budgetary constraints in the SDG&E billing system. SDG&E will pursue implementing

the discount through a line-item on the District's bill, with timing of the line-item discount dependent on system demands and limitations.

C. The total dollar amount of the discount will be tracked by SDG&E for recovery from all SDG&E electric customers through Public Purpose Program charges. If the District purchases energy through a third party rather than SDG&E, the discount will not apply to the commodity portion of the District's bill.

D. The Shorepower Rate shall be in effect for a period of five (5) years from the date the Shorepower Rate is first applied.

VIII. Data. SDG&E shall respond to reasonable data requests from the District or from its designated Contractor for, and provide, in a reasonably timely manner tidelands-wide energy savings data for use in GHG inventories and EMP tracking and monitoring for jurisdictional and for regional planning purposes; provided that SDG&E may require, as a condition to providing data to any designated Contractor, that such designated Contractor execute a non-disclosure agreement in respect of such data in form and substance satisfactory to SDG&E; provided further that SDG&E shall have sole and absolute discretion in the means and format by which Confidential Customer Information is disclosed to the District or its designated Contractor. To the extent reasonably requested by the District, SDG&E shall provide relevant information and data to track and monitor the implementation of the components of the EMP. Any responses to data requests under this Section VIII are subject to, and must comply with, the terms and conditions of SDG&E's privacy policy, and the CPUC rules governing disclosure of Confidential Customer Information, as such policy and rules may be modified from time to time.

IX. CPUC Approval.

A. The effectiveness of this Contract is conditioned upon receiving Final CPUC Approval on or before July 31, 2019. "Final CPUC Approval" shall mean a final and non-appealable order of the CPUC, without conditions or modifications unacceptable to the Parties, or either of them, which approves the Application and this Contract in its entirety.

B. The Parties agree to cooperate and use reasonable efforts to obtain the Final CPUC Approval as soon as is practicable. SDG&E will file the Application with the CPUC no later than October 1, 2017. District agrees that it shall intervene in the proceeding related to the Application and provide necessary support of the Application including, but not limited to, timely sponsoring testimony supporting this Contract and all the elements hereof, providing timely responses to data requests, participating in settlement discussions, and submitting briefs and comments in support of the Application. District shall also provide evidentiary support regarding the positive economic impact of cruise ship visits to the District and the impact of energy rates on such visits. District shall take reasonable efforts to file testimony with the CPUC in support of the Application within ten (10) days after SDG&E files the Application with the CPUC. If the District does not file testimony with the CPUC in support of the Application within thirty (30) days after SDG&E files the Application with the CPUC, SDG&E shall have the option, at its sole discretion, to withdraw the Application from the CPUC.

C. Should the CPUC issue a ruling or order requiring conditions or modifications be made that would materially alter this Contract, or issue a decision approving the Application and this Contract with conditions or modifications that materially alter the Application or this Contract, the Parties shall have fourteen (14) calendar days from the date of such ruling, order or decision to provide the other Party written notice of the issuing Party's acceptance or rejection of the conditions or modifications required by the CPUC. The acceptance or rejection of such conditions or modifications shall be in each Party's sole discretion. If a Party fails to provide written notification of its acceptance or rejection to the other Party within such fourteen (14) day period, that Party's silence shall be deemed to constitute acceptance of the conditions or modifications and agreement by such Party that this condition has been satisfied.

X. Termination. This Contract may be terminated by order or decision of the CPUC, by the agreement of the Parties, or by either Party as follows:

A. Either Party shall have the right to terminate this Contract if such Party, in its sole discretion, determines, pursuant to Section IX.C, to reject conditions or modifications required by the CPUC as a condition of approving the Application or this Contract.

B. The District shall have the right to terminate this Contract in the event SDG&E materially breaches any obligation under this Contract and such breach is not cured by District within thirty (30) calendar days (unless the breach is incapable of being cured within 30 days, in such case the cure period shall be reasonably extended so long as SDG&E initiates good faith efforts to cure within 30 calendar days and thereafter diligently continues those efforts), after SDG&E receives written notice ("Notice of Breach") of the same from District.

C. SDG&E shall have the right to terminate this Contract in the event District materially breaches any obligation under this Contract and such breach is not cured by District within thirty (30) calendar days in the case of a breach (unless a is incapable of being cured within 30 calendar days, in such case the cure period shall be reasonably extended so long as District initiates good faith efforts to cure within 30 calendar days and thereafter diligently continues those efforts), after District receives written Notice of Breach of the same from SDG&E.

XI. Miscellaneous.

A. Governing Law. The Parties agree that this Contract is governed by the laws of the State of California, and by SDG&E's applicable rates and rules on file with the CPUC, which rates and rules are made a part hereof by reference, and by all valid and applicable laws, orders, directives, rules and regulations of duly-constituted governmental authorities having jurisdiction. This Contract shall be subject at all times to such changes or modifications in these rates and rules as the CPUC may make from time to time in the exercise of its jurisdiction.

B. Amendments. This Contract shall be considered for all purposes as prepared through the joint efforts of the Parties and shall not be construed against one Party or the other as a

result of the preparation, substitution, submission or other event of negotiation, drafting or execution hereof. Except to the extent provided for herein, no amendment or modification to this Contract shall be enforceable unless reduced to writing and executed by both Parties. This Contract shall not impart any rights enforceable by any third party.

C. Waiver of Rights. The respective rights and remedies of each Party to this Contract are cumulative, and no exercise or enforcement by either Party of any right or remedy hereunder shall preclude the exercise or enforcement by such Party of any other right or remedy hereunder, or which such Party is entitled by law to enforce. Each Party may waive any obligation of, or restriction upon, the other Party under this Contract only in writing. No failure, refusal, neglect, delay, waiver, forbearance, or omission of either Party to exercise any right or remedy under this Contract or to insist upon full compliance by the other with its obligations hereunder shall constitute a waiver of any provision of this Contract nor shall it impair the exercise of any such right or remedy or of any other right or remedy to which it is entitled.

D. No Restriction. For the avoidance of doubt, nothing in this Contract shall be construed or implied so as to restrict the District from jointly developing an energy management plan concurrently with any other entity, including but not limited to any other electrical corporation (as defined in subdivision (a) of Section 218 of the California Public Utilities Code), gas corporation (as defined in Section 222 of the California Public Utilities Code), community choice aggregator, or public utility (as defined in subdivision (a) of Section 216 of the California Public Utilities Code) or to restrict the District from generating or procuring energy through mechanisms independent of SDG&E including, but not limited to, the formation of a community choice aggregation program on its own or in conjunction with any other entity. Nothing in this Contract shall restrict the District from pursuing or obtaining funding for energy-related initiatives with any other entity.

E. LIMITATION OF LIABILITY. IN NO EVENT SHALL A PARTY BE LIABLE TO THE OTHER FOR ANY SPECIAL, PUNITIVE, EXEMPLARY, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOSS OF GOODWILL, LOSS OF PROFITS OR REVENUES, LOSS OF USE, AND BUSINESS INTERRUPTION) THAT ARE CLAIMED TO BE INCURRED BY THE OTHER PARTY WHETHER SUCH CLAIM ARISES UNDER CONTRACT, TORT (INCLUDING STRICT LIABILITY), INDEMNITY OR OTHER THEORY OR LAW, EVEN IF THE OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

F. Headings. Titles and headings of the Sections and Subsections of this Contract are for the convenience of reference only and do not form a part of this Contract and shall in no way affect the interpretation thereof.

G. Severability. The illegality or invalidity of any provisions of this Contract shall not impair, affect or invalidate the other provisions of this Contract and the Parties shall negotiate in good faith to modify this Contract to give effect to the original intention of the Parties.

H. Assignment. District may assign this Contract only if (a) SDG&E consents in writing, which consent SDG&E shall not unreasonably deny, withhold or delay, (b) CPUC approval is received, if necessary, and (c) the party to whom the Contract is assigned agrees in writing to perform the obligations of District hereunder. Assignment of the Contract shall not release District from any of the obligations under this Contract unless otherwise provided herein or within the instrument of assignment and consent.

I. Entire Agreement. This Contract, including any incorporated electrical tariff schedules and rules, and each and every attachment, exhibit, amendment, schedule and any written supplements hereto, if any, between the Parties constitutes the entire agreement and understanding between the Parties concerning the subject matter hereof and supersedes any prior understanding or written or oral agreement relative to said matter.

J. Counterparts. This Contract may be executed in any number of identical counterparts, each of which shall be deemed to be an original, and all of which together shall be deemed to be one and the same instrument when each Party has signed one such counterpart.

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IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be executed, for and on behalf of each, by their duly authorized agents, officers or representatives, as of the Execution Date.

SAN DIEGO GAS & ELECTRIC COMPANY

By: _____
Name: Scott B. Crider
Title: Vice President – Customer Services

Approved as to legal form:

By: _____
Name: James W. Baker
Title: Assistant General Counsel

SAN DIEGO UNIFIED PORT DISTRICT

By: _____
Name: Randa Coniglio
Title: President and Chief Executive Officer

Approved as to legal form:

By: _____
Name: _____
Title: _____

EXHIBIT A

Copy of Energy Management Plan

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Port of San Diego Energy Management Plan

PRELIMINARY

Table of Contents

Port of San Diego Energy Management Plan

I. LEGISLATIVE BACKGROUND

Assembly Bill (AB) 628, signed into law by Governor Brown on October 11, 2013, authorizes the San Diego Unified Port District (District), in conjunction with San Diego Gas & Electric Company (SDG&E), to prepare an Energy Management Plan (EMP) to reduce air emissions and promote economic development in the District.[1] In doing so, the State of California declared the following:

- That it seeks to "promote efficient use of low-cost, low-emissions energy sources in the operations of ports and harbors;"
- That ports offer a unique opportunity to "reduce vehicular emissions of greenhouse gases (GHG) and criteria pollutants;"
- That it "encourages the development of new businesses and retention of existing business within port boundaries;"
- That "businesses located within port and harbor districts may benefit through greater stability in the cost of energy services;" and
- That investor-owned utilities, such as SDG&E, are in the "optimal position" to work with ports to provide energy-related service alternatives and programs.[2]

This Energy Management Plan developed under AB 628 not only promotes low emission energy sources and added energy efficiencies but also develops a cruise vessel shore power

[1] AB 628, Energy Management Plans for Ports and Harbor Districts (October 11, 2013), codified in Public Resources Code, Chapter 13 § 25990.
[2] AB 628, Section 1(a)-(f).

rate that will ensure stability of grid-based power rates for the cruise industry located in San Diego and support CARB driven efforts to reduce cruise ship emissions.

AB 628 also aligns with the State's broader objective of combating climate change through GHG reductions and energy regulations. Governor Schwarzenegger, through Executive Order (EO) S-3-05 and Assembly Bill (AB) 32, required the State to reduce its GHG emissions by 80% below 1990 levels by 2050.[3] Governor Brown further required, through EO B-30-15 and codified through Senate Bill (SB) 32, the State to reduce its GHG emissions by 40% below 1990 levels by 2030.[4] The State went even further with SB 350, which required that energy efficiency (EE) be cumulatively doubled by 2030 and that 50% of electricity generated and sold must come from renewable energy resources by 2030.[5] Governor Brown, through EO B-16-2012, also set a goal of having 1.5 million zero emission vehicles on the road by 2025.[6] The regulations promulgated by the California Air Resources Board (CARB) to implement these GHG EOs are creating a difficult scenario for California Ports and the Cruise Industry under existing rate structures. AB 628 may be one way to minimize that conflict.

II. PORT BACKGROUND

The Port of San Diego is a unique port with unique energy management needs. For decades, the District has strategically pursued specialty cargoes such as automobiles, refrigerated fruit, bulk and break bulk cargoes. The District's maritime facilities include two cargo terminals and the largest on-dock cold storage facility on the West Coast. Class I railroad BNSF and three major highways serve the maritime cargo terminals. In addition to maritime

[3] EO 2-30-05 (June 1, 2005), accessible at: https://www.gov.ca.gov/news.php?id=1861.
[4] EO B-30-15 (April 29, 2015), accessible at: https://www.gov.ca.gov/news.php?id=18938.
[5] SB 350, Clean Energy and Pollution Reduction Act of 2015 (October 7, 2015).
[6] EO B-16-2012, accessible at: https://www.gov.ca.gov/news.php?id=17472.

cargo, the District's cruise ship terminal serves cruise vessels at three berths located at two piers, B Street Pier and Broadway Pier. In addition, the District maintains over twenty public parks, is responsible for public safety on tidelands and at the airport through the Harbor Police Department, and leases land to hundreds of tenant businesses around San Diego Bay.

Current operations, and environmental and sustainability initiatives adopted by the District present an opportunity to align best practices with the State's stated goals through an EMP as outlined in AB 628. The District, a self-supporting public-benefit corporation established by the State Legislature in 1962 to manage San Diego Bay and surrounding waterfront land, seeks to "protect the Tidelands Trust resources by providing economic vitality and community benefit through a balanced approach to maritime industry, tourism, water and land recreation, environmental stewardship and public safety."[7]

The District has taken its mission of environmental stewardship seriously, having been one of the first ports in the nation to voluntarily adopt – unanimously – a Climate Action Plan (CAP) on December 10, 2013.[8] The District's CAP seeks to reduce GHG emissions by 10% under 2006 levels by 2020 and 25% under 2006 levels by 2035. The District intends to update future GHG reduction goals to align with SB 32, which established an interim GHG reduction of 40% by 2030. The following areas are included in the CAP as opportunities to reduce GHG:

- Transportation and land use planning;
- Energy conservation and efficiency;

[7] Port of San Diego mission statement, accessible at: https://www.portofsandiego.org/about-us.html.
[8] Port of San Diego Climate Action Plan (2013), accessible at: https://www.portofsandiego.org/document/environment/climate-mitigation-and-adaptation-plan/documents-1/5515-port-of-san-diego-climate-action-plan/file.html.

- Water conservation and recycling;
- Alternative energy generation;
- Waste reduction and recycling; and
- Miscellaneous (supporting other programs and outreach to reduce GHG emissions).[9]

III. ENERGY MANAGEMENT PLAN OVERVIEW

This EMP was developed cooperatively by the District and SDG&E in accordance with the direction and requirements of AB 628. The EMP leverages elements of the District's CAP measures to provide a focused energy roadmap for the District to reduce its GHG emissions, provide societal benefits (i.e., cleaner air and improved public health), create jobs through new energy projects, facilitate the retention of current businesses, and create a more attractive climate for new businesses. This EMP provides the District the flexibility to align with new state regulations, leverage new technologies, and phase in advanced technologies offered by SDG&E. Further, the District envisions this EMP to be the first of multiple EMPs developed with the assistance of SDG&E over the course of the next 15 years. This initial EMP focuses on the District's industrial and maritime uses (with a few exceptions in order to capture some large upcoming land developments).

In support of the EMP, the District and SDG&E intend to collaborate on projects and programs that focus on the following areas:

- Energy Efficiency;
- Advanced Technologies;
- Clean Generation;

[9] *Id.*

- Clean Transportation; and
- Electric Rates, designed to aid in economic development.

SDG&E and the District arrived at these areas of focus after evaluating the objectives of AB 628 and the District's CAP. Each of these areas is discussed in greater detail below and the outlines of specific collaborative District-SDG&E programs, designed to support the above areas of focus, are provided in Appendix A. Further, this EMP includes the information required by AB 628, which is provided in Appendix B.

A. Energy Efficiency

Implementation of energy efficiency measures will help achieve AB 628's objective of assessing "current and emerging processes and technologies to reduce energy consumption and improve energy efficiency."[10] Further, the District's CAP cites energy conservation and efficiency as one of the measures it intends to utilize to reduce its GHG emissions. Specifically, it seeks a reduction of 21,591 metric tons of carbon dioxide equivalent (MT CO_2) – or 20% under 2006 levels by 2020 through the implementation of energy efficiency measures.[11] In emphasizing the importance of energy efficiency, the CAP states:

> The built environment is a significant indirect contributor to GHG emissions as a result of the electricity and natural gas demand in buildings. Increasing the energy efficiency of both new and existing buildings will result in significant GHG reductions. The Port can implement energy strategies for buildings and exterior spaces, which can provide the opportunity to save money on utility costs, improve air quality, and provide other community benefits.[12]

[10] Public Resources Code, Chapter 13 §25990(b)(2)(C).
[11] *Id* at 24.
[12] *Id.*

While the District and its tenants have been active participants with SDG&E in EE portfolio programs in the past, including through a robust Local Government Partnership (LGP), there are significant opportunities for additional savings. Specialized audits of District tenant facilities have revealed additional opportunities for energy savings to include:

- Industrial Process Load;
- Temporary Services;
- To-Code Measures;
- Advanced Controls and Energy Dashboards; and
- Emerging Technologies.

In addition, the audit results have identified energy savings opportunities which fall into the following three categories:

- Measures that fit into existing SDG&E EE portfolio programs;
- Specialized measures that are not eligible for existing SDG&E EE portfolio programs; and
- Measures not financially viable through existing programs and which could benefit from enhanced incentives.

Given the CAP's emphasis on EE, and the findings of the specialized audits, the District and SDG&E have designed a specialized EE measures proposal (the "EE Proposal") to capture some of these incremental savings opportunities. The EE Proposal will further numerous policy objectives beyond those set forth in AB 628. It will help enable the District to meet its EE CAP goal, reduce electricity demand, thereby lowering GHG emissions in furtherance of the GHG Executive Orders, and will help the State achieve its lofty SB 350 goal of doubling EE by 2030.

SDG&E intends to apply to its regulator, the California Public Utilities Commission ("Commission"), for authorization for funding and regulatory approval of the EE project in a forthcoming application. Further detail on the EE proposal can be found in Appendix A.

B. Advanced Technologies and Clean Generation

Implementation of advanced technologies and clean generation projects will help achieve AB 628's objective of promoting the efficient use of "low-cost, low-emissions" energy sources in port operations, as well as assessing "the role that distributed generation" could play to aid economic development.[13] In addition, alternative energy generation is another measure cited in the District's CAP to reduce GHG emissions. Specifically, the District seeks a reduction of 22,203 MT CO_2e/year or 20% under 2006 levels by 2020 through alternative energy generation.[14] The District's CAP emphasizes the importance of this measure, stating:

> Shifting from traditional, GHG-emitting power sources (fossil fuels) to clean, renewable energy can contribute significantly to meeting the Port's GHG reduction targets. The Port can help meet energy demands through on-site, distributed renewable energy generation. Policies, programs and technologies that support this type of energy generation will also make Port tenants and users more resilient to price variations and interruptions in power supply, while promoting the economic benefits of new, local industries.[15]

i. Advanced Technologies

To that end, this EMP focuses on advanced technologies, including the opportunity for the District to work collaboratively with SDG&E on at least two advanced technologies proposals - a mobile battery storage project and the installation of microgrid infrastructure on the District lands. On May 1, 2017, SDG&E filed its 2018-2020 investment plan for the Electric Program

[13] AB 628, Section 1(a); Public Resources Code, Chapter 13 §25990(b)(2)(B).
[14] *Id.* at 28.
[15] *Id.*

Investment Charge (EPIC) program which included a request for authority to spend on the mobile battery storage project. In addition, under the directives of AB 2868, SDG&E will consider a migrogrid infrastructure proposal proposed by the District, which, if accepted, SDG&E will then apply to the Commission for regulatory approval. These proposals are described in greater detail in Appendix A.

ii. Clean Generation

This EMP also focuses on clean generation, including a comprehensive clean generation proposal. SDG&E proposes to leverage its EcoShare program to assist the District in the deployment of distributed solar that could potentially benefit the District, its tenants and/or "communities of concern" around the District most affected by criteria air pollutants. In addition, SDG&E intends to encourage the District and its tenants to participate in its EcoChoice program, which allows customers to subscribe to receive new and local renewable energy for up to 100% of energy usage. Further, several District tenants are also actively pursuing on-site solar generation (as well as the District, itself). As such, in addition to facilitating the deployment of these customer-sited technologies, the EMP seeks to support the required planning and upgrades that may be necessary to support high penetration of renewables.

Beyond the objectives of AB 628 described above, these advanced technologies and clean generation proposals are in line with policies proposed in a number of State regulations and proceedings, including:

- The GHG EOs;
- SB 350;

- The Integrated Distribution Energy Resources proceeding[16];
- The Distribution Resource Plan proceeding[17];
- The Integrated Resource Plan proceeding[18]; and
- The California Energy Commission's (CEC) EPIC program, which "supports advanced technology through research, loans and policy,"[19] and which issued a grant funding opportunity called "The EPIC Challenge: Accelerating the Deployment of Advanced Energy Communities."[20]

More specifically, with respect to a potential microgrid infrastructure proposal, the State has explored the potentially significant value of microgrids in two policy papers: "Microgrids: a Regulatory Perspective"[21] and the CEC's "Microgrid Assessment and Recommendations to Guide Future Investment," which states that "[m]icrogrids offer resiliency over a geographic area during grid outage events, provide cost saving opportunities, and can deliver additional societal benefits; such as reduced carbon footprint and higher penetration levels of renewable resources than would otherwise be possible."[22]

C. Clean Transportation

Focusing on clean transportation is in line with AB 628's objective to "reduce vehicular emissions of greenhouse gases and criteria pollutants" in port operations, including a

[16] Integrated Distributed Energy Resources proceeding, R.14-10-003.
[17] Distribution Resource Plan proceeding, R.14-08-013.
[18] Integrated Resource Plan proceeding, R.16-02-007.
[19] California Energy Commission, "Energy Commission Supports Advanced Energy Technology Through Research, Loans, and Policy" (January 13, 2016).
[20] California Energy Commission, GFO-15-312, "The EPIC Challenge: Accelerating the Deployment of Advanced Energy Communities" (November 24, 2015).
[21] California Public Utilities Commission Policy and Planning Division, "Microgrids: A Regulatory Perspective" (April 4, 2014).
[22] California Energy Commission, "Microgrid Assessment and Recommendation(s) to Guide Future Investment," p.3 (July 2015).

description of "measures to be taken to reduce air emissions for vehicle use within district boundaries, including vehicles used for movement of commercial products."[23] Further, the District's CAP determined that the largest potential for GHG reduction comes from the transportation and land use sector. Specifically, it seeks a reduction of 62,210 MT CO_2e/year by 2020.[24] In acknowledging this fact, the CAP stated:

> The Port is home to many diverse land uses and modes of transportation that directly and indirectly contribute to GHG emissions. Recreational boating, on-road vehicles (cars and trucks) and off-road equipment (such as cargo handling equipment and ships) account for 35% of the Port's 2006 baseline GHG emissions. Lodging, restaurants, marina attractions, trains and other heavy-duty vehicles also contribute to GHG emissions. Combining land use and transportation strategies can also lead to a broad set of co-benefits, and improve the daily experience of Port employees and visitors.[25]

In furtherance of these objectives, this EMP refers to SDG&E's transportation electrification application pursuant to SB 350 before the Commission, which proposes a clean transportation project at the District, described in detail in Appendix A.[26] This project will help the District with the CAP transportation sector goals by working with the District and District tenants. The 2020 reductions anticipated from the proposed SDG&E Medium Duty/Heavy Duty (MD/HD) Port Electrification project includes avoiding 38,000 gallons of gasoline equivalent with incremental electricity use of 344 MWhrs, netting 253 MT of CO_2 reductions.[27] Additionally, the District and

[23] AB 628, Section 1(b); Public Resources Code, Chapter 13 §25990(b)(2)(5).
[24] Port of San Diego, Climate Action Plan, p. 20.
[25] *Id.*
[26] A.17-01-020, Application of San Diego Gas & Electric Company (U 902-E) for Authority to Implement Priority Review and Standard Review Proposals to Accelerate Widespread Transportation Electrification, accessible (January 20, 2017), accessible at: https://www.sdge.com/sites/default/files/regulatory/SDGE%20Application%20For%20Approval%20of%20SB%20350%20Transportation%20Electrification%20Proposals_0.pdf.
[27] Assumes 19.6 lbs CO_2 / GGE (US EIA estimate) and 541 lbs CO2e / MWh (Port's consultant 2020 estimate).

SDG&E envision further collaboration in the future to expand on clean transportation opportunities aimed at achieving the CAP goals in the transportation and land use sector.

Beyond the objectives of AB 628 described above, the clean transportation project put forth in SDG&E's SB 350 application furthers the State's energy goals in several ways. It helps to achieve the state's GHG reduction goals set forth in the EOs and SB 350. Further, it reduces mobile emissions, in line with the National Program for GHG and Fuel Economy Standards, developed jointly by the Environmental Protection Agency and the National Highway Traffic Safety Administration,[28] as well as the Tier 3 Vehicle Emission and Fuel Standards Program.[29] It also furthers the State's transportation electrification goals, put forth in Governor Brown's EO B-16-12, setting the goal of having 1.5 million zero emission vehicles on the road by 2025, and detailed in the 2013 interagency report entitled "A Roadmap toward 1.5 zero emission vehicles on California's roadways by 2025."[30] Lastly, SB 350 supports the Executive Order B-32-15[31], which directed the development of the Sustainable Freight Action Plan[32]. The action plan has a goal to deploy over 100,000 zero- or near-zero emissions freight vehicles by 2030.

D. Shore Power Electric Rate

AB 628 states that "[e]nergy utility customers located within the state's port and harbor districts may benefit from the addition of new businesses and the retention of existing

[28] Environmental Protection Agency and National Highway Traffic Safety Administration, Fed. Reg. 77, "2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards" (October 15, 2012).
[29] Environmental Protection Agency, Fed. Reg. 79, "Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards" (April 28, 2014).
[30] EO B-16-12, accessible at: https://www.gov.ca.gov/news.php?id=17463; Governor's interagency Working Group on Zero-emission Vehicles, "2013 ZEV Action Plan: A roadmap toward 1.5 million zero-emission vehicles on California roadways by 2025 (February 2013), accessible at: https://www.gov.ca.gov/docs/2016_ZEV_Action_Plan.pdf.
[31] EO B-32-15. Accessible: https://www.gov.ca.gov/news.php?id=19046
[32] California Sustainable Freight Action Plan. Accessible: http://www.casustainablefreight.org

businesses through increased energy cost certainty." The law further states that "[b]usinesses located within the state's port and harbor districts may benefit through greater stability and certainty in the cost of energy services." The District's dynamic business portfolio has an important economic impact on the region. Focusing on the maritime cruise business specifically, according to data provided by the Business Research & Economic Advisor's ("BREA") 2005 Economic Impact Analysis of the San Diego Cruise Sector, a homeported San Diego cruise call generates approximately $1.23 million in direct economic benefit.[33] In 2004, the San Diego cruise ship sector was responsible for $271 million in final sales among San Diego businesses which generated 2,243 full and part-time jobs in San Diego County, paying a total of $83.5 million in wages and salaries.[34] Therefore, it is in the best interest of the District, tenants in the maritime and tourism sectors, and the San Diego region as a whole to pursue a sustainable cruise ship shore power electric rate.

The cruise business and operation are unique within the District's portfolio, and as such, have unique energy needs. Every time a cruise vessel "plugs in" to the grid-based shore power system, it is the effective equivalent of a small city or large hotel coming online at once. Similarly, disconnecting from the system results in an immediate, significant load reduction. Cruise vessels are generally deployed in fleets; vessel owners make deployment decisions on the basis of multiple vessels serving a group of ports. Vessel redeployments can be viewed as multiple vessels entering or leaving service; alternatively, single vessel redeployments are

[33] See BREA 2005 Economic Analysis of the San Diego Cruise Ship Sector, pp. 30, 34, 37-38. Does not reflect indirect benefits also attributable to homeport calls.
[34] *Id.* at 2.

exceedingly rare. These market forces, operational costs and vessel fleet dynamics therefore result in outsized impacts on vessel call volumes at a single port facility.

This pursuit is particularly important now as a result of unique regulatory circumstances. The CARB At-Berth Regulation requiring the use of shore power was enacted in order to reduce GHG emissions from certain classes of ocean going vessels by powering down onboard engines to reduce criteria air pollutants. In accordance with SDG&E's GRC Phase 2 proceeding, SDG&E included in its 2016 GRC Phase 2 Application amendments to the applicability of SDG&E's standard small commercial rate[35] which the District is currently utilizing for the shore power system at the Cruise Ship Terminal. These amendments would result in the District's cruise facilities no longer being eligible for a small commercial rate. The District would need to be transferred to a qualifying rate, i.e. the appropriate medium/large commercial and industrial (C&I) rate, Schedule AL-TOU.

Based on the characteristics of the cruise business, and available elasticity data for similar transportation services, even small rate adjustments could cause a sizable shift in business at the District's cruise facility. Large rate changes could result in a demand reduction sufficient to effectively eliminate cruise as a viable business in San Diego. It is estimated that transitioning the Cruise Ship Terminal from SDG&E's Schedule TOU-A to Schedule AL-TOU would cause the annual bill amounts to increase by over 400%-600%[36]. This substantial rate change may result in a significantly negative impact to the regional cruise ship industry, tourism, and economic development and retention in the District.

[35] Generally applicable for customers less than 20 kW.
[36] Based on existing load factor.

In order to protect a longstanding, foundational element in the District's charter, and to promote future economic development and retention at the District, SDG&E is offering a rate proposal for the District's shore power account that will prevent rate shock and enable it to continue operating as an economic engine for the region, while still complying with state mandates for sustainable freight and shore power usage imposed by CARB. This proposal, described in detail in Appendix A, and for which SDG&E intends to apply to the Commission for regulatory approval, is in line with the mission of
AB 628, which seeks to promote the economic viability of ports through energy offerings and is a critical component to the overall plan.

E. Enhanced Partnership Program

In addition to the substantive proposals described above, this EMP includes an Enhanced Partnership Program (EPP) proposal to help ensure that there is an adequate level of oversight to effectively implement the plans described herein. This ongoing oversight is particularly important because SDG&E and the District envision this EMP to be a "living document;" the first of likely multiple EMPs over the course of the next fifteen years.

While the EPP does not in and of itself effectuate the environmental and economic policy objectives of the EMP, it will be integral to ensuring that those important objectives are achieved through effective and efficient implementation of the individual proposals. The details of the EPP proposal can be found in Appendix A.

IV. CONCLUSION

In conclusion, this EMP is an innovative and multi-faceted project that is designed to further many of the State's energy and environmental goals, in particular, those set forth in AB 628.

More specifically, the EMP is designed to benefit the District and its tenants, enabling it to continue the important role that it plays in the region, both economically and environmentally. The District and SDG&E look forward to working together to implementing these measures.

APPENDIX A - Port and SDG&E Program Description Outlines

Energy Efficiency Proposal

I. Proposal Overview

SDG&E is requesting Commission approval of a comprehensive EE effort at District and tenant facilities. SDG&E has completed a number of specialized audits at some of the largest tenant facilities to determine energy savings opportunities. Although SDG&E will make a proposal based on the data already collected from these audits, the proposed plan will also include further audit capability and remain flexible enough to capture future energy savings opportunities.

Many projects will be conducted within the existing SDG&E EE programs, but this plan also proposes to include some innovative methods and equipment to capture additional energy savings, such as replacing sandblasting nozzles, retrofitting variable speed drives on rotary screw air compressors and stand-alone ventilation fans, or utilizing high-efficiency temporary air compressors, or specifying induction type portable welding machines to replace existing types.

SDG&E proposes to secure 19.9 million kWh in energy efficiency savings by 2020. These savings will be achieved through projects and measures that qualify for SDG&E standard EE programs and those that will be performed solely under this plan. It is estimated that 70% of the energy savings will use incentives paid through standard SDG&E EE programs.

This Request for Offers (RFO) will seek out an experienced vendor to leverage existing SDG&E EE program methodologies, such as the Business Energy Solutions

program, which provides direct installation of low cost measures to small businesses, as well as implementing EE measures incremental to existing SDG&E EE programs. In addition, the RFO will require the vendor to provide evaluation, measurement and verification (EM&V) services to verify the savings achieved from these measures. This RFO process will be modeled after SDG&E's existing All-Source RFOs, but customized for the needs of the EMP.

As stated above, SDG&E has completed several specialized audits. These audits have identified a number of energy saving opportunities that have not yet been implemented. These include:

- Industrial Process Load;
- Temporary Services;
- To-Code Measures;
- Advanced Controls and Energy Dashboards; and
- Emerging Technologies.

Also considered were the following potential emerging technologies:

- Sandblasting Technology Demonstration Projects
- Smart Temporary Power Panel Demonstration Projects

Given the geographic size and composition of businesses within the District's jurisdiction, there are many different types of utility customers with a high degree of variation in energy use. This situation presents some interesting challenges when developing an energy efficiency plan for the District. The following sub-section

provides further detail regarding implementation of the District Energy Efficiency plan and how it will address these unique challenges.

Customer Types

SDG&E's customers at the District can generally be classified into one of four categories for purposes of this plan:

- **District facilities** – These facilities would be classified as one of the commercial sectors;
- **Industrial** – This is a segment with large potential, but many projects will require custom treatment and some of that will require providing incentives particular to this plan;
- **Large Commercial** – The primary large commercial customers at the District are hotels and the San Diego Convention Center. These facilities have been fairly active participants in SDG&E's EE programs to-date; however, further opportunities exist and will be pursued; and
- **Small Commercial** – District tenants are rounded out by the many small businesses in and around the District. SDG&E has offered many of these tenant's participation in EE via the Business Energy Solutions program. This plan will continue and expand this offer to new and prior participants.

Energy Efficiency Measures /Equipment and Incentives

- **Standard Measure Treatment** - The EMP may be starting at a time that provides the District, and its tenants, additional opportunity. Per AB 802,

SDG&E will be able to offer customers incentives based upon not only energy savings above building code, but also savings based on the energy consumption of the existing equipment. Practically, this new methodology means that SDG&E will be able to offer higher incentives for EE projects. Such incentives will improve the economics of these projects and, given these improved benefits to customers, SDG&E expects greater replacement of inefficient equipment. This higher incentive level will apply to both deemed and custom measures. Funds for these incentives will be paid through SDG&E's existing EE portfolio and corresponding savings will be claimed by the portfolio.

- **Temporary or other "Special" Measures** – The audits recently performed by SDG&E identified meaningful energy savings opportunities related to equipment that would not qualify for incentives under SDG&E's standard EE programs. These measures are often considered "temporary" or are owned by entities not located on District tidelands. However, under this plan, SDG&E proposes that incentives be offered for upgrading these measures. As an example, temporary equipment (welders, ventilators, and air compressors) are owned by and used by contractors in the local shipyards. Due to the fact that these contractors do not pay the site electric bills, they are ineligible for current incentive programs. Incentives are required to encourage contractors as well as customers to use energy efficient equipment.

Delivery Method

SDG&E will use two methods to deliver energy efficiency efforts to the District and its tenants.

- **Dedicated AB 628 Port Initiatives** – SDG&E will deliver services designed specifically for the District and its tenants based on the factors described above. These services will be delivered by one or more third-party contractors.

  SDG&E will select an experienced vendor by using a RFO process, which will define customers, measures, required savings to be delivered, and a timeframe. The contractor will propose delivery methodologies and pricing. The contractor will work with the District and its tenants to implement both standard measures and those District-specific measures above and beyond what SDG&E currently offers. It is possible that some projects may be of such a size and scope that discretionary actions by the Board of Port Commissioners will be required. In addition, the vendor will provide EM&V services to verify savings from measures.
- **Standard Programs** – In some cases, SDG&E's existing programs and third-party contractors are well positioned to deliver EE services. These programs may be used by customers whose business situation does not align with the RFO's contractor(s).

Program Management

As with other aspects of proposals in furtherance of the District's EMP, the energy efficiency efforts, both Standard Programs and Dedicated Services, will be managed and coordinated by the EPP. EPP management will ensure that District, tenant, and ratepayer interests are balanced and addressed and that EE activities are kept on-track to deliver the energy savings required to meet the District's overall CAP goals. It is possible that some projects may be of such a size and scope that discretionary actions by the Board of Port Commissioners will be required. The EPP will ensure that these types of projects obtain the necessary regulatory and discretionary approvals.

II. Alignment with AB 628

The Energy Efficiency proposal directly addresses a number of goals established by AB 628. These goals include:

- Assessment of energy consumption and EE opportunities; and
- Recommendations for enhanced use of energy efficiency.[37]

Additionally, energy efficiency will contribute to other goals set forth in AB 628 such as GHG reduction and small businesses engagement, as well as broader State GHG and EE goals set forth in EO S-3-05 (as codified in AB 32), EO B-30-15 (as codified in SB 32), and SB 350.

Further, the energy efficiency plan addresses or supports many required elements of AB 628. Specifically, the EE plan includes:

[37] Public Resources Code, Chapter 13 §25990(b)(2)(C).

- Assessment of current energy consumption;
- Assessment of energy efficiency;
- Assessment of current and emerging processes and technologies to reduce energy consumption; and
- Recommendations for enhanced use of energy efficiency.

III. Greenhouse Gas Reduction or Cost Savings

Depending upon the source of the utilized energy, energy efficiency will reduce GHG emissions both at the District and off-site. Each energy efficiency project will immediately produce operating cost savings. District, tenant, or ratepayer costs and savings will depend upon the cost-effectiveness of each project.

IV. Beneficiaries of the Proposal

The primary beneficiaries of the energy efficiency plan will be District tenants, who comprise the vast majority of the District's load. The facilities operated by the District will also benefit in the form of direct energy cost reductions.

The proposed energy efficiency plan will rely on implementation from the contractor community. EE projects require a mix of skills, including skills that can be learned without higher-education degrees. Thus, surrounding disadvantaged communities may benefit from job opportunities created by the projects under this plan.

Both surrounding disadvantaged communities and California residents in general will benefit from reduced GHGs and other emission reductions resulting from the reduced need to produce electricity.

V. Roles and Responsibilities

The District and its tenants will have close interaction with SDG&E to implement the proposal. As envisioned, SDG&E will work closely with the District to design, manage, track, and modify the plan on an ongoing basis. SDG&E will also coordinate data gathered to assist the District with the evaluation of the EMP measures against CAP progress goals.

At the project implementation level, both the District and its tenants will work with SDG&E and its contractor(s) to further identify EE opportunities, define projects, schedule project implementation, and verify energy savings.

VI. Proposal Timeframe

Energy efficiency, by its very nature, is an ongoing activity. Current energy savings opportunities are defined by current usage, process, and technologies. As these change over time, the EE opportunities change and the EE plan under this proposal will be updated. Thus, the initial timeframe for the EE plan will be through 2020, though these goals will be updated in future iterations of the EMP.

EE goals for each time period will be influenced by the timeline of related District activities, goals set by SB 350 and ongoing regulatory activities and budgets established under this proposal.

VII. Proposal Funding

Much of the EE activity can be performed within the standard SDG&E EE programs and thus approximately 70% of the funding is part of the Commission's EE proceeding. District-specific EE activities and incentives for non-standard measures

will need to be funded as part of the AB 628 effort and costs recovered via this process. The requested funding amount will be provided in SDG&E's application before the Commission.

Clean Transportation Proposal (SB 350)

I. Proposal Overview

As part of its SB 350 filing before the Commission, SDG&E proposed six "priority review projects," including a clean transportation proposal at the District. Specifically, SDG&E intends to conduct 30 – 40 installations that include a combination of components such as electric vehicle supply equipment (EVSE), load research meters and data loggers to obtain operational data and facilitate growth of Medium Duty/Heavy Duty (MD/HD) Electric Vehicles (EV), and electric forklifts) in an effort to reduce GHG emissions.

In addition, SDG&E will collect data which may include consumption, charging and operational data from load research meters and data loggers respectively for one year. Obtaining a baseline data set will facilitate analysis of how to optimize Vehicle Grid Integration (VGI) for the MD/HD and forklift EV market. At the conclusion of SDG&E's data analysis process, SDG&E will collect one year of baseline data and intends to create a report to the Commission that may be shared with interested stakeholders, as allowed by privacy rules. Load research meters will collect consumption and charging data to evaluate energy consumption relative to time and demand. Data loggers will provide operational data such as operation-specific and EV-specific charging and operating patterns. This information will aid in determining how to optimize VGI as well as electric fuel economy in order to determine optimal battery and EVSE sizes. Optimized VGI is important for the MD/HD and forklift EV

market because it will allow for better grid utilization, mitigate impacts to system and circuit peak and mitigate the need for additional power generation facilities. There may be more opportunities in future phases of the EMP to explore EV charging management plans that identify timing, scheduling, and servicing needs to mitigate increased costs and facilitate operational needs. Where permissible, due to privacy rules, SDG&E will share data with the District to track, monitor, report and implement the EMP and contributions to the District's CAP.

In addition to SB 350, SDG&E stands ready to support the transportation fuel needs and choices of the District and District tenants. SDG&E is in a position to help enable and support the conversion from conventional fuels such as diesel to cleaner fuels, including natural gas and electricity. This may vary based upon the vehicle type and vehicle operation needs. For some District tenant customers, this may include facilitating the conversion from diesel to natural gas. For other vehicles, this may include accelerating the adoption of electric vehicles, forklifts and other equipment consistent with the direction in SB 350. These choices will often be customer driven in support of operational needs, CAP goals, and the goals of California.

II. Alignment with AB 628

SDG&E's SB 350 clean transportation project aligns with the Legislature's finding that "there is an opportunity in port and harbor district operations, including the

movement of commercial goods, to reduce vehicular emissions of greenhouse gases and criteria pollutants."[38]

Further, this project satisfies §25990(b)(5), which requires an EMP to contain "a description of measures to be taken to reduce air emissions for vehicle use within district boundaries, including vehicles used for movement of commercial products."

III. Roles and Responsibilities

SDG&E requested Commission authorization to install, operate, maintain, and own EV charging infrastructure including, but not limited to, EVSE, circuits, load research meters and data loggers to support widespread transportation electrification within the District for 30-40 installations.

The District and its tenants will be key stakeholders.

IV. Proposal Timeframe

SDG&E will begin installation of the equipment associated with this project after Commission approval of its SB 350 application.[39]

[38] AB 628, Section 1(b).

[39] Application of San Diego Gas & Electric Company (U 902-E) for Authority to Implement Priority Review and Standard Review Proposals to Accelerate Widespread Transportation Electrification, accessible (January 20, 2017), accessible at: https://www.sdge.com/sites/default/files/regulatory/SDGE%20Application%20For%20Approval%20of%20SB%20350%20Transportation%20Electrification%20Proposals_0.pdf.

Advanced Technologies Proposal #1 – Mobile Battery

I. Proposal Overview

SDG&E is proposing a multi-phased integration of a battery storage solution to meet a portion of the projected needs of the cruise ship terminal. It is contemplated that the storage asset would be mobile so that it can be transported and deployed at more than one location depending upon need and the available capacity of the storage unit. The "stackable" value-stream property – that is, the potential capability to provide multiple, concurrent benefits – of advanced battery storage technology is the fundamental premise underlying this proposed solution. In fact, there are significant opportunities to use this mobile storage solution at large-scale community events where typically generators are used on-site (therefore reducing criteria air pollutants). This mobile storage proposal may also tie-in to the District's existing solar photovoltaic installation at the B Street Terminal to benefit from the excess production that occurs during off-peak/non-cruise ship days thus bundling advanced technologies together.

This proposal contemplates the deployment of this plan in a phased manner:

- Phase 1 (Years 1-5): Pilot a storage project of up to 1 MW (4 MWh) utilizing available grant funding[40];

[40] We will revise with an accurate reflection of size of storage and cost.

- Phase 2 (Years 6-10) and Phase 3 (Years 11-15): Optimize and expand pilot keeping in mind:
    1) District's ability to increase cruise ship traffic (thus increasing the shore power circuit's load factor);
    2) Grid needs; and
    3) The technology landscape and future trends.

The plan requires conducting a 15-year economic analysis of the "mobile storage" concept based on the following inputs and assumptions:

- Shore power rate;
- Projected declining price-curve of storage;
- Known cruise ship schedule (12-18 months in advance); and
- Current load factor (~2%).

The following outputs will be calculated with a goal of maintaining a reasonable and competitive composite energy rate for the cruise ship terminal:

- Storage lease and/or other pricing models for the cruise ship terminal; and
- Value of other implementable benefit streams – e.g., grid use, leasing to other customers during periods when demand is not required by cruise ship terminal.

I. Alignment with AB 628

The purpose of this proposal is to demonstrate the potential of "stackable benefits" of energy storage, as well as test the ability to validate the effectiveness of energy storage as a tool to manage shore power load (and therefore costs) so that the Port

can maintain, attract and increase cruise ship traffic over the next 15 years. This objective aligns with the broad economic and energy goals of AB 628.

Further, an advanced technology proposal satisfies Section 25990(a), which states "A district may prepare one or more energy management plans…*that produces, generates, or supplies electricity to the public and that serves the district in order to reduce air emissions, promote economic development, and encourage the development of new businesses and retain existing businesses in that district."*

This advanced technology proposal satisfies this required element because it seeks to produce/generate/supply electricity, reduce air emissions and promote economic development and business retention/attraction.

II. Greenhouse Gas Reduction or Cost Savings

This proposal offers the potential to reduce GHG emissions by decreasing the use of generation sources contributing to those emissions. The potential for GHG reductions will be analyzed during the demonstration project.

III. Beneficiaries of the Proposal

The District (cruise ship terminal), San Diego region (increased economic activity resulting from tourism due to increased cruise ship activity) and the San Diego Tourism Authority may all benefit from the proposal. As well as creating a mobile storage solution that could be used at large-scale community events thereby reducing criteria air pollutants from generators on nearby communities.

IV. Roles and Responsibilities

SDG&E will develop advanced technology options and the District will provide ingress, egress and space for the mobile battery.

V. Proposal Timeframe

The implementation timeframe is expected to be 2-5 years for the pilot phase, and 6-15 years for the expansion and optimization phases.

VI. Proposal Funding

SDG&E intends to fund the initial pilot phase through available grant opportunities. SDG&E will seek Electric Program Investment Charge (EPIC) Cycle 3 funds and additional state and/or federal grants to pay for the demonstration project. Funding plans for the later phases of the proposal will be developed during the pilot phase.

Advanced Technologies Proposal #2 – Infrastructure Update

I. Proposal Overview

There are several redevelopment projects contemplated to be carried out in the District's Port Master Plan Update. These plans will result in significant electric load growth in the area, requiring substantial distribution grid upgrades. As a result, SDG&E is contemplating the deployment of advanced technologies to meet these grid needs as alternatives to traditional grid infrastructure. As a first step in this direction, SDG&E will consider the results of a planned load-study of three District locations (Seaport Village, Harbor Island and Tenth Avenue Marine Terminal) to evaluate upgrades to the distribution grid utilizing storage, solar and other emerging advanced technologies. Additional studies of this nature will also be conducted in collaboration with the District and its tenants to ultimately design a smart and efficient distribution grid to systematically meet growing needs. SDG&E will conduct detailed economic and technology viability studies in support of these efforts.

- In addition, SDG&E will develop a program pursuant to AB 2868[41] for which the District would likely qualify (see section 4.2 of California Public Utilities Commission Order Instituting Rulemaking (OIR) 15-03-011 for more information on the implementation process). AB 2868 provides the initial framework for the Commission to direct regulated electric utilities to develop and "file applications for

[41] Public Utilities Code §2832.2 *et. seq.*

programs and investments to accelerate widespread deployment of distributed energy storage systems to achieve ratepayer benefits, reduce dependence on petroleum, meet air quality standards, and reduce emissions of greenhouse gases. Programs and investments proposed by the state's three largest electrical corporations shall seek to minimize overall costs and maximize overall benefits." [42] SDG&E anticipates that the Commission will issue guidance on how such programs should be structured and submitted by the end of 2017. As §2832.2(d)(2) indicates that "[t]he commission shall prioritize those programs and investments that provide distributed energy storage systems to public sector and low-income customers," SDG&E anticipates that the District, as a public-sector customer, would qualify for participation in such a program. SDG&E believes that this is the appropriate funding mechanism for the energy storage component of a future District microgrid project and has a clearer path for approval, such as priority for public sector projects, than AB 628 which does not directly authorize ratepayer cost recovery of District reliability enhancements. It should be noted that the District may independently pursue microgrids outside of the IOUs as a cost savings measure, where resiliency and islanding may be necessary and to further advance the District as a Strategic Port. If the District does so, those projects may be included in future EMPs.

[42] Public Utilities Code §2832.2(b)

II. Alignment with AB 628

In keeping with SDG&E's commitment to excellent customer service, development and promotion of cost-effective advanced distributed energy technologies, as well as the "greening of communities" that it serves, SDG&E is proposing a multi-phased integration of advanced technologies to effectively meet the following additional goals:

a. Achieve a sustained competitive energy cost in order to increase San Diego economic activity in accordance with the Port Master Plan Update, to increase activities such as cargo ship frequency, and enhanced industrial, commercial and retail activity along the San Diego Bay;
b. Utilize new and advanced energy technologies to meet emissions/clean energy goals set forth in the District's Climate Action Plan (CAP);
c. Ensure grid needs are met simultaneously with those of the District, thus minimizing cross-subsidies; and
d. Implement advanced technologies prudently keeping in mind the nascence and declining price curve of many of these technologies.

Further, an advanced technology proposal satisfies Section 25990(a), which states "A district may prepare one or more energy management plans…*that produces, generates, or supplies electricity to the public and that serves the district in order to*

reduce air emissions, promote economic development, and encourage the development of new businesses and retain existing businesses in that district."[43]

This advanced technology proposal satisfies this required element because it seeks to produce/generate/supply electricity, reduce air emissions, and promote economic development and business retention/attraction.

In addition, the legislative declarations reference "low-cost, low-emission energy sources."[44]

III. Greenhouse Gas Reduction or Cost Savings

Some advanced technologies inherently result in GHG reductions through the increased utilization of renewable energy sources and the corresponding reductions in the use of fossil-fueled generation; however, the combination of such technologies in the ultimate solution will dictate the extent of such reductions.

Cost savings are a potential outcome for both the ratepayer and the District and its tenants; however, those savings can only be quantified based on the ultimate solution adopted.

[43] Public Resources Code, Chapter 13 §25990(a).
[44] AB 628, Section 1(a).

IV. Beneficiaries of the Proposal

The District, District tenants, adjacent communities and jurisdictions and ratepayers all benefit from increased industrial, commercial and retail activity promoted by the proposal. Additionally, the District, District tenants and adjacent communities will benefit from potential GHG reductions, and decreased air pollution, that may result from the proposal.

V. Roles and Responsibilities

This proposal requires a long-term estimate of proposed activities resulting in load-growth, that the District and District tenants will be required to provide in order for SDG&E to estimate impacts to the distribution grid. Collaboration with the District will be required to align energy needs with anticipated redevelopment activity and the Port Master Plan Update.

VI. Implementation Timeframe

The expected implementation timeframe for this proposal is 3-5 years.

VII. Proposal Funding

SDG&E will seek to develop a program pursuant to AB 2868, for which the District would likely qualify. Under this approach, costs would be recovered through distribution rates from all ratepayers. However additional value streams such as using the microgrid for energy arbitrage and backup power could support energy cost certainty for the District and its tenants and reduce the cost to ratepayers.

Clean Generation Proposal

I. Proposal Overview

SDG&E is proposing a multi-solution approach to support and develop clean generation at the District:

1) EcoChoice[SM];
2) Integration of planned behind-the-meter solar by the District and its tenants;
3) Solar as part of Advanced Technologies proposal #2 – Infrastructure Upgrade; and
4) Leverage EcoShare[SM] to develop creative solutions benefiting multiple stakeholders.

1) EcoChoice

EcoChoice is a green tariff that offers the District and its tenants an opportunity to increase the renewable content of energy provided by SDG&E above SDG&E's current Renewable Portfolio Standard. Through this offer the District and its tenants can reduce GHGs and promote the growth of renewable energy with no upfront costs or long term commitments. Customers can elect for 50% to 100% of electricity usage to be served through the program and may pay a small premium each month based on the size of the renewable energy subscription. Renewable energy credits associated with the participant's energy consumption are retired on the customer's behalf and can be counted toward CAP or other GHG goals. This offer supports the District's CAP goals and objectives as well as District tenant Sustainability Plans and

Green Program goals. EcoChoice will soon be comprised of 100% solar energy from facilities located in Southern California, but other renewable generation technologies like wind energy may be added to EcoChoice in the future.

2) Integration of planned behind-the-meter solar by the District and its tenants

SDG&E supports solar as a clean and green power generation technology, and SDG&E will work with the District and its tenants to integrate and support existing and planned customer-owned solar installations. SDG&E recognizes that the District is engaged in efforts to identify on-site generation opportunities to offset increased loads associated with advanced technologies (i.e., EV charging infrastructure, etc.). SDG&E will make full efforts to assist customers with selection of optimal rate plans in order to maximize solar benefits.

3) Solar as part of Advanced Technologies proposal #2 – Microgrid

There are several redevelopment projects envisioned in the District's Port Master Plan Update. These bold and aggressive plans will result in significant electric load growth in the area, requiring substantial distribution grid upgrades. To meet these grid needs, SDG&E is contemplating the deployment of advanced technologies, specifically at the Tenth Avenue Marine Terminal location. SDG&E is open to discussions with the District and its tenants to integrate multiple solar options into this proposal to most efficiently deploy clean technologies.

4) EcoShare

SDG&E's EcoShare program may be leveraged to deploy distributed solar to benefit the District, its tenants and "communities of concern" around the District that are most affected by emissions.

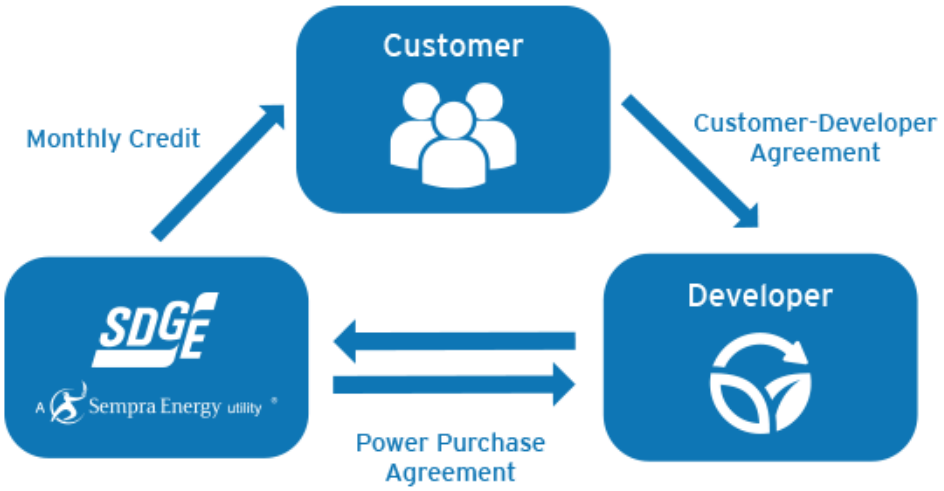
EcoShare Program Overview

EcoShare offers a way for the District and its tenants to purchase renewable energy directly from new solar facilities within SDG&E's service territory operated by third-party developers. All environmental attributes of the purchased solar energy remain with participating customers.

Under the EcoShare program, the District and participating customers could enter into private contracts with the selected developer(s) where the electricity price and agreement terms are defined. Billing for EcoShare participants works as follows:

1. Customers continue to receive normal SDG&E bills each month with a new credit reflecting the amount of solar energy purchased from the developer.[45]
2. Customers receive an additional bill from the developer to pay for the renewable energy purchased from the solar facility.

[45] EcoShare credits are defined in Schedule ECR (http://regarchive.sdge.com/tm2/pdf/ELEC_ELEC-SCHEDS_ECR.pdf)



The final cost of the solar energy is at the discretion of the selected developer and could potentially result in cost neutrality or a cost reduction for participating customers. Eligible solar projects must bid into a competitive solicitation and be selected by SDG&E according to solicitation requirements.

EcoShare Project Design

While several creative proposals could be designed leveraging the EcoShare program, an example could include the deployment of solar installations (options could include traditional ground-mounted systems or modern multi-functional solar canopies) sited in open spaces, parking lots or any other cost-effective suitable land. Additionally, the District could also opt to contribute land under its jurisdiction for the purpose of lowering the overall cost of the EcoShare project. Such details would be at the discretion of the District and the solar developer. Leveraging the EcoShare program, the solar energy generated by these solar facilities can be structured to directly benefit several stakeholders including the District, its tenants and potentially

even residents of the disadvantaged communities adjacent to the District. SDG&E will make every effort to support the District in developing creative solutions to meet CAP and energy-related goals through the EcoShare program.

II. Alignment with AB 628

This proposal will help to reduce air emissions, one of the objectives of AB 628. This proposal satisfies Section 25990(b)(2)(B) - an assessment of the role that distributed generation, combined with accurately priced utility services, could play in providing greater rate stability and energy cost certainty to aid in economic development, and proposed actions with respect to that role. In addition, this proposal helps to address the CAP'S Alternative Energy Generation objective to meet energy demands through renewable energy generation. The CAP has currently targeted a GHG reduction goal of 20% through alternative generation. While SDG&E's Renewable Portfolio Standard will have a significant positive impact on GHG emissions, additional measures will be required in order to meet goals. In addition, this proposal is in line with the State's climate change policy, including the GHG EOs and SB 350.

III. Greenhouse Gas Reduction or Cost Savings

As specified in the CAP, shifting from traditional, GHG-emitting power sources (fossil fuels) to clean, renewable energy can contribute significantly to meeting the District's GHG reduction targets. The District can help meet energy demands through on-site, distributed renewable energy generation.

IV. Beneficiaries of the Proposal

Depending upon the ultimate contract with the solar developer, the beneficiaries of clean generation could be any or all of the following:

- The District,
- District tenants,
- Residents in communities adjacent to the District tidelands, and
- Other customer stakeholders.

V. Roles and Responsibilities

SDG&E is willing to assist the District with identifying suitable locations for the solar installations and aligning potential opportunities identified in the District's Port Master Plan Update.

VI. Implementation Timeframe

The implementation timeframe for this proposal could vary subject to final project design, but will largely be deployed before 2020. Specifically, EcoShare is available today, however EcoShare projects cannot begin construction until a PPA is in place with SDG&E. SDG&E currently holds two EcoShare solicitations per year, and the typical timeframe from the beginning of the solicitation to contract execution is approximately 6-7 months. Realistically, this means there is likely a 1.5-2-year delay between identifying land and a developer and having an operational project.

VII. Proposal Funding

No incremental funding is anticipated to implement this proposal, as it leverages the existing SDG&E EcoShare program.

Shore Power Rate

I. Proposal Overview

An AB 628 shore power rate will be filed with the Commission as part of its EMP related application. If approved, the electric rate will be applicable only to the District's cruise ship terminal and will be indexed to SDG&E's class-average electric rate for the Medium/Large C&I customer class. Adoption of the shore power rate is a critical component of the AB 628 proposal as it addresses and mitigates a significant impact associated with the GHG emission reductions and preserves cruise ship business of the District and benefits the entire San Diego Region.

Under the plan, the District's monthly electric service bill from SDG&E will show charges under the District's otherwise applicable tariff rate schedule (Schedule AL-TOU) and a discount or separate credit (showing both dollar amount and percentage) will be included. The discount, or credit, will be recalculated each billing period to cause the net electric rate paid by the District to equal SDG&E's currently-effective Medium/Large C&I class-average rate. Taxes and fees applicable to the discounted electric charges will be shown on the bill or by means of the separate credit.

For reference purposes, SDG&E's current Medium/Large C&I class-average rate is 19.85 cents per kWh, effective March 1, 2017 (Ref. Advice Letter 3034-E, Attachment A). For billing purposes, the applicable AB 628 Shore Power Rate would

be prorated based on number of billing period days effective for each class-average rate.

The dollar and percentage discounts shown on the bill, or provided separately, would be calculated as in the following example:

Line #	Description		Units	Notes:
1	Electricity Delivery	139,850	kWh	Monthly usage stated on bill
2	Total Electric Charges	$ 155,000.00		Otherwise applicable bill amount (i.e. before discount and before Taxes & Fees)
3	Med/Large C&I Class-Average Rate	$ 0.19850	per kWh	From Implementation Advice Letters, Attachment A
4	**Total Electric Charges - Discounted**	**$ 27,760.23**		Line 1 multiplied by Line 3; This amount would be shown on bill or with separate credit
5	**Line-Item Discount**	**$ 127,239.78**		Line 4 minus Line 2; This would be shown on the bill or provided as a separate credit, and tracked for recovery
6	**Percentage Discount**	**82.1%**		Line 5 divided by Line 2; This would be shown on the bill or as separate credit

VIII. Alignment with AB 628

This proposal addresses the following legislative requirements:

- Rate design proposals to support AB 628, Section 1(d): “Energy utility customers located within the state’s port and harbor districts may benefit from the addition of new businesses and the retention of existing businesses through increased energy cost certainty.”
- Rate design proposals to support AB 628 Section 1(e): “Businesses located within the state’s port and harbor districts may benefit through greater stability and certainty in the cost of energy services.”
- Rate design proposals to support Section 25990 (b)(2)(B): “An assessment of the role that distributed generation, combined with accurately priced utility services, could play in providing greater rate stability and energy cost certainty to aid in economic development, and proposed actions with respect to that role.”

IX. Greenhouse Gas Reduction or Cost Savings

The proposed rate options provided in this program will support reduction in air emissions through economic support of the CARB shore power requirements established by Section 93118.3 Airborne Toxic Control Measure for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At-Berth in a California Port.

X. Beneficiaries of the Proposal

The District and visiting cruise ships would benefit from reduced electric charges for shore power services. The rate proposal would also provide billing simplicity and more predictability for shore power service. The improved economics for shore power will also translate to increased economic benefits to the region. Each home port call represents a $2 million economic impact to the region. The loss of cruise ship business would have a significant economic impact on the regional economy.

XI. Roles and Responsibilities

SDG&E and the District would both need to actively participate in the proceeding at the Commission through supporting testimony. The District would be responsible for long-term improvements in the overall energy use profile. Significant improvements in the District's annual load factor will facilitate a smooth transition, with minimal increases to the monthly bill amount, after the AB 628 Shore Power Rate terminates.

XII. Implementation Timeframe

The AB 628 Shore Power Rate would be in effect for a period of five (5) years. The timeframe for implementation will be based upon approval of the shore power rate

proposal by the Commission. SDG&E has requested that the District's Cruise Ship Terminal be allowed to stay on the small commercial rate as an interim measure until final adjudication of the application.

XIII. Proposal Funding

Cost recovery will be necessary. Costs of providing the rate discount would be recovered from all SDG&E customers by means of an adjustment to the Public Purpose Programs (PPP) charges. The discount amount to be recovered would be quantified annually by summing the monthly credit amounts.

Enhanced Partnership Program

I. Proposal Overview

SDG&E is proposing the creation of an Enhanced Partnership Program (EPP) for the District's Energy Management Plan outlined by AB 628. SDG&E and the District agree that flexibility is integral to the EMP and envision filing multiple EMPs over the course of the next 15 years to provide opportunities to align with new state/local goals, laws, regulations and directives, leverage new technology solutions and strategic planning for an Advanced Energy Community proposal to be implemented in phases. To realistically implement the District's EMPs and achieve the GHG reduction and economic development objectives of AB 628, dedicated oversight is needed.

Currently the District has a Local Government Partnership (LGP) agreement with SDG&E that is specific to EE, the LGP contract term is January 1, 2016 – December 31, 2020. Through this partnership the District receives funding to support CAP EE activities, which support both the District and District tenants. The five-year budget total is $3,464,200, providing the District with a budget of $692,840 annually which supports administration, marketing education and outreach, and direct implementation tasks to support EE activities.

The EPP will seek incremental funding for the District to provide the resources needed for the five-year term for the first EMP. This funding will support the important work the District is undertaking in support of the CAP goals and

objectives, that is not covered by the LGP EE agreement. This first EMP requests the needed resources to support clean transportation, advanced technologies and clean generation in support of the Districts CAP goals and objective.

SDG&E and the District will work jointly to finalize the detailed components for the EPP, by determining the appropriate EMP roles and responsibilities and framework for the program. Additionally, a five year budget will be proposed for SDG&E EPP labor, EPP set-up and operations, consulting and other smaller budget categories needed to support the EPP.

The EPP will provide an on-going governance framework for EMP activities such as planning, implementation, budget and milestone tracking, status updates and reporting. Some additional key activities to be handled by the EPP are communication and change management planning, stakeholder outreach and coordination, Steering Team coordination (including Community Groups) and grant writing.

EPP Goals:

1. Provide on-going governance framework for EMP activities such as implementation, tracking and reporting;
2. Future EMP planning, application filing and Implementation;
3. Provide a mechanism for inclusion of a broad stakeholder group; and
4. Provide resources to allow the District to work on a broader range of important activities supporting the EMP, beyond the District's existing EE LGP Agreement with SDG&E which has a narrowly defined EE scope.

II. Alignment with AB 628

The overarching goal of the EPP is to provide the framework and resources to support the various EMP project teams and stakeholders, to deliver successful projects that achieve goals and objectives outlined in the EMP in support of the District's CAP. Further, the EPP helps satisfy the elements of AB 628 by providing the oversight necessary to implement the individual proposals.

III. Greenhouse Gas Reduction or Cost Savings

The EPP proposal provides the needed resources and support to achieve GHG reductions and cost savings outlined in the EMP proposals.

IV. Beneficiaries of the Proposal

The EPP proposal will benefit the District, stakeholders, and the surrounding communities by supporting the individual EMP proposals to reduce GHG emissions and to retain and attract new business in the District tidelands.

V. Roles and Responsibilities

SDG&E and the District will work jointly to finalize the EPP proposal. One key area that will be mutually decided is to determine the roles and responsibilities, and the level of interaction the EPP will require from the District staff. The EPP intends to lessen the burden for the District staff by adding the needed framework and resources, and allow more flexibility to support a broader range of work that needs to be done in support of EMP proposals and the District's CAP goals and objectives.

VI. Implementation Timeframe

SDG&E and the District would like to formally create the EPP upon approval of this application filing. The EPP will be established and maintained through the term of this EMP, and for potential future EMP's.

VII. Proposal Funding

The EPP proposal will be funded through the PPP charge, and cost recovery will be necessary. The requested funding amount will be provided in SDG&E's application before the Commission.

APPENDIX B – Assembly Bill 628 Required Elements

AB 628 Required Elements

An assessment of current energy consumption within the district by energy source and type of users. Examples may include commercial, industrial, governmental, ships, individual transport, and product transport.

An electric or natural gas forecast, developed in coordination with the serving electrical corporation, gas corporation, communication choice aggregator established on or before July 1, 2013, or local publicly owned electric or gas utility that reflects anticipated load growth within the district.

Based on intermittent data representing aggregate San Diego Unified Port District (District)-wide electricity consumption over the period 2006 to 2016, a forecasted electricity consumption analysis was performed through 2025. Aggregate electricity and natural gas data obtained for years 2006, 2013, and 2016 were utilized as inputs into the forecast. To determine the forecasted electricity consumption, a linear extrapolation of past years was conducted for 2020 and 2025. As shown in Table 1, a forecasted consumption based on trend data for these three years indicates that electricity consumption is expected to increase through 2025, and natural gas is expected to decline over the same period. The growth in electricity consumption represents a 12% increase from 2006 levels. The reduction in future natural gas consumption represents a 37% reduction from 2006 levels.

Table 1. Forecasted Electricity and Natural Gas Consumption

Year	Electricity (kWh)	Natural Gas (Therms)
Past Consumption		
2006	321,365,741	30,549,842
2013	340,852,059	24,345,113
2016	339,089,994	25,486,155
Forecasted Consumption		
2020	350,033,007	22,012,751
2025	359,791,253	19,144,180

The District is currently developing an update to the Port Master Plan which will guide development through 2050. The forecast will be refined as future projects and growth throughout the District are better defined. Other considerations for future electricity and natural gas demand and consumption will include increased requirements for shore power located at the District's marine and cruise terminals, as well as infrastructure for electric vehicle charging for a range of vehicle types from light duty to heavy duty classes. The Districts expects that even with future growth, greenhouse gas reductions can be achieved through energy conservation, increased renewable energy sources, and alternative fuels.

An assessment of the role that distributed generation, combined with accurately priced utility services, could play in providing greater rate stability and energy cost certainty to aid in economic development, and proposed actions with respect to that role. This assessment shall be developed jointly with the serving electrical corporation, gas corporation, community choice aggregator established on or before July 1, 2013, or local publicly owned electric or gas utility.

To be updated upon completion of Port of San Diego AB628 Intervenor Testimony.

"An assessment, in consultation with business and industry, that identifies current and emerging processes and technologies to reduce energy consumption and improve energy efficiency."[46]

Rocky Mountain Institute (RMI) was brought under contract by SDG&E to facilitate SDG&E and the District in developing an innovative energy management plan. The first step was framing opportunities; the second step was designing a collaborative launch; and the third step was an all-day RMI facilitated working session with SDG&E and the District resulting in the production of a summary report of workshop results.

SDG&E's team consulted with engineering industry experts to determine the best resources to provide specialized audits to address the unique needs of some of the largest District tenants. SDG&E researched and vetted firms with expertise in refrigeration, shipyards and compressed air systems in support of District tenant needs. SDG&E will further its audit activities by continuing to assess current processes and technologies to identify additional opportunities to reduce energy consumption and improve energy efficiency.

SDG&E has already completed targeted audits for some of the District's largest tenants on equipment and processes identified by tenants as major energy users with the greatest potential for savings.

[46] *Id.* at §25990(b)(2)(C).

- Combined consumption of all those evaluated customers exceeded 100,000 MWh (based on a 2013 baseline).
- A total of about 50 measures in heating, ventilation, and air conditioning (HVAC), lighting and industrial processes were identified.
- Audited customers were from various Commercial and Industrial segments, including lodging, warehousing, manufacturing, and cold storage.
- These targeted audits identified more than 12,000 MWh and 15,000 therms of savings in the Commercial and Industrial segments.
- SDG&E estimates that of these identified savings approximately 85% of the kWh savings have a 50% or better chance of being implemented based on payback period, availability of incentive funding, and probability of project approval.
- The targeted audits also identified some new measures that may require further study. As a result, SDG&E will propose emerging technology (ET) projects for the direct benefit of District tenants. These may be District-specific or they may leverage other ET efforts.

"An assessment, in consultation with business and industry, that identifies domestic and international shipping requirements and operations related to energy use and consumption."[47]

I. San Diego Unified Port District Cruise Terminal Requirements and Operations Overview

The District includes two maritime cruise terminals and two public cargo terminals that support commercially competitive maritime operations. Of those four terminals, only the cruise operations' utilization of shore power for cruise ships fall under the EMP shore power rate proposal.

The District's cruise terminals have three berths on two piers, "B Street Pier" and "Broadway Pier". These three berths accommodate two categories of cruises that call at the cruise terminal, "homeport calls" and "visitation calls." The shore power regulatory requirements, as further described below, apply equally to both types of cruise ship calls, but the homeport and visitation calls have slightly different markets with varying price sensitivity.

When combined, these homeport and visitation cruise calls have a large regional economic impact. For example, in 2015 the San Diego Cruise Terminal hosted 77 cruise calls, generating over $82 million in overall regional economic impact, $46

[47] *Id.* at §25990(b)(2)(D).

million in spending with local businesses by the cruise lines, and over 700 direct and 2,000 indirect jobs.[48]

Homeport Cruise Calls

- Homeport calls are when a cruise ship docks at the District's cruise terminal, disembarks all current cruise passengers and then boards a completely new set of embarking passengers. This embarking/disembarking process includes baggage handling, stores loading and customs operations.
- The District's cruise terminals are two of five terminals in Southern California that can accommodate homeport calls. The other terminals are located in Long Beach and Los Angeles.
- Homeport calls are scheduled and marketed two-to-three years in advance. Due to the fact that passengers make travel arrangements far ahead of time to arrive in San Diego prior to a cruise, the cruise lines cannot easily cancel already-advertised homeport cruises without frustrating customers and damaging their brand.
- During the 2016/2017 cruise season, Holland America Lines and Disney Cruise Lines were the main homeport cruise lines at the District, and their vessels utilized shore power.

[48] Business Research & Economic Advisors, Economic Impact Analysis of the San Diego Cruise Sector 2015, June 2016, available online at https://www.portofsandiego.org/commercial-fisheries/documents/about-port-of-san-diego-documents/strategic-plan/8037-economic-impact-analysis-2015/file.html.

- In addition, these homeport calls generated an estimated regional economic impact of $1.9 million per homeport call.

Visitation Cruise Calls

- Visitation calls are when a cruise ship docks at the terminal for a day so that its passengers can take excursions to regional attractions. For San Diego, these attractions include beaches, retail, museums, the San Diego Zoo, restaurants, and amusement parks.
- There are two additional facilities in Southern California that can accommodate visitation through tendering, with passengers brought ashore on small tendering boats rather than disembarking from a dock. The California Air Resources Board (CARB) At-Berth Regulations do not require vessels calling at the tendering-only facilities located in Santa Barbara and Catalina Island to use shore power, so visitation calls diverting from San Diego can avoid the electricity costs altogether. For this reason, visitation cruises are considered to be a separate market that could be lost quickly if shore power rates increase significantly.
- These calls are scheduled about eighteen to twenty-four months in advance in order to develop the schedule for a cruise, but they are more easily re-routed than homeport calls (which must be cancelled).
- In the 2016/2017 cruise season, Princess Cruises was the largest visitation cruise line for the Port of San Diego and utilized shore power. The other

visitation lines called at the port four-or-less times per calendar year, so they were not required to use shore power.[49]

- Visitation calls generate an estimated regional economic impact at of about $600,000 per call.

II. Domestic and international shipping requirements and operations related to cruise industry energy use and consumption

The domestic and international requirements and operations related to cruise industry energy consumption, and the ongoing success of this critical regional industry, include:

Requirement #1: The District must provide vessel operators with access to shore power so they can comply with CARB At-Berth regulations[50]:

- In December 2007, CARB approved the "Airborne Toxic Control Measure for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At-Berth in a California Port" Regulation, commonly referred to as the At-Berth Regulation. In general, this regulation requires that by 2020, at least 80% of the container ships, passenger ships, and refrigerated-cargo ships calling at seven Californian ports use shore power when in port.[51]

[49] Section 93118.3.(b)3(E)2 of the At-Berth Regulations (title 17, chapter 1, subchapter 7.5, California Code of Regulations (CCR) Section 93118.3) exempts "[a] fleet composed solely of passenger vessels that visits the same California port fewer than 5 times total in a calendar year" from the shore power requirements.
[50] For a full description of the At-Berth Regulations, see the California Air Resources Board website at https://www.arb.ca.gov/ports/shorepower/shorepower.htm.
[51] For the full text of the regulation, see https://www.arb.ca.gov/ports/shorepower/finalregulation.pdf. At this time, there is a limited exemption for "[a] fleet composed solely of passenger vessels that visits the same California port fewer than 5 times total in a calendar year."

- In order to help the cruise lines comply with this regulation, the District installed shore power capabilities at its cruise terminals in 2010.

Requirement #2: The shore power electricity rate should reflect the unique features of the cruise business:

- Shore power has a load factor (the ratio of average demand to peak demand) that is far lower than most businesses. New standard utility rates with high fixed and demand charges that may be appropriate for other businesses can result in effective shore power electricity costs of a $1.00/kWh or more.
- The cruise season in San Diego is from October through April, so shore power is rarely used during the peak hours when demand on the utility grid is highest; that is, summer evenings. Compared to other businesses, shore power imposes relatively little cost on the utility system.
- Shore power use is greatest during peak solar hours (8:00am to 5:00pm), making shore powering cruise vessels a good opportunity to use California's abundant solar-generated electricity.[52]
- Because ships are by nature mobile, cruise ship use of the District's cruise terminals is highly elastic. Even a modest increase in per-visit costs can lead to a significant decrease in cruise ship business – business which provides substantial economic benefits to the region. This is true for both homeport and visitation

[52] Penn, Ivan. California invested heavily in solar power. Now there's so much that other states are sometimes paid to take it. Los Angeles Times. June 22, 2017. P. online: http://www.latimes.com/projects/la-fi-electricity-solar/.

calls, and in the case of visitation calls, there are many regional alternatives that do not require shore power.

- A shift to new standard utility rates will cause a more-than-modest increase in per-visit costs, and can lead to significant regional economic damage.

Requirement #3: The port must provide reliable and competitively priced port services:

- The cruise market is price sensitive, with competition between cruise companies and other tourist attractions, therefore maintaining the cruise industry in San Diego requires that the District be price competitive so that cruise lines calling in San Diego can offer their customers attractive rates.
- Vessels are currently charged an energy-only (per kWh) "pass through" rate that is straightforward to calculate and administer. A shift to new standard utility rates with fixed and demand charges would require the District to accurately estimate visits months in advance, and to allocate a lump sum of hundreds of thousands of dollars, or even millions of dollars, among an uncertain number of visits. This would impose a significant risk of under and over-collection on the District.
- The District estimates that the transition from the SDG&E Small Commercial Rate with no demand charges to the Commercial and Industrial rate with demand charges would increase the terminals' total energy bills by 400% to 600%. Based on these initial calculations, as this electricity cost is transferred to the cruise

lines, it would increase their overall port charges by about 200% per call for shore powered vessels.

- A cost increase of this magnitude risks substantial losses to the District's cruise business.

Requirement #4: Cruise operators must have access to fuel that complies with the North America Emission Control Area (ECA) requirements:

- On March 26, 2010, the International Maritime Organization (IMO) officially designated waters off North American coasts as an area in which stringent international emission standards for sulfur will apply to ships.
- Cruise vessels operating within the ECA must use low-sulfur fuels or deploy exhaust gas cleaning technology.
- The District ensures that cruise vessels visiting the port are able to bunker (fuel) using compliant low-sulfur fuels.

III. Domestic and international shipping requirements and operations related to freight shipping industry energy use and consumption

The District's two public cargo terminals are Tenth Avenue Marine Terminal and National City Marine Terminal. These terminals work with vessels carrying refrigerated containers, automobiles, fertilizer, soda ash, petroleum, steel, windmill components, and miscellaneous project cargo. Tenth Avenue and National City marine terminals handled nearly 1.8 million tons of cargo in FY 2015, which moved on more than 400 vessels and barges calling at the District's two maritime freight terminals.

These two terminals also have a large economic impact on the region, with an estimated $2.0 billion in total economic value in FY 2015 from the terminals' marine cargo and vessel activity and supporting nearly 15,000 jobs in the State of California.[53]

The Port's Climate Action Plan (CAP) addresses activities at both these terminals, and the District is working with its tenants and customers to implement energy efficiency solutions. However, operations at the Tenth Avenue Marine Terminal and National City Marine Terminal are not included in the cruise shore power rate.

[53] Martin Associates, The Local and Regional Economic Impact of the Port of San Diego Marine Terminals, August 2016, p. 6-7 available online at https://www.portofsandiego.org/commercial-fisheries/documents/about-port-of-san-diego-documents/strategic-plan/8037-economic-impact-analysis-2015/file.html.

"A set of measurable energy performance and management goals that reduce air emissions and promote economic development, and a prioritized list of infrastructure projects, public education initiatives, and other actions that the district will undertake to achieve those goals."[54]

The District and SDG&E refer to the District's CAP, in which the following overarching GHG reduction goals are identified:

- 10% less than 2006 levels by 2020; and
- 25% less than 2006 levels by 2035.

In the CAP, the District provided the following sector-level GHG reduction goals:

- Transportation and Land Use: The District has identified the potential to reduce GHG by 62,210 metric tons of carbon dioxide (MT CO_2e/year) – or 57% under 2006 levels - by 2020.[55]
- Energy Conservation and Efficiency: The District has identified the potential to reduce GHG by 21,591 MT CO_2/year – or 20% under 2006 levels - by 2020.[56]
- Water Conservation and Recycling: The District has identified the potential to reduce GHG by 647 MT CO_2e/year – or 1% under 2006 levels – by 2020.[57]

[54] *Id.* at §25990(b)(3).
[55] Port of San Diego, Climate Action Plan, p. 20.
[56] *Id* at 24.
[57] *Id.* at 27.

- Alternative Energy Generation: The District has identified the potential to reduce GHG by 22,203 MT CO_2e/year – or 20% under 2006 levels – by 2020.[58]
- Waste Reduction and Recycling: The District has identified the potential to reduce GHG by 3,143 MT CO_2e/year. – or 3% under 2006 levels – by 2020.[59]
- Miscellaneous (supporting other programs and outreach to reduce GHG emissions): The District has identified the potential to reduce GHG by 35 MT CO_2e/year – or 0.3% under 2006 levels – by 2020.[60]

In support of the EMP, and in furtherance of the District's CAP goals, SDG&E has worked with the District to identify specific projects for which SDG&E has, or will be applying to the Commission for approval. These projects, described in detail in Appendix A, consist of the following:

- A Specialized Energy Efficiency measures proposal designed to achieve incremental savings identified through specialized audits;
- Advanced Technologies proposals, including a mobile battery storage project and a load forecast study to determine microgrid infrastructure needs at the District;
- A comprehensive Clean Generation proposal, which includes several customizable solar options to help meet the District's various GHG reduction and CAP goals;

[58] *Id.* at 28.
[59] *Id.* at 31.
[60] *Id.* at 32.

- A Clean Transportation proposal, set forth in SDG&E's SB 350 application, as well as the potential for future projects to expand the electrification of the District's transportation sector;
- A Shore Power Rate proposal for the District's shore power account designed to mitigate the effects of prospective rate shock and enable the District's Cruise Ship Terminal to continue to serve as a regional economic hub; and
- An Enhanced Partnership Program proposal to provide for adequate oversight and resources to ensure that each of the above proposals is implemented efficiently.

In addition to the projects described in Appendix A, the District currently has the following infrastructure projects under development:

- North Embarcadero Visionary Plan;
- Chula Vista Bayfront;
- Lane Field;
- Old Police Headquarters;
- Commercial Fisheries;
- Harbor Island Redevelopment;
- America's Cup Harbor;
- San Diego Marriott Marquis and Marina; and
- Central Embarcadero.

Regarding public education initiatives, the District and SDG&E will work to a jointly develop a communications plan to educate relevant stakeholders about the areas of focus of the EMP, and the benefits of the programs outlined in Appendix A.

"A list of recommendations, developed jointly with the serving electrical corporation, gas corporation, community choice aggregator established on or before July 1, 2013, or local publicly owned electric or gas utility for the enhanced use of cost-effective energy efficiency and demand-side management in existing buildings and the inclusion of energy efficiency measures as part of the development of new buildings."[61]

- For standard EE program measures, SDG&E will be able to offer customers incentives that are based not only on energy savings above building code, but also on "to code" energy savings that are based on the existing equipment, as directed in Assembly Bill 802.
- SDG&E will continue to also identify non-standard or "specialized" measures that will cost-effectively reduce energy consumption for District tenants. These are measures that typically would not qualify for SDG&E's standard EE program incentives. For example, measures related to equipment that is temporary and not permanently installed, or equipment that is used at the District, but owned by non-District tenants.
- Expected savings from the previously completed targeted audits come from both specialized and standard measures, and SDG&E estimates that of all expected savings approximately 15% of the kWh savings and 50% of the therm savings will be from

[61] *Id.* at §25990(b)(4).

specialized measures. Specialized audits found energy savings opportunities that exist in the following areas:

  - Industrial Process Load;
  - Temporary Services;
  - To-Code Measures;
  - Advanced Controls and Energy Dashboards; and
  - Emerging Technologies.

- SDG&E proposes to leverage its existing demand response programs and to provide a comprehensive solution for the District and District tenants.

"A description of measures to be taken to reduce air emissions for vehicle use within district boundaries, including vehicles used for movement of commercial products. Proposed actions, developed jointly with the serving electrical corporation, gas corporation, community choice aggregator established on or before July 1, 2013, or local publicly owned electric utility, may include replacement of vehicles with lower emitting alternatives and development of infrastructure, in appropriate areas, to aid in the refueling of alternative fuel vehicles."[62]

The District and SDG&E refer to SDG&E's SB 350 application before the Commission, which contains proposals in furtherance of this objective. Specifically, SDG&E intends to conduct 30 – 40 installations that include a combination of components such as electric vehicle supply equipment, load research meters and data loggers to obtain operational data and facilitate growth of Medium Duty/Heavy Duty and forklift electric vehicles in an effort to reduce GHG emissions. A detailed description of this project can be found in Appendix A. In addition to this project, SDG&E and the District anticipate additional opportunities to develop additional clean transportation projects in furtherance of the CAP GHG reduction goals.

[62] *Id.* at §25990(b)(5).

"A summary identifying governmental and nongovernmental impediments to implementation of the plan that includes recommendations on how these impediments may be overcome."

Energy Efficiency:

The two primary governmental actors are the Commission and the State Legislature. Since the EMP and the energy efficiency elements contained therein are in response to direction from these entities, the District and SDG&E would not consider changes in direction from the Commission and State Legislature regulators as impediments but rather a change in prioritization or direction.

External forces, beyond the control of the EMP, would include the general economy and, more specifically, economic impacts on shipping and tourism. This category also includes addressable issues such as business decisions, financial returns, impact of operations and perceptions from potential participants. Each of these can be mitigated by thoughtful planning, which includes the EE RFO concept (further described in Appendix A) to attract best practices and industry expertise, dedicated implementation staff, and open communication between all stakeholders.

Advanced Technologies:

There is currently a lack of specific funding mechanisms for Advanced Technology projects. SDG&E has identified potential sources of funding such as EPIC and AB 2868 which may mitigate this issue.

One potential impediment is the unknown future cost and capabilities of advanced technologies. The District and SDG&E plan to overcome this potential issue by taking a measured approach and constantly evaluating the technology landscape to provide the most benefit at the lowest cost.

Clean Generation

One potential impediment to the EcoShare proposal would be any delays or other issues which arise out of project permitting or environmental reviews which may be necessary for implementation.

The success of EcoChoice and EcoShare are dependent on robust subscription. Depending upon the design of the ultimate contract with the solar developer, SDG&E will assist the District to overcome this potential barrier through encouragement to District tenants and customers located in “communities of concern” to participate in these programs.

Enhanced Partnership Program

If the AB 628 EMP proposals are approved but the EPP is not approved there would be no dedicated resources or funding to provide the framework and resources to plan, track and implement various EMP proposals. For this reason, SDG&E stresses the importance of the EPP and points to the support it has garnered from key stakeholders. If the Commission approves the EPP at a reduced budget level, it would similarly harm the ability for SDG&E and the District to effectively implement the EMP. SDG&E refers the Commission to the comprehensiveness of

the EMP, and proposals being pursued in furtherance of it, which extend beyond energy efficiency.

"A description of one-year, 3-year, 5-year, 10-year, and 15-year objectives for implementation of the plan. These objectives shall be in sufficient detail to allow the district to undertake a meaningful annual review of the plan's progress."

Energy Efficiency

Due to the changing nature of technology and EE regulation, the District and SDG&E intend to implement energy efficiency in a phased approach. Defined goals have only been established for the initial three years. Subsequent updates to the EMP will be made to address mid and long-term periods.

The initial energy savings goals are:

Year 1: 3,250,000 kWh

Year 1-3: 10,000,000 kWh

The year three goal of 10 million kWh is the established goal. The one-year goal has been provided for reference purposes only. Due to the planned RFO approach to EE implementation,+- annual goals within the three-year period will be proposed by bidders and finalized during contracting.

Advanced Technologies

The proposed microgrid, if required, is anticipated to provide sufficient renewable, reliable power to enable the District and its tenants' critical loads to "ride through" power outages, and provide safety, security, and economic benefits. The objective of increased reliability does not change over time, although the District's assessment of the value of that reliability may change.

Year 1 –Reliability requirements and microgrid concept complete

Year 3 – Increased reliability

Year 5 – Increased reliability

Year 10 – Increased reliability

Year 15 – Increased reliability

Clean Generation (subject to the District's ultimate contract with the solar developer)

Year 1 – Identify land appropriate for solar PV and procure the design/construction of solar projects;

Year 3 – Have at least one operational solar project;

Year 5 – Have multiple operational projects and/or enroll customers in clean generation projects;

Year 10 – Sustain clean generation production and/or enrollment in clean generation programs; and

Year 15 – Sustain clean generation production and/or enrollment in clean generation programs.

Enhanced Partnership Program

The EPP would align with the District's CAP GHG established and future goals, reduction program, implementation timeline, and reporting milestones to inform the annual review and reporting needs of the EMP's progress. The District's implementation, tracking and monitoring schedule provides for annual updates each year, with a more comprehensive update every three years (see Figure 1 for current timeline). This reporting timeline may adapt overtime and the EPP will respond to such changes to ensure adequate and meaningful reporting on the EMP.

Annual Performance Evaluation (Progress Report) – Based on implementation of GHG reduction measures and performance indicators.

Comprehensive Evaluation – Based on a comprehensive GHG inventory to measure performance indicators and develop an update on overall progress towards GHG reduction targets.

Figure 1. Port of San Diego Climate Action Plan GHG Reduction Implementation Timeline