

Application: _____

Exhibit No.: SDGE-_____

Witness: Randy Schimka_____

PREPARED DIRECT TESTIMONY OF
RANDY SCHIMKA
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY
CHAPTER 1



BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

JULY 30, 2018

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APPENDIX A – COSTS AND SITE SCENARIOS

1 stations) at city and county parks within SDG&E’s service territory. Because there is only one
2 state park in SDG&E’s territory that is within a disadvantaged community site (“DAC”)³, these
3 additional city and county park locations will allow SDG&E to prioritize DACs as part of its
4 Parks Pilot, for an additional total direct cost of \$3.8M. The total Parks Pilot cost – for both state
5 parks and beach sites and city and county park sites — is \$8.9M.

6 AB 1082 and 1083 require that the CPUC issue a decision on the pilot applications by
7 December 31, 2018, in an expedited five-month review process.⁴ As shown in more detail
8 below, the proposed pilots meet the following requirements for expedited review,⁵ as defined by
9 the ACR:⁶

- 10 • Have a mechanism that allows for cost recovery up to a California Public
11 Utilities Commission (“CPUC”)-defined limit;
- 12 • Minimize costs and maximize benefits;
- 13 • Do not unfairly compete with nonutility enterprises;
- 14 • Include performance accountability measures;
- 15 • Are in the interest of ratepayers;
- 16 • Use workers paid the prevailing wage or employed by the utility to install
17 charging stations;
- 18 • Require the site hosts to participate in a time-variant electric rate for the
19 charging stations; and
- 20 • Prioritize sites located in DACs.

³ The term “DAC” is defined consistent with Decision (“D.”) D.16-01-045 and SDG&E Advice Letter (“AL”) 2876-E, approved April 28, 2016 and effective March 31, 2016.

⁴ ACR at 1.

⁵ The bills require the utilities to submit any applications by July 30, 2018 and for the CPUC to decide on the applications by December 31, 2018, in an expedited five-month review process. *Id.*

⁶ *Id.* at 2.

1 Upon approval from the CPUC, SDG&E will implement the pilots in a variety of private
2 and public venues, including school facilities, educational institutions, parks, and beaches,
3 consistent with AB 1082 and 1083. This will, in turn, provide greenhouse gas (“GHG”)
4 emission reduction benefits,⁷ provide sales growth for EV manufacturers and electric vehicle
5 service providers (“EVSPs”), provide local skilled labor employment for installation and
6 maintenance of charging equipment, continue to transition EV drivers to time-variant rates, and
7 positively impact DACs with the installation and operation of local charging equipment.

8 Prepared direct testimony chapters are organized as follows:

- 9 • Chapter 1: (Randy Schimka) provides an overview of SDG&E’s vision
10 and costs regarding transportation electrification and policy support for its
11 School and Parks Pilots;
- 12 • Chapter 2: (Kellen C. Gill) describes the proposed rate recovery for the
13 transportation electrification pilot proposals that are the subject of this
14 application;
- 15 • Chapter 3: (Amanda D. White) identifies the costs associated with the
16 pilot proposals; describes the methodology used by SDG&E in
17 determining the revenue requirements for the proposals; and identifies the
18 resulting annual revenue requirements for the Pilots;
- 19 • Chapter 4: (Norma G. Jasso) describes the balancing accounts requested
20 for recovering the costs related to SDG&E’s School and Parks Pilots; and
- 21 • Chapter 5: (Tony Rafati) describes the air quality impacts for SDG&E’s
22 School and Parks Pilots.

⁷ See the Prepared Direct Testimony of Tony Rafati (Chapter 5) for further details.

1 **II. SCHOOL PILOT**
 2 **A. Description and Features**
 3 **1. Pilot Summary**

Pilot Components	SDG&E’s AB 1082 Pilot
Commission Review Mechanism	Expedited Review.
Objectives	Provide EV charging infrastructure at 30 school facilities and other educational institutions.
Market Segment and Vehicles Targeted	People movement; Level 2 (“L2”) and DC Fast Charger (“DCFC”) electric vehicle supply equipment (“EVSE”) for light-duty passenger vehicles.
Vehicle Goals	Install charging stations and infrastructure with time-variant rates at 30 school facilities and educational institution locations – a total of 184 L2 charging stations and 12 DCFC units. The number of stations at each location will depend on the size of the venue and the number of current and expected EV drivers.
Implementation Timeframe	Installation will commence after CPUC approval of the implementation advice letter, and charging data will be collected and analyzed for the two-year Pilot duration.
Project Partners	California Department of Education. Local school districts and educational facilities.
Leveraged Funding	Site hosts/locations to sign agreements to allow the installation of the charging equipment and infrastructure, provide parking spaces for charging, and expertise to help streamline the design, installation and permitting efforts.
Stranded Asset Mitigation	SDG&E ownership and maintenance will assure reliable and available charging equipment. Level 2 EVSE will conform to SAE J1772 standards ⁸ and the DC Fast Charge units will have charging cables that can connect to either a Chademo-equipped ⁹ or SAE Combined Charging System (CCS)-equipped ¹⁰ vehicle.

⁸ Wikipedia, SAE J1772, available at https://en.wikipedia.org/wiki/SAE_J1772.

⁹ Wikipedia, CHAdeMO, available at <https://en.wikipedia.org/wiki/CHAdeMO>.

¹⁰ Wikipedia, Combined Charging System, available at https://en.wikipedia.org/wiki/Combined_Charging_System.

Grid Impacts	Use of EV time-of-use (EV-TOU) rates will incentivize drivers to charge at times of the day, benefitting the grid.
Emissions Benefits & Accounting Methodology	GHG Emission Reductions: 554 MTCO ₂ /first year. ¹¹
CA Regulation Supported by Pilot	AB 1082 Senate Bill (“SB”) 32 SB 350 2016 zero-emission vehicle (“ZEV”) Action Plan Climate Change Scoping Plan California Transportation Plan 2040 Executive Order B-30-15 Executive Order B-48-18
CPUC Regulation Supported by Pilot	§740.3(a), (c) §740.8 §740.12 § 740.13
Monitoring and Evaluation Plan	As described in Section II 3.C, Pilot data will be collected, analyzed, and shared with the CPUC, the Program Advisory Council (“PAC”), and other stakeholders.
Supplier Diversity	Diverse Business Enterprise (“DBE”) goal: 40%.
Disadvantaged Community (“DAC”) Participation	DAC Goal: 25%.
Cost	Estimated Direct Costs: \$9.9M.

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2. Portfolio Fit

The ACR requires SDG&E to describe how these Pilots aligns with its broader TE plans and portfolios, and how these proposed Pilots compare to its other ongoing and proposed transportation electrification projects.¹² The California legislature and the Commission regard the acceleration of widespread TE as a vital tool in achieving environmental policy goals.¹³ According to the California Air Resources Board (“CARB”), the transportation sector now

¹¹ See Prepared Direct Testimony of Tony Rafati (Chapter 5) for further details.

¹² ACR at 5.

¹³ See P.U.C. §§ 740.12(a)(2); 740.12; 701.1(a)(1).

1 accounts for 41% of all GHG emissions in California.¹⁴ Although CARB found that California
2 has met its 2020 GHG reduction target four years early, CARB concluded that emissions from
3 the transportation sector continue to rise, increasing by two percent in 2016; from 39% to 41%.¹⁵
4 SDG&E’s School Pilot helps SDG&E expand EV charging infrastructure in schools and
5 educational institutions, therefore advancing the State’s TE goals.

6 As part of its broader transportation electrification efforts, SDG&E is currently
7 implementing both its Power Your Drive (“PYD”)¹⁶ program for workplaces and multi-unit
8 dwellings (“MUDs”), and its six SB 350 Priority Review Projects (“PRP”).¹⁷ As part of its PRP
9 portfolio of offerings, SDG&E seeks to provide charging infrastructure for shuttles, airport
10 ground support equipment, the Port of San Diego, and fleet delivery services. Additionally,
11 SDG&E is working to increase EV sales by engaging automobile dealerships. Further, SDG&E
12 is engaging with CalTrans to build public EV charging infrastructure at four Park-and Ride
13 locations in its service territory, under its Electrify Local Highways PRP.

14 As part of PYD, SDG&E aims to install at least 3,000 EV charging stations and
15 infrastructure at 300 apartments, condominiums and places of work. As of July 20, 2018, the
16 PYD pilot has installed and energized 825 charging stations at 76 locations. In addition, 134
17 sites encompassing 1,596 nozzles are in the design phase, with 10 sites with 162 nozzles under

¹⁴ California Air Resources Board, *California Greenhouse Gas Inventory – 2018 Edition, 2000-2016 GHG Emissions Trends Report* (July 11, 2018), available at <https://www.arb.ca.gov/cc/inventory/data/data.htm>.

¹⁵ California Air Resources Board, *Climate Pollutants Fall Below 1990 Levels for First Time* (July 11, 2018), available at <https://ww2.arb.ca.gov/news/climate-pollutants-fall-below-1990-levels-first-time>.

¹⁶ SDG&E’s Vehicle-Grid Integration Pilot Program, later rebranded as “Power Your Drive,” was approved in D.16-01-045.

¹⁷ See D.18-01-024.

1 construction. PYD continues to be popular in SDG&E’s service territory, as PYD is almost fully
2 subscribed, with 1,122 sites on PYD’s interest list as of late July 2018.

3 Power Your Drive has demonstrated that installing new charging stations does induce
4 employees or residents to purchase EVs to utilize newly installed charging equipment. SDG&E
5 has also learned numerous lessons from PYD that can be used to improve future programs such
6 as the School and Parks Pilots, including:

- 7 • Insights into the EV charging technology that is available in the
8 marketplace;
- 9 • Streamlining the request for proposal (“RFP”) and the EVSP qualification
10 process;
- 11 • Implementing a more streamlined agreement strategy;
- 12 • Minimizing the distance for trenching to help control costs;
- 13 • Improving metering testing;
- 14 • Increasing site hosts interests by showing existing sites with installed
15 SDG&E charging infrastructure; and
- 16 • Making site designs more flexible to encourage higher participation.

17 Of interest here, PYD currently has 10 schools and two educational administration
18 facilities that are participating as “workplaces.” These schools average 10 charging stations per
19 site.

20 SDG&E’s School Pilot builds off the company’s experiences with schools in PYD to
21 increase school participation. PYD only allows staff at schools and educational institutions to
22 have access to Level 2 EV charging. Under the School Pilot, schools will also have the option to
23 provide charging infrastructure for a larger group of students, parents and other visitors. The
24 School Pilot also expands the charging options available to schools and educational institutions.
25 While the average installation requirement for PYD participation is 10 Level 2 stations, the

1 School Pilot will allow for a smaller number of charging stations for schools and educational
2 institutions that have fewer drivers and/or less space for charging EVs.¹⁸

3 Additionally, the School Pilot’s financing structure would increase the number and types
4 of schools that can participate. PYD requires a participation payment. School participation in
5 PYD has solely consisted of public schools in DACs, where the participation payment is waived,
6 or private schools with funding for the PYD participation payments. As discussed below, the
7 School Pilot seeks to remedy this potential impediment through a utility ownership model that
8 has no participation fee. Therefore, the School Pilot offering complements SDG&E’s ongoing
9 portfolio of charging investments.

10 SDG&E also has a pending application before the CPUC to provide charging
11 infrastructure to support medium-duty and heavy-duty (“MD/HD”) EVs.¹⁹ If approved, the
12 program will support a range of EVs, including electric school buses. The vehicles in the
13 MD/HD program will maintain their normal operating schedule and charge overnight and
14 midday, when renewables are plentiful. SDG&E believes the MD/HD vehicle-to-grid-pilot
15 complements the School Pilot, as the MD/HD focuses on school buses, while the School Pilot
16 addresses passenger vehicles.

17 **3. Stakeholder Coordination**

18 The ACR requires SDG&E to consult with the California Department of Education prior
19 to submitting its AB 1082 application to understand the potential charging needs at facilities
20 under the Department’s authority. The ACR further instructs that utilities should consult with

¹⁸ See Appendix A for a list of available School Pilot site scenarios and costs.

¹⁹ See Application (“A.”) 18-01-012, Application of San Diego Gas & Electric Company (U 902-E) for Approval of Senate Bill 350 Transportation Electrification Proposals Regarding Medium and Heavy-Duty Electric Vehicles and a Vehicle-to-Grid Pilot.

1 other school and educational organizations, as necessary.²⁰ SDG&E met with the following
2 statewide and local organizations to garner feedback and input on the School Pilot.

3 **List of Statewide Consultative Meetings**

- 4 • California Air Resources Board
- 5 • California Community College Chancellor’s Office
- 6 • California Department of Education
- 7 • California Energy Commission
- 8 • California Public Utilities Commission
- 9 • California School Energy Coalition
- 10 • California State University Chancellor’s Office
- 11 • University of California Transportation Office

12 **List of Local Consultative Meetings and Letters of Support²¹**

- 13 • American Lung Association
- 14 • California State University – San Marcos
- 15 • Carlsbad Unified School District
- 16 • City of Encinitas – Mayor Catherine S. Blakespear
- 17 • City of San Diego – Councilmember David Alvarez
- 18 • City of San Diego – Councilmember Chris Cate
- 19 • City of San Diego – Councilmember Christopher Ward
- 20 • Cleantech San Diego’s K-12 Schools Sustainability Strategy
- 21 Coalition
- 22 • Chula Vista School District
- 23 • Encinitas School District
- 24 • Escondido School District
- 25 • Poway School District
- 26 • San Diego State University

²⁰ ACR at 3.

²¹ See Letters of Support attached to Application as Appendix A.

- 1 • San Diego Unified School District
- 2 • SDG&E Program Advisory Council
- 3 • University of California San Diego
- 4 • University of San Diego

5 External stakeholders support SDG&E’s School Pilot to support transportation
6 electrification for schools and educational institutions, evidenced by the letters of support.

7 **4. Pilot Description**

8 As part of the School Pilot, SDG&E proposes to provide a total of 196 light duty public
9 EV chargers and infrastructure at school facilities and other educational institutions that will be
10 installed over a total of 30 sites in various configurations.

11 After speaking with several interested parties, it became clear that a one-size fits all
12 approach would not be appropriate for this Pilot. There are different sized venues, with different
13 sized parking lots, and different numbers of EV drivers. SDG&E has designed a versatile pilot,
14 budgeting for 30 sites with 184 L2 and 12 DCFC charging stations in various configurations.
15 SDG&E will work with site hosts to determine the best fit for their needs from the pool of sites
16 and the charging station options available within the School Pilot. Table A-4 in Appendix A,
17 below, outlines examples of potential charging station sites and costs proposed for this Pilot.

18 **5. Pilot Objectives, Market Segment, and Sites Targeted**

19 Schools and educational institutions are locations where drivers, including staff and
20 students, leave their cars in designated parking lots for long durations. Currently, there are
21 limited charging opportunities for EV drivers at schools in SDG&E’s territory. SDG&E intends
22 to reach out to local schools and educational institutions to publicize the program and offer
23 charging infrastructure and charging stations to 30 qualified and interested schools and
24 educational institutions. Site hosts will self-nominate to participate in the program. A qualified

1 location would be willing to provide the space for the charging stations and equipment, and have
2 existing and future EV drivers to use the equipment. In addition, once a school or educational
3 facility host customer expresses an “indication of interest” for the School Pilot, SDG&E will
4 evaluate and prioritize the interested site(s) for installation by using the following criteria,
5 including, but not limited to:

- 6 • Date of indicated interest (first-in-line priority);
- 7 • Disadvantaged Community status;
- 8 • Current and expected volume of EV drivers;
- 9 • Number of installations desired;
- 10 • Type of installation (DCFC, L2);
- 11 • Distance between transformer and new electric service point;
- 12 • Estimated cost for infrastructure and EV charging station installation; and
- 13 • Existing/available Americans with Disabilities Act (“ADA”) accessible
14 parking.

15 SDG&E proposes to install, own, operate, and maintain the charging stations. This is the
16 same ownership model in SDG&E’s Electrify Local Highways PRP, recently approved by the
17 Commission in D.18-01-024. SDG&E proposes this ownership model to facilitate public school
18 participation. Like the Electrify Local Highways PRP, many schools are public facilities. Public
19 schools would require funding to purchase and maintain the equipment. Yet many schools state
20 that they lack the funding and personnel to own, operate, and maintain the equipment, and see
21 the ownership of charging infrastructure as outside their mission. So, as stated by the San Diego
22 Unified School District and the University of San Diego in their letters supporting the School
23 Pilot,²² many school districts and educational institutions would prefer a turn-key ownership,
24 operation, and maintenance solution.

²² See Appendix A of the Application.

1 Power Your Drive further underscores how SDG&E ownership can expand school
2 participation. Power Your Drive requires a participation payment. SDG&E has not targeted
3 PYD at public schools that would be responsible for the participation payment. Of the 12 school
4 facilities participating in PYD, 10 are public school and administration buildings in DACs,
5 where the participation payment is waived. The other two are private schools that made the
6 required payment.

7 Because utility ownership provides EV charging infrastructure for capital constrained
8 schools and educational facilities that would need public funding to acquire charging stations and
9 infrastructure, the School Pilot's ownership plan can help overcome this barrier to TE expansion
10 at public schools. As the owner of the charging equipment, SDG&E will provide the same
11 standard of service that it does to all other assets installed in its territory to ensure that the
12 charging stations are safe, reliable, and available for drivers to use. Existing EV drivers value
13 having reliable and available charging stations. The PlugShare website²³ /app highlights
14 comments from drivers about public charging stations that are having ongoing availability /
15 workability issues in the San Diego region. SDG&E-owned charging stations would mitigate the
16 reliability concerns of customers, as SDG&E continues to be one of the most reliable energy
17 companies in the United States. In November 2017, SDG&E was recognized for delivering
18 industry-leading reliability to customers for the past 12 years.²⁴ And SDG&E has strong
19 knowledge and experience with EV charging infrastructure, by installing and managing over 250
20 workplace charging sites at 20 different SDG&E locations, along with the PYD locations.

²³ See www.plugshare.com.

²⁴ San Diego Gas & Electric Company, *SDG&E Recognized for Providing Customers with Dependable Power* (November 30, 2017), available at <http://www.sdgenews.com/reliable/sdge-recognized-providing-customers-dependable-power>.

1 SDG&E is proposing to use the EV Time-of-Use (“TOU”) rate for this Pilot. It will
2 study charging patterns and share the usage data with the CPUC and the PAC. The EV-TOU
3 rate has three time-of-use periods per day. It offers drivers a predictable per-kWh price without
4 demand charges that match the current TOU pricing experience at their home.

5 Upon approval of this pilot, SDG&E will work with EVSPs via a RFP process to
6 purchase the EVSE and associated network services, and use International Brotherhood of
7 Electric Workers (“IBEW”)-affiliated contractors and skilled electricians for the installation and
8 maintenance of the charging equipment.²⁵

9 **6. Pilot Architecture**

10 SDG&E will examine the need to install new distribution transformers at the sites. Each
11 location will likely not have enough electrical infrastructure capacity to serve the proposed
12 number of charging stations, and will need a new transformer. New electric service will be
13 installed at each site that is separately metered.

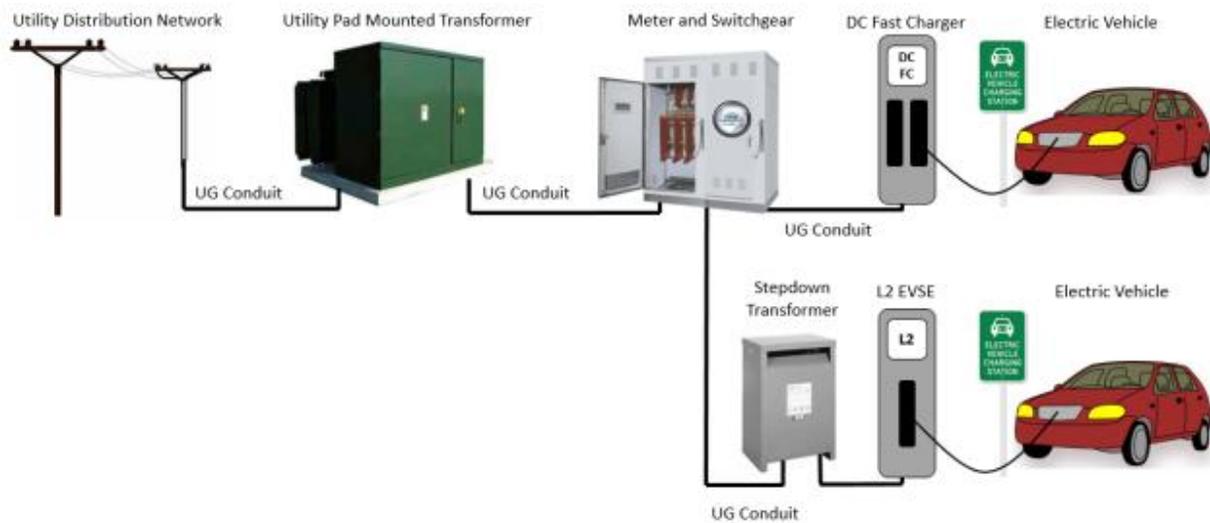
14 AB 1082 provides schools the ability to determine who may use the charging stations.²⁶
15 Per AB 1082, authorized EV drivers can choose either an L2 or DCFC charger. The charging
16 stations will accommodate two different types of drivers: (1) those that leave their cars for a
17 longer period of time (more appropriate for an L2); and (2) those who wish to quickly charge

²⁵ All work that is not performed by SDG&E employees shall be performed by contractor’s signatory to the IBEW who hold a valid C-10 contractor’s license, as defined in the governing labor agreement between SDG&E and the IBEW. In addition, electricians performing the EVSE installations will have Electric Vehicle Infrastructure Training Program (“EVITP”) certification.

²⁶ See P.U.C. § 740.13(c) (“a school district, county office of education, private school, or other educational institution choosing to participate in the program shall have the authority to establish guidelines for use of the charging stations installed pursuant to the approved program, which may include use by faculty, students, and parents, before, during, and after school hours at those times that the school facilities or other educational institutions are operated for purposes of providing education or school-related activities, including, but not limited to, parent-teacher conferences, clubs, theater, and athletic events, and by any other persons present for those activities and events.”)

1 their vehicles (more appropriate for an DCFC). Charging scenarios will be dependent on
2 specific site design, as some sites may not have both types of charging stations. The site design
3 will be determined based on-site needs.

4 The customer experience at these charging stations will be a key focus. Payment can be
5 made at the charging station, so users don't have to be SDG&E customers or have an SDG&E
6 account. Each charger will allow EV drivers a variety of payment options, including credit/debit
7 card, fob, and mobile device. Depending on school authorization, this will allow the stations to
8 be available to school and educational institution visitors, as well as those who regularly use the
9 charging stations. The prices will be displayed on or near the EVSE, or on the vendor-supplied
10 phone app.



11
12 **Figure 1-1: EV Charging Station Architecture at School or Educational Institution Sites**

13 Figure 1-1 above depicts the EV charging station architecture at each school or
14 educational institution site. A new separately metered electric service will be installed to feed
15 the charging stations. SDG&E envisions that the EVSP will be the customer of record for this
16 new service. The EVSP will bill drivers for their charging session energy on the EV-TOU rate.

1 **7. Implementation Timeframe**

2 SDG&E anticipates breaking ground on the Pilot within 12 months from the time it
3 receives the Commission approved implementation advice letter. The 12-month period will be
4 used to issue and process the RFPs, test and procure equipment, sign up site hosts and prepare
5 for installation. Data collection will continue for two years from the time the charging stations
6 are installed and operational.

7 **8. Leveraged Funding**

8 SDG&E will work with each school and educational institution to develop a collaborative
9 installation and operational plan that minimizes costs. SDG&E has included all currently known
10 construction costs in the Pilot budget and envisions that each school and educational institution
11 will agree to provide land, sign an agreement, and provide assistance to help streamline the
12 design, installation, and permitting efforts needed to build a successful and cost-effective site.
13 SDG&E will continue to seek out appropriate non-utility sources of funding to alleviate some
14 ratepayer funds, if funding sources become available prior to implementation. For example,
15 SDG&E will continue to collaborate and work diligently with its Pilot partners in an effort to
16 secure and utilize additional federal, state and private funding.

17 **9. Stranded Asset Mitigation**

18 As with all of SDG&E’s TE programs, SDG&E proactively mitigates stranded asset risk
19 through program design. SDG&E will ensure that the charging facilities are reliably operated
20 and maintained, minimizing the risk that charging infrastructure will be out of service for
21

1 extended periods.²⁷ SDG&E’s proposed ownership structure ensures that facilities will be
2 reliable and available to drivers, mitigating the risk of insufficient maintenance, supplier
3 bankruptcy, insufficient funding, or local market contraction. Finally, SDG&E’s interaction with
4 the PAC and the Commission has, and will continue to, provide data on electric transportation
5 adoption and charging infrastructure utilization.

6 **B. Pilot Benefits**

7 **1. Grid Impacts**

8 Per the ACR, and pursuant to P.U.C. § 740.13(g) and P.U.C. § 740.14, SDG&E is
9 required to state which time-variant electric rate should apply to the pilot sites. SDG&E plans to
10 use the EV-TOU rate to incentivize drivers to charge at times of the day when the grid is least
11 impacted. The proposed EV-TOU rate in this Pilot will help support Governor Brown’s ZEV
12 Action Plan by providing drivers an incentive to charge during off-peak hours — ensuring that
13 the grid can support the influx of new load from EVs, and mitigating the need for new generation
14 or transmission and distribution (“T&D”) assets.²⁸

²⁷ Reputation and branding can be significant in changing the public perception of EVs. The local utilities have the reputation to deliver safe and reliable service. Recent failures to advance the TE market illustrate that a different approach is needed. Car2Go, a fleet of clean EV cars in San Diego, failed in just five years, claiming setbacks in electric charger stations as one of the reasons. *See* The San Diego Union-Tribune, *Car2go’s San Diego Departure a Climate Change Setback* (November 18, 2016), available at <http://www.sandiegouniontribune.com/news/politics/sd-me-car2go-leaves-20161118-story.html>. ECotality, the original operator of the Blink charging network, went bankrupt and the Blink network was taken over by Car Charging Group. The Blink residential and public chargers were initially provided as part of a Department of Energy (“DOE”) EV grant. ECotality’s public financial reports have revealed its inability to build a business beyond the DOE funded chargers, which led to DOE freezing further grant payments. One survey conducted by Recargo indicated that only 48 percent considered the Blink brand “reliable” and only 18 percent felt “loyal” to the brand. *See* Green Tech Media, *ECotality Bankruptcy: Blink EV Charging Network Changes Hands but Can’t Shake Its Bad Reputation* (October 11, 2013), available at <https://www.greentechmedia.com/articles/read/ECotality-Bankruptcy-Blink-EV-Charging-Network-Changes-Hands-But-Not-Bad-R>.

²⁸ Office of Governor Edmund G. Brown Jr, *2016 ZEV Action Plan* (October 2016), available at https://www.gov.ca.gov/docs/2016_ZEV_Action_Plan.pdf.

1 **2. Ratepayer Interest**

2 With a variety of EVs now available on the market, the decreasing costs of EVs, the
3 increasing battery capacity, and the increasing number of EVs entering the market as drivers
4 return vehicles from leases, electric transportation choices are growing. With these increased EV
5 choices, the infrastructure to support such EVs must also be built to accommodate all types of
6 users. This Pilot will provide new charging infrastructure in, or adjacent to, DAC areas that will
7 be available to staff, students, residents, and visitors alike and help extend their electric miles
8 traveled. SDG&E ratepayers will benefit through cleaner air, reduced GHG emissions, and
9 increased grid optimization. The American Lung Association estimates that in 2015, the harmful
10 impacts caused by passenger vehicles in the 10 ZEV States²⁹ totaled billions of dollars in health
11 and climate costs combined. In addition, according to the American Lung Association, San
12 Diego County has received a grade of “F” in ozone air quality in the organization’s last two
13 annual “State of the Air” reports.³⁰ Studies continue to link air pollution to adverse effects to
14 humans, including cancer and respiratory damage.³¹ Electric vehicles are a powerful tool to
15 combat these issues because they have zero tailpipe emissions. Therefore, while there continues
16 to be a cost to deploy charging infrastructure, there is also a cost if stakeholders do not act in the
17 short and long-term interest of ratepayers.

²⁹ A report by the American Lung Association refers to the following states as the “10 ZEV States” - California, Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island and Vermont. The American Lung Association focused on the 10 U.S. states that have adopted a ZEV sales program. See American Lung Association in California, *Clean Air Future, Health and Climate Benefits of Zero Emission Vehicles* (October 2016), available at <http://www.lung.org/local-content/california/documents/2016zeroemissions.pdf>.

³⁰ See American Lung Association in California, *San Diego County Rankings*, available at <http://www.lung.org/our-initiatives/healthy-air/sota/city-rankings/states/california/san-diego.html>.

³¹ Union of Concerned Scientists, Inc., *Delivering Opportunity, How Electric Buses and Trucks Can Create Jobs and Improve Public Health in California* (Updated May 2017), at 7, available at <https://www.ucsusa.org/sites/default/files/attach/2016/10/UCS-Electric-Buses-Report.pdf>.

1 SDG&E will focus on deploying infrastructure to support EVs in disadvantaged
2 communities, setting a DAC deployment goal of 25% of installations within the School Pilot.
3 DACs often face disproportionate exposure to the health and economic impacts of air pollution
4 and climate change,³² making increased access to electricity as a transportation fuel in DACs a
5 policy priority.³³ The Pilot will provide both environmental and economic benefits in DACs,
6 including creating high-quality jobs.³⁴

7 **3. Emissions Benefits and Accounting Methodology**

8 GHG reductions from the School Pilot will provide air quality benefits for all ratepayers.
9 First year reductions of 554 MT of CO₂ are estimated, resulting in lifetime net CO₂ reductions of
10 5,864 MT for the vehicles included in the School Pilot.³⁵

11 **C. Regulation Supported by Pilot**

12 **1. California Agency Regulation Supported by Pilot**

13 The School Pilot will support a variety of California regulation in addition to SB 350,
14 such as:

- 15 • AB 1082: Support the installation of EV charging stations at school
16 facilities and other educational institutions;³⁶
- 17 • AB 32: Reduction of GHG emissions to approximately 15% below
18 emissions expected under a “business as usual” scenario;³⁷

³² Center for Sustainable Energy (“CSE”), *2016 Quality of Life Dashboard* at 9, available at <https://energycenter.org/sites/default/files/2016-equinox-regional-dashboard-report.pdf>.

³³ P.U.C. §§ 740.12(a)(1)(E); 740.12(a)(1)(c).

³⁴ P.U.C. § 740.8(b)(5).

³⁵ See the Prepared Direct Testimony of Tony Rafati (Chapter 5) for further details.

³⁶ California Legislative Information, *Assembly Bill No. 1082* (October 10, 2017), available at https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB1082.

³⁷ California Air Resources Board, *Assembly Bill 32 Overview*, available at <https://www.arb.ca.gov/cc/ab32/ab32.htm>.

- 1 • 2016 ZEV Action Plan: 1.5 million ZEVs in California by 2025;³⁸
- 2 • Executive Order B-30-15: Decrease GHG emissions to 40% below 1990
- 3 levels by 2030 and 80% below 1990 levels by 2050;³⁹ and
- 4 • Executive Order B-48-18: Put at least 5 million zero-emission vehicles on
- 5 California roads by 2030, by increasing the supply of ZEVs and charging
- 6 and refueling stations in California.⁴⁰

7 **2. CPUC Regulation Supported by Pilot**

8 The School Pilot also supports the following CPUC Regulation:

- 9 • Public Utilities Code §740.3(a) and (c): SDG&E, as an electrical
- 10 corporation, will evaluate and implement policies to promote the
- 11 development of equipment and infrastructure needed to facilitate the use
- 12 of electric power. This project is in the ratepayers' interest and will not
- 13 unfairly compete with nonutility enterprises.
- 14 • Public Utilities Code §740.8: the Pilot will increase the use of alternative
- 15 fuels, reduce the health and environmental impacts from air pollution, and
- 16 create high quality job and other economic benefits, including in DACs.
- 17 • Public Utilities Code §740.12: the Pilot stimulates innovation and
- 18 competition by EV manufacturers, attracting more private capital

³⁸ Office of Governor Edmund G. Brown Jr., *2016 ZEV Action Plan* (October 2016) at 4, available at https://www.gov.ca.gov/docs/2016_ZEV_Action_Plan.pdf.

³⁹ Office of Governor Edmund G. Brown Jr., *Governor Brown Establishes Most Ambitious Greenhouse Gas Reduction Target in North America* (April 29, 2015), available at <https://www.gov.ca.gov/news.php?id=18938>.

⁴⁰ Office of Governor Edmund G. Brown Jr., *Governor Brown Takes Action to Increase Zero-Emission Vehicles, Fund New Climate Investments* (January 26, 2018), available at <https://www.gov.ca.gov/2018/01/26/governor-brown-takes-action-to-increase-zero-emission-vehicles-fund-new-climate-investments/>.

1 investments in TE, and increasing access to electricity as a transportation
2 fuel in DACs.

3 **3. Monitoring and Evaluation Plan**

4 SDG&E will study and learn whether the proposed EV charging infrastructure at school
5 and educational institutions will increase the amount of EVs in those neighborhoods and station
6 usage in general. The Pilot will use time-variant charging to manage the load, while cars are
7 parked for long periods, as well as for faster DCFC charging sessions. SDG&E will monitor
8 usage and charging data to share with the Commission and PAC within the two-year Pilot
9 duration to study charging patterns at the school and educational institution locations.

10 **4. Future Opportunity / Scalability**

11 Installing EV charging stations at schools and educational institutions have strong
12 scalability opportunities. While there are more than 1,000 schools and educational institutions
13 within SDG&E's territory, due to its size, this pilot will only target a small number of them. If
14 this pilot is successful, it can be expanded to additional schools and educational institutions in
15 San Diego and throughout California.

16 **5. Education and Outreach**

17 SDG&E has strong knowledge and experience in EV charging. SDG&E has installed
18 and managed over 250 EVSEs at over 20 different SDG&E locations for its employees within its
19 territory. Additionally, SDG&E has gained EV charging knowledge and experience through the
20 implementation process of PYD, which will continue to inform future education and outreach
21 efforts associated with SDG&E's AB 1082 pilot. As an example of this, SDG&E recognized
22 that obtaining agreements with site hosts for EVSE placement were difficult to obtain and
23 contributed to a longer site-host approval time. Therefore, SDG&E revised its agreement
24 strategy, to make it easier to implement and easier for site host approval.

1 A strong customer communication plan, in partnership with the schools and educational
 2 institutions, will be developed to inform the region about the availability and accessibility of the
 3 charging stations. In coordination with each respective school and educational institution, the
 4 plan could include a social media campaign, a direct e-mail campaign targeted to SDG&E
 5 customers near each location, and a direct e-mail campaign by each school and educational
 6 institution to current staff, students and potential users. SDG&E will work with each school and
 7 educational institution to coordinate a grand opening for the charging stations, in an effort to
 8 generate awareness through earned media.

9 **6. Estimated Pilot Costs**

10 The estimated cost of SDG&E’s School Pilot is \$9.9M. See Appendix A, Table A-1,
 11 below, for a cost estimate summary.

12 **7. Conclusion**

13 The School Pilot should be designated for expedited review because it is non-
 14 controversial. It is a short-term pilot and will not oversaturate the market. And it is within the
 15 budget parameters as outlined in the ACR to qualify for expedited review.

16 **III. PARKS PILOT**

17 **A. Description and Features**

18 **1. Pilot Summary**

Pilot Components	SDG&E’s AB 1083 Pilot
Commission Review Mechanism	Expedited Review.
Objectives	Provide EV charging infrastructure at 12 state parks and beach sites, and optionally, up to 10 city and county park sites.
Market Segment and Vehicles Targeted	People movement; L2 and DCFC EVSE; light-duty passenger vehicles.

Vehicle Goals	Install time-variant public charging stations and infrastructure at 12 state parks and beach locations, and up to 10 city and county park sites, with a total of 64 L2 charging stations and 10 DCFC stations at the state sites, and 56 L2 charging stations and 10 DCFC stations at the city and county sites.
Implementation Timeframe	Installation will commence after CPUC approval of the implementation advice letter, and charging data will be collected and analyzed for the two-year Pilot duration.
Pilot Partners	California Department of Parks and Recreation (“Parks”). Potential California state parks and beach sites include: <ul style="list-style-type: none"> • Anza-Borrego State Park • Carlsbad / Tamarack State Beach • Cardiff by the Sea / Sea Side/ South Cardiff State Beach • Cuyamaca Ranch State Park • Doheny State Beach • Old Town San Diego State Park • San Clemente State Beach • San Elijo State Beach • San Onofre State Beach • Silver Strand State Beach • South Carlsbad / Ponto State Beach • Torrey Pines, North & South Beach State Beach City and County Parks • 100% of city and county park sites will be in DACs. • Sites have yet to be determined.
Leveraged Funding	Site hosts/locations to sign SDG&E license agreements, provide parking spaces, and expertise to help streamline the design, installation and permitting efforts.
Stranded Asset Mitigation	SDG&E ownership and maintenance assures reliable charging equipment and both L2 EVSE will be J1772 standardized and the DCFC units will have both Chademo and SAE CCS connectors.
Grid Impacts	EV-TOU rates to incentivize drivers to charge at times of the day when the grid is impacted the least.

1 As part of its broader transportation electrification efforts, SDG&E is currently in the
2 implementation phase of its six SB 350 PRPs. Those PRPs includes the Electrify Local
3 Highways PRP, which provides a mix of L2 and DCFC public charging infrastructure at four
4 CalTrans Park-and-Ride locations in SDG&E’s service territory.

5 The Parks Pilot proposal complements the Electrify Local Highways RPR. Like the
6 Electrify Local Highways PRP, the Parks Pilot will provide an additional mix of much needed
7 L2 and DCFC charging infrastructure at public locations within SDG&E’s service territory. In
8 addition, the Parks Pilot will provide much needed design flexibility, allowing for the smaller
9 installations of charging stations for parks and beaches that are space-constrained. The Parks
10 Pilot addresses an investment gap in an important sector of SDG&E’s service territory – tourism.
11 The tourism industry continues to be a uniquely weighted market segment within SDG&E’s
12 service territory;⁴⁴ therefore, the Parks Pilot specifically serves a need for this market.
13 Additionally, the Parks Pilot will advance SDG&E’s goal to enable TE and reduce barriers to
14 adopting EVs.

15 3. Stakeholder Coordination

16 AB 1083 requires utilities to consult with Parks, CPUC, California Energy Commission
17 (“CEC”), and California Air Resources Board (“ARB”) before filing an application.⁴⁵ Since
18 Parks manages the state parks and beaches that are the subject of this bill, the ACR instructs that
19 any pilot should help Parks meet its goals for fleet and employee charging, pursuant to Executive
20 Order B-16-2012, and Parks’ fleet acquisition plan.⁴⁶ It is therefore particularly important to

⁴⁴ San Diego Tourism Authority, *2018 San Diego Tourism Fast Facts*, available at <https://www.sandiego.org/-/media/files/pdfs/fastfacts2018-digital.pdf?la=en>.

⁴⁵ ACR at 2.

⁴⁶ *Id.* at 3-4.

1 develop a pilot in coordination with this Department. SDG&E met with the following statewide
2 and local organizations to garner feedback and input on the AB 1083 pilot, as well as secure
3 letters of support.

4 **List of Statewide Consultative Meetings**

- 5 • California Air Resources Board
- 6 • California Energy Commission
- 7 • California Public Utilities Commission
- 8 • California State Parks Foundation
- 9 • Parks

10 **List of Local Consultative Meetings and Letters of Support⁴⁷**

- 11 • American Lung Association
- 12 • Anza-Borrego State Park
- 13 • Carlsbad / Tamarack State Beach
- 14 • Cardiff by the Sea / Sea Side/ South Cardiff State Beach
- 15 • City of Encinitas – Mayor Catherine S. Blakespear
- 16 • City of San Diego – Councilmember David Alvarez
- 17 • City of San Diego – Councilmember Christopher Ward
- 18 • Cleantech San Diego
- 19 • County of San Diego – Supervisor Ron Roberts
- 20 • Cuyamaca Ranch State Park
- 21 • Doheny State Beach
- 22 • Old Town San Diego State Park
- 23 • Orange County Board of Supervisors – Supervisor Lisa A. Bartlett
- 24 • San Clemente State Beach
- 25 • San Elijo State Beach
- 26 • San Elijo Lagoon Conservancy
- 27 • San Onofre State Beach

⁴⁷ See Letters of Support attached to the Application as Appendix A.

- 1 • SDG&E Program Advisory Council
- 2 • Silver Strand State Beach
- 3 • South Carlsbad / Ponto State Beach
- 4 • Tijuana Estuary State Park
- 5 • Torrey Pines, North & South Beach State Beach

6 External stakeholders support SDG&E’s Parks Pilot to facilitate transportation
7 electrification for state parks and beaches and city and county parks.

8 **4. Pilot Description**

9 SDG&E proposes to provide 74 light duty public EV chargers and infrastructure at 12
10 state parks and beaches, and, 66 light duty public EV chargers at 10 city and county park sites.

11 After speaking with interested parties, it became clear that a one-size fits all approach
12 would not be appropriate for this Pilot. There are different sized venues, with different sized
13 parking lots, and different numbers of EV drivers. SDG&E designed a versatile pilot and
14 budgeted an overall number of sites and Level 2/DC Fast charge stations. The company will
15 work with site hosts to determine their needs from the selection of site designs available. Tables
16 A-5 and A-6 in Appendix A below outlines example charging site scenarios and costs proposed
17 for this project.

18 **5. Pilot Objectives, Market Segment, and Sites Targeted**

19 SDG&E will partner with Parks to implement the Parks Pilot at local state parks and
20 beaches, by providing EV charging infrastructure to 12 state parks and beach locations. SDG&E
21 would install, own, maintain, and operate the charging stations. State parks and beaches would
22 provide the parking spaces, sign licensing agreements, and provide expertise to streamline the
23 design, permitting and installation efforts – thus helping to reduce the overall Pilot cost.

1 SDG&E will study charging patterns and share the usage data for modeling charging
2 infrastructure at the locations. SDG&E will also test the proposed EV-TOU rate at public
3 charging sites, and see how driver behavioral charging patterns vary at the parks and beach sites.

4 State parks and beaches are locations where drivers, including visitors and staff, leave
5 their cars in designated parking lots for long durations. There is limited access for charging
6 opportunity for EV drivers at the 15 state parks and beaches within SDG&E's service territory.
7 Upon approval of this Pilot, SDG&E will work with EVSPs via an RFP process to purchase the
8 charging infrastructure and associated network services, and then use IBEW-affiliated
9 contractors and skilled electricians for the installation and maintenance of the charging
10 equipment.⁴⁸

11 As stated previously, SDG&E proposes to install, own, operate and maintain the charging
12 stations in the Parks Pilot, similar to the Electrify Your Highways PRP. Like public highways,
13 state parks and beaches are public property that would require public funding to purchase the
14 charging equipment. Parks has indicated in its letter of support that utility ownership, operation
15 and maintenance is the preferred structure for an AB 1083 Pilot.⁴⁹ Moreover, as AB 1083 states,
16 "the Department of Parks and Recreation shall not be required to incur any costs or liability
17 related to the installation, use, or maintenance of the charging stations for the pilot program's
18 duration."⁵⁰ SDG&E's proposed ownership is consistent with AB 1083's guidance, provides EV

⁴⁸ All work that is not performed by SDG&E employees shall be performed by contractor's signatory to the IBEW who hold a valid C-10 contractor's license, as defined in the governing labor agreement between SDG&E and the IBEW. In addition, electricians performing the EVSE installations will have EVITP certification.

⁴⁹ See Appendix A to the Application.

⁵⁰ California Legislative Information, *Assembly Bill No. 1083* (October 10, 2017), available at https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB1083.

1 infrastructure for capital constrained public parks and beaches, and offers the public turn-key
2 operation and maintenance services for the charging equipment at each park and beach site.

3 As the owner, SDG&E will provide the same standard of service that it does to all other
4 assets installed in its territory, ensuring that the charging stations are safe, reliable and available
5 for drivers. As noted with the School Pilot, SDG&E has long been recognized for its reliability
6 and has extensive experience with operating and maintaining EV infrastructure.

7 As part of its Parks Pilot, SDG&E is also proposing to provide charging infrastructures to
8 10 city and county park sites. City and county parks within SDG&E's service territory offer
9 more opportunity to meet the needs of DACs, compared to state parks and beaches. Only one
10 state park within SDG&E's service territory in a DAC. So including city and county parks in the
11 Parks Pilot enables SDG&E to prioritize DAC sites. SDG&E is committed to installing 100
12 percent of the charging stations in city and county parks within DACs. SDG&E believes that its
13 supplemental city and county parks pilot is authorized by SB 350. It will increase access to
14 electricity as a transportation fuel to help meet California's goals, particularly in DACs. It is also
15 consistent with the goals of AB 1083 and the ACR guidance. The latter specifies that the SB 350
16 proceeding remains open to consider additional utility proposals that would support widespread
17 transportation electrification. The ACR further states that each respective AB 1083 pilot
18 proposal should be:

- 19 • In the interest of ratepayers; and
- 20 • Prioritize sites located in disadvantaged communities.

21 Enabling SDG&E to provide public EV charging at city and county parks provides the
22 ratepayers the benefit of better air quality in DACs. Air pollution impacts all ratepayers. Yet
23 low-income communities, such as DACs, suffer disproportionately from the consequences of

1 polluted air.⁵¹ Evidence shows that people who have low incomes may face higher risk of health
2 impacts from air pollution.⁵² The Parks Pilot — particularly the city and county parks proposal
3 — will provide environmental and economic benefits, including GHG emission reduction and
4 local skilled labor employment.⁵³ The city and county parks proposal is supported by multiple
5 groups, as evidenced in the letters of support included in Appendix A of the Application. With
6 California’s emphasis on improving DACs, SDG&E believes the addition and prioritization of
7 city and county parks in DACs is appropriate.

8 Including The total estimated cost for both the state parks and beaches and city and
9 county parks pilots is \$8.9M — below the ACR’s budget guidance.

10 **6. Pilot Architecture**

11 SDG&E will examine the need to install new distribution transformers at the chosen sites.
12 Each location will likely not have enough electrical infrastructure capacity to serve the proposed
13 number of charging stations and will need a new transformer. A new electric service will be
14 installed at each site, as needed, that is separately metered. It will feed the installed charging
15 stations.

16 EV drivers will be able to pull into the state parks and beach parking lots and choose a
17 charging station. Those stations will accommodate two different types of drivers: (1) those that
18 leave their cars for a longer period of time to charge; and (2) those that wish to quickly charge
19 their vehicles. Charging scenarios will be dependent on specific site design, as some sites may

⁵¹ Scientific American, *People in Poor Neighborhoods Breathe More Hazardous Particles* (November 1, 2012), available at <https://www.scientificamerican.com/article/people-poor-neighborhoods-breathe-more-hazardous-particles/>.

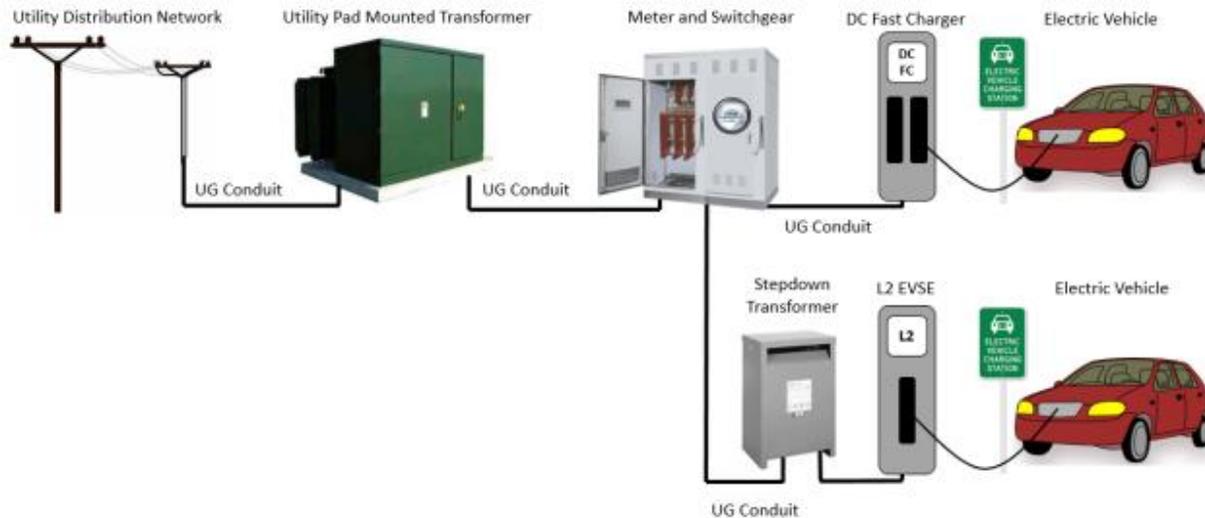
⁵² See American Lung Association in California, *People at Risk*, available at <http://www.lung.org/our-initiatives/healthy-air/sota/key-findings/people-at-risk.html>.

⁵³ See P.U.C §740.

1 not have both L2 and DCFC chargers. The site design will be based on the location and the
2 needs of the site.

3 In an effort to minimize negative grid impacts, the charging stations will use a EV TOU
4 rate, incentivizing drivers to charge when the price of electricity is lower and when grid supply is
5 unconstrained. The EV-TOU rate has three time-of-use periods per day. It offers drivers a
6 predictable per-kWh price without demand charges, mirroring the current TOU residential

7 The customer experience at these charging stations will be a key focus. Payment will be
8 made at the charging station, so users needn't be an SDG&E customer or have an SDG&E
9 account. Each charger will have full public access, allowing EV drivers a variety of payment
10 options, including credit/debit card, fob, and mobile device. By providing customers the option
11 to pay by credit card, it ensures that stations are available to infrequent visitors, along with more
12 regular users. The prices will be displayed on or near the EVSE, or on the vendor-supplied
13 phone app.



14
15 **Figure 1-2: EV Charging Station Architecture at Parks and Beaches Sites**

16 Figure 1-2 above depicts the EV charging station architecture at each park or beach site.

17 A new separately metered electric service will be installed to feed the charging stations. SDG&E

1 envisions that the EVSP will be the customer of record for this new service, and will bill drivers
2 for their charging session energy on the EV-TOU rate.

3 **7. Implementation Timeframe**

4 SDG&E plans to break ground on the pilot within 12-months from the time it receives
5 Commission approval of the implementation advice letter. The 12-month period will be used to
6 issue the RFPs, test and procure equipment, sign up site hosts, and prepare for installation. Data
7 collection will continue for two years from the time the charging stations are installed and
8 operational.

9 **8. Leveraged Funding**

10 SDG&E will work with Parks and individual parks and beaches to develop a
11 collaborative installation and operational plan that minimizes costs. SDG&E has included all the
12 construction costs in the Pilot budget. It envisions that each park and beach will agree to provide
13 land, sign an agreement, and assist in streamlining the design, installation, and permitting efforts
14 needed to build a successful and cost-effective site. SDG&E will seek out appropriate non-
15 utility sources of funding to alleviate some ratepayer funds if funding sources become available
16 prior to implementation. SDG&E will continue to collaborate and work diligently with its pilot
17 partners in an effort to secure and utilize additional federal, state, and private funding as
18 available.

19 **9. Stranded Asset Mitigation**

20 SDG&E proactively mitigates stranded asset risk through program design. SDG&E will
21 ensure that the charging facilities are reliably operated and maintained, minimizing the risk that
22 charging infrastructure will be out of service for extended periods.⁵⁴ SDG&E's proposed

⁵⁴ Reputation and branding can be significant in changing the public perception of EVs. The local utilities have the reputation to deliver safe and reliable service. Recent failures to advance the TE

1 ownership structure ensures that facilities will be reliable and available to drivers, mitigating the
2 risk of insufficient maintenance, supplier bankruptcy, local market contraction, or insufficient
3 funding. In addition, SDG&E’s long history of owning, operating, and maintaining
4 infrastructure in weather challenged areas, such as public coastal parks and beaches, provides
5 enhanced assurance of asset performance. Charging station usage and energy consumption data
6 will be collected and reported to the PAC and the Commission.

7 **B. Pilot Benefits**

8 **1. Grid Impacts**

9 SDG&E plans to use the EV-TOU rate to incentivize drivers to charge at times with the
10 least grid impacts. The proposed EV-TOU rate in this Pilot will support Governor Brown’s ZEV
11 Action Plan, providing drivers an incentive to charge during off-peak hours — ensuring that the
12 grid can support the influx of new load from EVs and mitigate the need for new generation or
13 transmission and distribution (T&D) assets.⁵⁵

market illustrate that a different approach is needed. Car2Go, a fleet of clean EV cars in San Diego, failed in just five years, claiming setbacks in electric charger stations as one of the reasons. *See* The San Diego Union-Tribune, *Car2go’s San Diego Departure a Climate Change Setback* (November 18, 2016), available at <http://www.sandiegouniontribune.com/news/politics/sd-me-car2go-leaves-20161118-story.html>. ECoTality, the original operator of the Blink charging network, went bankrupt and the Blink network was taken over by Car Charging Group. The Blink residential and public chargers were initially provided as part of a DOE EV grant. ECoTality’s public financial reports have revealed its inability to build a business beyond the DOE funded chargers which led to DOE freezing further grant payments. One survey conducted by Recargo indicated that only 48 percent considered the Blink brand “reliable” and only 18 percent felt “loyal” to the brand. *See* Green Tech Media, *ECoTality Bankruptcy: Blink EV Charging Network Changes Hands but Can’t Shake Its Bad Reputation* (October 11, 2013), available at <https://www.greentechmedia.com/articles/read/ECoTality-Bankruptcy-Blink-EV-Charging-Network-Changes-Hands-But-Not-Bad-R>.

⁵⁵ Office of Governor Edmund G. Brown Jr, 2016 ZEV Action Plan (October 2016), available at https://www.gov.ca.gov/docs/2016_ZEV_Action_Plan.pdf.

1 **2. Ratepayer Interest**

2 With a variety of EVs now available, the decreasing costs of EVs, the increasing battery
3 capacity, and more available used EVs as drivers return leased vehicles, electric transportation
4 choices are growing. This pilot will provide new charging infrastructure in or adjacent to DAC
5 areas that will be available to public, visitors, and employees to help extend their electric miles
6 traveled. SDG&E ratepayers will benefit through cleaner air, reduced GHG emissions, and
7 increased grid optimization. As noted in AB 1082 testimony, the American Lung Association
8 estimates that in 2015, the harmful impacts caused by passenger vehicles in the 10 ZEV States⁵⁶
9 totaled billions of dollars in health and climate costs combined.

10 In addition, according to the American Lung Association, San Diego County has received
11 a grade of “F” in ozone air quality in the organization’s last two annual “State of the Air”
12 reports.⁵⁷ Studies continue to link air pollution to adverse effects to humans, including cancer
13 and respiratory damage.⁵⁸ Because they have zero tailpipe emissions, electric vehicles are a
14 powerful tool to combat these issues. Therefore, while there continues to be a cost to deploy
15 charging infrastructure, there is also a cost if stakeholders do not act in the interest of ratepayers.
16 SDG&E will focus on deploying infrastructure to support EVs in disadvantaged communities, by
17 setting a combined DAC deployment goal of 50% of installations within the Parks Pilot between

⁵⁶ A report by the American Lung Association refers to the following states as the “10 ZEV States” - California, Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island and Vermont. The American Lung Association focused on the 10 U.S. states that have adopted a ZEV sales program. See American Lung Association in California, *Clean Air Future, Health and Climate Benefits of Zero Emission Vehicles* (October 2016), available at <http://www.lung.org/local-content/california/documents/2016zeroemissions.pdf>.

⁵⁷ See American Lung Association in California, *San Diego County Rankings*, available at <http://www.lung.org/our-initiatives/healthy-air/sota/city-rankings/states/california/san-diego.html>.

⁵⁸ Union of Concerned Scientists, Inc., *Delivering Opportunity, How Electric Buses and Trucks Can Create Jobs and Improve Public Health in California* (Updated May 2017), at 7, available at <https://www.ucsusa.org/sites/default/files/attach/2016/10/UCS-Electric-Buses-Report.pdf/>.

1 state parks and beaches and city and county parks. Because, as noted, only one state park in
2 SDG&E’s territory is in a DAC, the city and county parks proposal is critical to meeting this
3 DAC installation goal.

4 **3. Emissions Benefits and Accounting Methodology**

5 GHG reductions from the Parks Pilot provide air quality benefits for all ratepayers. First
6 year reductions of 377 MT of CO₂ are estimated for the state park and beach sites, resulting in
7 lifetime net CO₂ reductions of 3,990 MT for state parks and beaches. The optional city and
8 county park sites are estimated to provide 352 MT of CO₂ in the first year, resulting in lifetime
9 net CO₂ reductions of 3,734 MT.⁵⁹

10 **C. Regulation Supported by Pilot**

11 **1. California Agency Regulation Supported by Pilot**

12 SDG&E’s Parks Pilot will support a variety of California regulation in addition to SB
13 350, such as:

- 14 • AB 1083: Authorizes the installation of EV charging stations at state
15 parks and beaches;⁶⁰
- 16 • AB 32: Reduction of GHG emissions to approximately 15% below
17 emissions expected under a “business as usual” scenario;⁶¹
- 18 • 2016 ZEV Action Plan: 1.5 million ZEVs in California by 2025;⁶²
- 19 • Executive Order B-16-2012: State entities support and facilitate the rapid

⁵⁹ See the Prepared Direct Testimony of Tony Rafati (Chapter 5) for further details.

⁶⁰ California Legislative Information, *Assembly Bill No. 1083* (October 10, 2017), available at https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB1083.

⁶¹ California Air Resources Board, *Assembly Bill 32 Overview*, available at <https://www.arb.ca.gov/cc/ab32/ab32.htm>.

⁶² Office of Governor Edmund G. Brown Jr, *2016 ZEV Action Plan* (October 2016) at 4, available at https://www.gov.ca.gov/docs/2016_ZEV_Action_Plan.pdf.

1 commercialization of zero-emission vehicles;⁶³

- 2 • Executive Order B-18-12: State agencies identify and pursue
3 opportunities to provide electric vehicle charging stations, and
4 accommodate future charging infrastructure demand, at employee parking
5 facilities in new and existing buildings;⁶⁴
- 6 • Executive Order B-30-15: Decrease GHG emissions to 40% below 1990
7 levels by 2030, and 80% below 1990 levels by 2050;⁶⁵ and
- 8 • Executive Order B-48-18: Increase supply of ZEVs and charging and
9 refueling stations in California.⁶⁶

10 2. CPUC Regulation Supported by Pilot

11 The Parks Pilot also supports the following CPUC Regulation:

- 12 • Public Utilities Code §740.3(a) and (c): SDG&E, as an electrical
13 corporation, will evaluate and implement policies to promote the
14 development of equipment and infrastructure needed to facilitate the use
15 of electric power. This project is in the ratepayers' interest and will not
16 unfairly compete with nonutility enterprises.
- 17 • Public Utilities Code §740.8: the project will increase the use of
18 alternative fuels and reduce the health and environmental impacts from air

⁶³ Office of Governor Edmund G. Brown Jr., *Executive Order B-16-2012* (March 23, 2012), available at <https://www.gov.ca.gov/2012/03/23/news17472/>.

⁶⁴ Office of Governor Edmund G. Brown Jr., *Executive Order B-18-12* (April 25, 2012), available at <https://www.gov.ca.gov/2012/04/25/news17508/>.

⁶⁵ Office of Governor Edmund G. Brown Jr., *Governor Brown Establishes Most Ambitious Greenhouse Gas Reduction Target in North America* (April 29, 2015), available at <https://www.gov.ca.gov/news.php?id=18938>.

⁶⁶ Office of Governor Edmund G. Brown Jr., *Governor Brown Takes Action to Increase Zero-Emission Vehicles, Fund New Climate Investments* (January 26, 2018), available at <https://www.gov.ca.gov/2018/01/26/governor-brown-takes-action-to-increase-zero-emission-vehicles-fund-new-climate-investments/>.

1 pollution, and create high quality job and other economic benefits,
2 including in DACs.

- 3 • Public Utilities Code §740.12: the project stimulates innovation and
4 competition by EV manufacturers, attracting more private capital
5 investments in TE, increasing access to electricity as a transportation fuel
6 in DACs, and creating high quality jobs for Californians.

7 **3. Monitoring and Evaluation Plan**

8 SDG&E intends to study whether the proposed EV charging infrastructure at state parks
9 and beaches will increase the amount of EVs in the region and usage of the stations in general.
10 The pilot will use time-variant charging to manage the load when cars are parked for long
11 periods, as well as for the faster DCFC charging sessions. SDG&E will monitor usage data to
12 share within the two years to study charging patterns at the state parks and beaches locations, as
13 well as city and county park locations.

14 **4. Future Opportunity/Scalability**

15 Installing EV charging stations at state parks and beaches have strong scalability
16 opportunities — including city and county parks. If this Pilot is successful, it can be expanded to
17 additional parks and beaches in San Diego and throughout California. The Parks Pilot will assist
18 state, city, and county parks and beaches in implementing their effort to install EV charging
19 stations at locations, as ordered by Executive Order B-18-12. Success will be demonstrated
20 through data collection of charger usage and drivers' time of day charging habits.

21 **5. Education and Outreach**

22 SDG&E has strong knowledge and experience in EV charging. SDG&E has installed
23 and managed over two hundred and fifty (250) EVSE at over twenty (20) different SDG&E
24 facility locations for its employees within its territory. Additionally, SDG&E has gained EV

1 charging knowledge and experience through the implementation process of PYD.⁶⁷ As noted
2 above, as of July 20, 2018, the PYD pilot has installed and energized 825 charging stations at 76
3 locations. In addition, 134 sites encompassing 1,596 nozzles are in the design phase, with 10
4 sites with 162 nozzles under construction.

5 A strong customer communication plan, in partnership with Parks and the local parks,
6 will be developed to inform the region about the availability and accessibility of the charging
7 stations. In coordination with each respective state park and beach, the plan could include a
8 social media campaign, a direct e-mail campaign targeted to SDG&E customers near each
9 location, and a direct e-mail campaign by each state park and beach to current staff, park and
10 beach members and potential users. SDG&E will work with Parks and individual parks to
11 coordinate a grand opening for the charging stations in an effort to generate awareness through
12 non-paid media.

13 SDG&E will work with Parks and individual parks to determine the: (1) current and
14 expected volume of EV drivers; (2) number of installations desired; (3) nearby transformer
15 available capacity; (4) distance between transformer and new service point; (5) site conditions
16 related to construction feasibility; (6) charging station mounting surface, condition of facility;
17 and (7) existing or available ADA accessible parking.

18 **6. Estimated Pilot Costs**

19 The estimated cost of SDG&E's Parks Pilot is \$5.1M at the state sites, and, \$3.8M at the
20 city and county sites for a total direct cost of \$8.9M. See Appendix A, Tables A-2 and A-3
21 below for summary cost estimate information.

⁶⁷ Approved in D.16-01-045.

1 **7. Conclusion**

2 The Parks Pilot should be designated for expedited review because it is non-
3 controversial. The Pilot is a short-term pilot and will not oversaturate the market. And it is
4 within the budget parameters as outlined in the ACR to qualify for expedited review.

5 This concludes my prepared direct testimony.

6 **IV. STATEMENT OF QUALIFICATIONS**

7 My name is Randall L. Schimka. My business address is 8306 Century Park Court, San
8 Diego, California 92123. I am employed by SDG&E as a Project Manager in Clean
9 Transportation.

10 I have over 30 years of energy industry experience. My current duties involve project
11 management to support SDG&E’s electric transportation efforts, including electric vehicle
12 charging in residential, workplace, and public locations. I act as a utility liaison or interface with
13 electric vehicle service providers wanting to install charging equipment in our service territory. I
14 also contribute to our Clean Transportation education and outreach efforts for electric vehicle
15 customers, talking with customers and making presentation about transportation electrification. I
16 am the proud owner of two battery electric vehicles, and have taken several all-electric long-
17 distance road trips over the past several years.

18 My prior duties at SDG&E focused on transmission grid control systems, transmission
19 system cyber security, NERC and CIP reliability standards, distribution system reliability,
20 substation engineering, and project management.

21 My education is in the general area of electrical engineering and business. I graduated
22 from San Diego State University in 1985 (BS Electrical Engineering), 1990 (MS Electrical
23 Engineering), and 1992 (Executive MBA). I am a registered Electrical Engineer in the State of
24 California.

1

I have previously testified before the California Public Utilities Commission.

APPENDIX A
COSTS AND SITE SCENARIOS

Costs are primarily for charging equipment and installation, electrical infrastructure for charging stations, customer support, and staff necessary for IT, project management and equipment maintenance functions.

Table A-1
AB1082 Schools Charging Infrastructure Program
After Sales Tax, Unloaded, Unescalated, Direct Cost Estimate

	Capital	O&M
Engineering and Design	\$1,140,000	
Trench, Conduit, Wire & Installation	\$2,881,331	
Switchgear / Meters	\$ 576,675	
Program and Project Management	\$ 550,000	
Chargers / EVSE	\$ 968,000	
ADA / Parking	\$ 751,600	
Transformer	\$ 684,450	
IT Costs	\$ 280,000	
Network Communications		\$ 105,840
Customer Engagement		\$ 200,000
Measurement and Evaluation		\$ 150,000
Charger / EVSE Maintenance & Warranty		\$ 48,400
Tax and Contingency	\$1,543,926	\$ 11,954
Subtotal	<u>\$9,375,982</u>	<u>\$ 516,194</u>
Program Total (Capital and O&M)	<u>\$</u>	<u>9,892,175</u>

Table A-2
AB1083 State Parks & Beaches Charging Infrastructure Program
After Sales Tax, Unloaded, Unescalated, Direct Cost Estimate

	<u>Capital</u>	<u>O&M</u>
Engineering and Design	\$ 456,000	
Trench, Conduit, Wire & Installation	\$1,119,282	
Switchgear / Meters	\$ 230,670	
Program and Project Management	\$ 550,000	
Chargers / EVSE	\$ 628,000	
ADA / Parking	\$ 303,300	
Transformer	\$ 273,780	
IT Costs	\$ 280,000	
Network Communications		\$ 39,960
Customer Engagement		\$ 200,000
Measurement and Evaluation		\$ 150,000
Charger / EVSE Maintenance & Warranty		\$ 94,200
Tax and Contingency	\$ 694,037	\$ 10,397
Subtotal	<u>\$4,535,069</u>	<u>\$ 494,557</u>
 Program Total (Capital and O&M)	 <u>\$</u>	 <u>5,029,627</u>

Table A-3
AB1083 Local Parks Charging Infrastructure Program
After Sales Tax, Unloaded, Unescalated, Direct Cost Estimate

	Capital	O&M
Engineering and Design	\$ 380,000	
Trench, Conduit, Wire & Installation	\$ 965,482	
Switchgear / Meters	\$ 192,225	
Program and Project Management	\$ 350,000	
Chargers / EVSE	\$ 612,000	
ADA / Parking	\$ 252,750	
Transformer	\$ 228,150	
IT Costs (Included in State Parks)	\$ -	
Network Communications		\$ 35,640
Customer Engagement		\$ 100,000
Measurement and Evaluation		\$ 75,000
Charger / EVSE Maintenance & Warranty		\$ 30,600
Tax and Contingency	\$ 572,065	\$ 5,134
Subtotal	<u>\$3,552,672</u>	<u>\$ 246,374</u>
 Program Total (Capital and O&M)	 <u>\$</u>	 <u>3,799,045</u>

Table A-4: SDG&E AB 1082 School Pilot Site Scenarios

Sites	# of Level 2 Stations	# of DC FC	Total Stations
Site 1	0	2	2
Site 2	0	2	2
Site 3	4	2	6
Site 4	4	2	6
Site 5	4	0	4
Site 6	4	0	4
Site 7	4	0	4
Site 8	4	0	4
Site 9	4	0	4
Site 10	4	0	4
Site 11	4	0	4
Site 12	6	2	8
Site 13	6	0	6
Site 14	6	0	6
Site 15	6	0	6
Site 16	6	0	6
Site 17	6	0	6
Site 18	6	0	6
Site 19	8	2	10
Site 20	8	0	8
Site 21	8	0	8
Site 22	8	0	8
Site 23	8	0	8
Site 24	8	0	8
Site 25	8	0	8
Site 26	10	0	10
Site 27	10	0	10
Site 28	10	0	10
Site 29	10	0	10
Site 30	10	0	10
Totals	184	12	196

Table A-5: SDG&E AB 1083 State Parks and Beaches Pilot Site Scenarios

Sites	# of Level 2 Stations	# of DC FC	Total Stations
State Park / Beach Site #1	0	2	2
State Park / Beach Site #2	0	2	2
State Park / Beach Site #3	4	2	6
State Park / Beach Site #4	4	0	4
State Park / Beach Site #5	4	0	4
State Park / Beach Site #6	4	0	4
State Park / Beach Site #7	6	2	8
State Park / Beach Site #8	6	0	6
State Park / Beach Site #9	6	0	6
State Park / Beach Site #10	10	2	12
State Park / Beach Site #11	10	0	10
State Park / Beach Site #12	10	0	10
Totals	64	10	74

Table A-6: SDG&E AB 1083 City and County Parks Pilot Site Scenarios

Sites	# of Level 2 Stations	# of DC FC	Total Stations
San Diego City / County Park Site #1	0	2	2
San Diego City / County Park Site #2	0	2	2
San Diego City / County Park Site #3	4	2	6
San Diego City / County Park Site #4	4	0	4
San Diego City / County Park Site #5	6	2	8
San Diego City / County Park Site #6	6	0	6
San Diego City / County Park Site #7	6	0	6
San Diego City / County Park Site #8	10	2	12
San Diego City / County Park Site #9	10	0	10
San Diego City / County Park Site #10	10	0	10
Totals	56	10	66