

Application: A.19-10-_____

Exhibit No.: SDG&E-_____

Witness: John Black

PREPARED DIRECT TESTIMONY OF
JOHN BLACK
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY
CHAPTER 3 – PROGRAM COSTS



BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

OCTOBER 28, 2019

TABLE OF CONTENTS

I.	PURPOSE AND SUMMARY	1
II.	ASSUMPTIONS ASSOCIATED WITH SDG&E's PROPOSED PYD EXTENSION PROGRAM	1
III.	DIRECT COSTS ASSOCIATED WITH SDG&E's PROPOSED PYD EXTENSION PROGRAM	2
IV.	FUNGIBLE FUNDING REQUEST FOR PYD EXTENSION	6
V.	STATEMENT OF QUALIFICATIONS	7

1
2
3
4
**PREPARED DIRECT TESTIMONY OF
JOHN BLACK
CHAPTER 3 – PROGRAM COSTS**

5 **I. PURPOSE AND SUMMARY**

6 The purpose of my prepared direct testimony is to sponsor the forecasted direct cost
7 funding request (both capital and operations & maintenance (“O&M”)) for San Diego Gas and
8 Electric Company’s (“SDG&E”) Power Your Drive Extension Program (“PYD Extension
9 Program” or “Program”). The Program is a two-year extension of the Power Your Drive Pilot
10 (“PYD Pilot” or “Pilot”), which was authorized by Decision (“D.”) 16-01-045, to provide
11 electric vehicle charging at workplaces and multi-unit dwellings (“MUD”).

12 **II. ASSUMPTIONS ASSOCIATED WITH SDG&E’S PROPOSED PYD EXTENSION**
13 **PROGRAM**

14 As part of the Program, SDG&E proposes to install electric vehicle charging
15 infrastructure and Electric Vehicle Supply Equipment (“EVSE”). SDG&E will install, own and
16 maintain the make-ready charging infrastructure at all the sites and will install, own and maintain
17 the EVSE at MUD sites. Cost information and associated data from the PYD Pilot and the
18 following list of assumptions was used to inform the cost estimate model for the PYD Extension
19 Program. Note that the assumptions below were made for cost estimate modeling purposes.
20 However, actual deployment may not exactly match the Program assumptions and estimates.
21 The following are approximations.

- 22 • Site breakdown (location and type):
 - 23 ○ 75% of sites will be at workplaces, and 25% will be at MUDs
 - 24 ○ At workplaces, 78% of sites will be installed at parking lots and 22% will
25 be installed in structures (PYD Pilot data)

1 ○ At MUDs, 66% of sites will be installed at parking lots and 34% will be
2 installed in structures (PYD Pilot data)

- 3 • Average port count per site: 10
- 4 • EVSE per port cost: \$3,000
- 5 • High-side connection costs per site: \$2,000¹
- 6 • Standby costs per site: \$2,000²
- 7 • Construction change order costs per site: \$5,000³

8 These assumptions and approximations were then used to populate the cost estimate
9 model for the Program.

10 **III. DIRECT COSTS ASSOCIATED WITH SDG&E’S PROPOSED PYD**
11 **EXTENSION PROGRAM**

12 Using the above assumptions and cost information obtained from the construction of
13 approximately 250 PYD Pilot sites,⁴ the PYD Extension Program construction direct cost
14 estimates are outlined in Table 3-1 for each type of applicable site. These costs were calculated
15 separately for workplace sites and MUD sites, as well as “parking lot” and “structure” sites.
16 These construction cost estimates are for a typical site with 10 ports.

¹ The high-side connection costs are an average per site obtained from the PYD Pilot and represent the cost to connect to the distribution grid from the utility transformer.

² Standby costs are an average per site obtained from the PYD Pilot, and are costs incurred by contractors at the construction site for idle time waiting to energize/de-energize/test facilities.

³ Construction change order costs are an average per site obtained from the PYD Pilot and are caused by unknowns discovered once construction begins at a site that require a change order with the contractor.

⁴ Rulemaking (“R.”) 13-11-007, Electric Vehicle-Grid Integration Pilot Program (“Power Your Drive”) Seventh Semi-Annual Report of San Diego Gas & Electric Company (September 20, 2019) at 3.

1 **Table 3-1:**
 2 **PYD Extension Program Overall Site Construction Direct Cost Estimates**
 3 **(In 2019 \$)**

Site Types	Cost Est.
Customer-Owned: 10 Port Parking Lot Site	\$104,000 ⁵
Customer-Owned: 10 Port Structure Site	\$124,000 ⁶
Utility-Owned: 10 Port Parking Lot Site	\$140,000
Utility-Owned: 10 Port Structure Site	\$160,000

4
 5 Using the overall site construction costs from Table 3-1 above, further analysis was done
 6 to calculate the weighted construction direct costs for all the sites in the Program. This is shown
 7 in Table 3-2 below, which lists the percentage split between the different types of sites
 8 (workplace and MUD), as well as “parking lot” and “structure” venues. Once the total
 9 construction direct cost estimates were calculated and weighted by the type of site, then the
 10 overall construction direct cost estimates for all the sites were calculated, leading to the average
 11 construction cost per site (\$118,109). This also includes one testing and training site that may be
 12 constructed in conjunction with the Program.

⁵ Customer-owned option excludes EVSE rebate costs, EVSE freight costs, and EVSE installation related costs.

⁶ Customer-owned option excludes EVSE rebate costs, EVSE freight costs, and EVSE installation related costs.

1 **Table 3-2:**
 2 **PYD Extension Program Weighted Site Construction Direct Cost Estimate**
 3 **(In 2019 \$)**

Description	Quan.	Cost Est. Each	Total Cost Est.
Workplace Sites			
Customer Owned (75%)	150		
Lots (78%): ⁷	117	\$104,000	\$12,168,000
Structures (22%):	33	\$124,000	\$4,092,000
MUD Sites			
Utility Owned (25%)	50		
Lots (66%):	33	\$140,000	\$4,620,000
Structures (34%):	17	\$160,000	\$2,720,000
Site Construction Subtotal:	200		\$23,600,000
Testing and Training Site Const:	1	\$140,000	\$140,000
Site Construction Total:	201		\$23,740,000
Average Cost per Site:			\$118,109

4
 5 The site construction total from Table 3-2 above is used in Table 3-3 below to calculate
 6 total Engineering, Design, and Construction costs. When EV charging equipment and materials
 7 costs are added, the total from Table 3-3 is used as an input (Subtotal 1) into Table 3-4 below,
 8 which lists all the Program's Direct Costs.

9 **Table 3-3: PYD Extension Program Engineering, Design, Construction**
 10 **and EV Charging Equipment / Materials Cost Estimate**
 11 **(In Millions, 2019 \$)**

Categories	Capital	O&M	Total
Weighted Site Construction Costs (from Table 3-2)	\$23.7		\$23.7
Site Engineering	\$3.2		\$3.2
~ 10 FTE Const. Support Internal Labor	\$1.8		\$1.8
New Electric Service Transformers	\$0.3		\$0.3
Spares	\$0.2		\$0.2
Misc. O&M		\$0.5	\$0.5
Total:	\$29.2	\$0.5	\$29.7

⁷ Percentage splits between lot and structure types are from PYD Pilot actual data.

1 Table 3-4 below summarizes all the capital and O&M estimated direct costs for the PYD
 2 Extension Program, including ongoing O&M through 2024 at which time the ongoing O&M will
 3 be included in the next General Rate Case (“GRC”). The direct costs are separated into seven
 4 main categories as shown. Including contingency, the total budget requested for the Program is
 5 \$43.5M in direct costs.

6 **Table 3-4: PYD Extension Program Direct Cost Estimates by Category**
 7 *(In Millions, 2019 \$)*

Categories	Capital	O&M	Total
Engineering Design & Construction	\$25.3	\$0.5	\$25.8
EV Charging Equip. & Program Materials	\$3.9		\$3.9
Subtotal from Table 3-3:	\$29.2	\$0.5	\$29.7
Program Management	\$1.8		\$1.8
EVSE Rebates & Administration		\$4.7	\$4.7
Data Collection, Analysis & Reporting		\$0.2	\$0.2
Marketing, Education & Outreach		\$0.3	\$0.3
Ongoing O&M ⁸		\$2.9	\$2.9
Direct Cost Subtotal:	\$31.0	\$8.5	\$39.6
Contingency:	\$3.7	\$0.3	\$4.0
Direct Cost Total:	\$34.7	\$8.8	\$43.5

8 Table 3-5 below shows the project total capital and O&M estimated direct costs by year,
 9 as well as the ongoing O&M estimated costs for maintenance by year. These cost estimates
 10 include the same contingency as Table 3-4 above, and the overall direct cost total is \$43.5M as
 11 shown above.

12 **Table 3-5: PYD Extension Program Direct Cost Estimates By Year⁹**
 13 *(In Millions, 2019 \$)*

	2021	2022	2023	2024	Total
Capital	\$4.1	\$20.3	\$10.2	\$0.0	\$34.7
O&M	\$0.3	\$2.8	\$2.6	\$0.0	\$5.7
Total Implementation:	\$4.4	\$23.1	\$12.8	\$0.0	\$40.4
Ongoing O&M	\$0.3	\$0.9	\$1.0	\$1.0	\$3.1
Direct Cost Total:	\$4.7	\$24.0	\$13.8	\$1.0	\$43.5

⁸ This ongoing O&M amount is intended to carry the program through to the next GRC.

⁹ Includes 10% contingency on unescalated direct costs.

1 Table 3-6 below summarizes the total capital and O&M requested for the PYD Extension
 2 Program. The capital costs include escalation, overhead loaders, allowance for funds used
 3 during construction (“AFUDC”), and capitalized property tax. The O&M includes escalation
 4 and loaders. The application of and methodologies behind escalation, overhead loaders,
 5 AFUDC, and capitalized property tax are described in the testimony of Casey Butler in
 6 Table 5-2.

7 **Table 3-6: Total Capital and O&M¹⁰**
 8 *(In Millions, includes escalation, overheads, AFUDC, and capitalized property tax)*

	2021	2022	2023	2024	Total
Capital	\$5.8	\$25.9	\$13.8	\$0.0	\$45.5
O&M	\$0.4	\$3.5	\$3.1	\$0.0	\$7.0
Total Implementation:	\$6.2	\$29.4	\$16.9	\$0.0	\$52.5
Ongoing O&M	\$0.5	\$1.6	\$1.9	\$1.9	\$5.9
Total Request:	\$6.7	\$31.0	\$18.8	\$1.9	\$58.4

9 **IV. FUNGIBLE FUNDING REQUEST FOR PYD EXTENSION**

10 SDG&E is proposing the PYD Extension Program with a request for \$34.7M in capital
 11 direct costs and \$8.8M in O&M direct costs, both in 2019 dollars. In order to maintain
 12 maximum flexibility within the project as it is executed, SDG&E requests that the dollar
 13 amounts in those respective capital and O&M categories be classified as fungible and be allowed
 14 to cross between the categories. During program implementation, customer demand may result
 15 in more MUD sites than originally budgeted or larger site deployments than expected. The
 16 ability to shift between capital and O&M will allow SDG&E flexibility to meet customer
 17 demand, as long as the total Commission approved budget is not exceeded.

18 This concludes my prepared direct testimony.

¹⁰ Includes 10% contingency on unescalated direct and indirect costs.

1 **V. STATEMENT OF QUALIFICATIONS**

2 My name is John Black. My business address is 8335 Century Park Court, San Diego,
3 CA 92123. I am employed by SDG&E as a manager of capital construction in the Electric
4 Engineering & Construction department. I am currently responsible for the construction
5 management of all electric transmission, below-grade substation, and clean transportation capital
6 projects and programs for SDG&E.

7 I have been employed by Sempra Energy companies since 2007. From 2007 through
8 2011, I was employed as a Senior Project Engineer by various Sempra Energy companies
9 responsible for project development, engineering, and execution of interstate natural gas
10 pipeline, compressor, and storage projects in the United States and Mexico. In 2011, I joined
11 SDG&E as a Technical Advisor II in Gas Transmission Technical Services. Prior to my current
12 position, I was responsible for managing the execution of SDG&E's Pipeline Safety
13 Enhancement Plan. Before being employed by Sempra Energy companies, I worked for various
14 pipeline and project management engineering consulting firms in Houston, Texas.

15 I earned a Bachelor of Science degree in Mechanical Engineering with a Minor in
16 Mathematics from Texas Tech University, Lubbock, Texas. I am a Registered Mechanical
17 Engineer in the State of California.

18 I have not previously testified before the California Public Utilities Commission.