Application: _____

Exhibit No.: SDGE-_____

Witness: David M. Goldgraben_____

PREPARED TESTIMONY OF

DAVID M. GOLDGRABEN

ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

CHAPTER 3

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

January 22, 2018

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PREPARED TESTIMONY OF
DAVID GOLDGRABEN
CHAPTER 3

I. VEHICLE TO GRID ELECTRIC SCHOOL BUS PILOT

The purpose of my direct testimony is to discuss in detail San Diego Gas & Electric Company's ("SDG&E") Vehicle to Grid Electric School Bus Pilot ("Pilot" or "V2G Pilot"). The Pilot components discussed hereinafter will include but are not limited to the Pilot's features, benefits, monitoring and evaluation plan, and estimated pilot costs.

A. Description and Features

1. Pilot Summary

Pilot Components	San Diego Gas and Electric Company's Vehicle to Grid Electric School Bus Pilot
Pilot Description	The Pilot will utilize ten electric school buses capable of Vehicle to Grid ("V2G") as a distributed energy resource ("DER") to bid into the California Independent System Operator ("CAISO") markets.
Objectives	Conduct a Vehicle to Grid Electric School Bus Pilot to learn how SDG&E can utilize electric vehicles ("EVs") as a DER to improve SDG&E's load factor, reduce greenhouse gas ("GHG") emissions and reduce local air pollution.
Market Segment and Vehicles Targeted	Ten school buses at one school location will be targeted for the Pilot.
Pilot Architecture	The Pilot will utilize a separate service that includes a circuit, transformer, meter, and ten bi-directional chargers capable of discharging to the grid.
Implementation Timeframe	Installation will begin after California Public Utilities Commission ("CPUC" or "Commission") approval. Data will be collected and reported for one year after installation.
Pilot Partners	First Priority GreenFleet Ltd ("FP GreenFleet"), The Lion Electric Company ("Lion Buses"), Broadband TelCom Power Incorporated ("BTC Power"), Kisensum Incorporated ("Kisensum") and EV Connect Incorporated ("EV Connect").

Pilot Components	San Diego Gas and Electric Company's Vehicle to Grid Electric School Bus Pilot
Leveraged Funding	SDG&E will work with the school district to leverage funds that may be available to contribute to the Pilot. The California Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project ("HVIP") may contribute up to $235,000 per bus.[1] SDG&E will seek additional funding through allocations of the Volkswagen Diesel Settlement ("VW Diesel Settlement") and grants from the California Air Resources Board ("CARB"), and the California Energy Commission ("CEC").
Stranded Asset Mitigation	The vehicles and charging stations will be deployed at a school location where the school district has agreed to operate the vehicle and participate in the Pilot. The school district that is chosen will also commit to using the buses and charging stations after the V2G Pilot has concluded. A factor that will be used in the selection process will be that the school district continues to utilize the assets after the Pilot.
Uniqueness of Pilot	The V2G Pilot is the first pilot that will utilize V2G enabled school buses to participate in the CAISO energy market utilizing 25kW (discharging) V2G bi-directional chargers.
Grid Impacts	Lessons learned will allow for development of broader installations that may have an impact on improving SDG&E's load factor.[2]
Ratepayer Interest	Data will be collected through the Pilot that may allow for a larger scale program.
Emissions Benefits	Estimated GHG reduction: 174 $MTCO_2e$/year.[3]
Monitoring and Evaluation Plan	Monitoring for one year after installation will be performed to ensure asset utilization and V2G operation. One year of data will be evaluated at the conclusion of the Pilot to determine how V2G can be scaled for the electric school bus segment as well as other vehicle segments.
Future Opportunities/Scalability	SDG&E may scale the Pilot up in the future as part of a larger program in order to promote widespread transportation electrification ("TE") and use of V2G technology.
Cost	Estimated direct cost: $1.7 M

[1] HVIP is funded by California Air Resources Board ("CARB") and administered by CALSTART. See *CARB Discussion Draft Funding Plan* (November 9, 2017) at p. I-93, Table I-16 (Eligible New Zero-Emission School Bus Voucher Amounts). Available at: https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1718_funding_plan_final.pdf.

[2] Load factor is a measure of the utilization rate of the grid. Load factor is the ratio of total energy used in a period of time divided by the possible total energy that could be used within the same period of time.

[3] *See* the direct testimony of J.C. Martin (Chapter 7) for further details.

2. Pilot Description

SDG&E requests authorization to install, maintain and own EV charging infrastructure for a V2G Pilot. The Pilot will utilize ten electric school buses capable of V2G as a DER to bid into the CAISO markets. Large scale deployment of V2G may help integrate renewable generation, assist with the steep evening system ramp, and reduce peak demand.

V2G is the process of discharging energy from the EV battery to the electric distribution grid. EVs have onboard batteries that are charged from the electric grid. Typically, the EV battery is discharged during normal vehicle driving. However, the EV battery can also be discharged back into the distribution grid.

V2G allows for greater utilization of the EV battery. When the vehicle is stationary, the EV battery can be charged from the electric grid as well as discharged to the electric grid to provide system level grid services. V2G allows for greater utilization of an asset for the asset owner and can provide a revenue stream for them. Successful execution of V2G may provide a revenue stream from the CAISO markets. It is anticipated that in the future V2G can also be used to aggregate numerous resources and provide system level services to the grid at larger scale. This opportunity may become more and more impactful as hundreds and thousands of electric school buses and millions of light-duty passenger vehicles are deployed across the state.

SDG&E will pilot one installation which will include a new separately metered electric service, bi-directional EV chargers, third party project management, and a contribution toward the cost of buses. SDG&E will give preference to locate the Pilot within a Disadvantaged Community ("DAC").

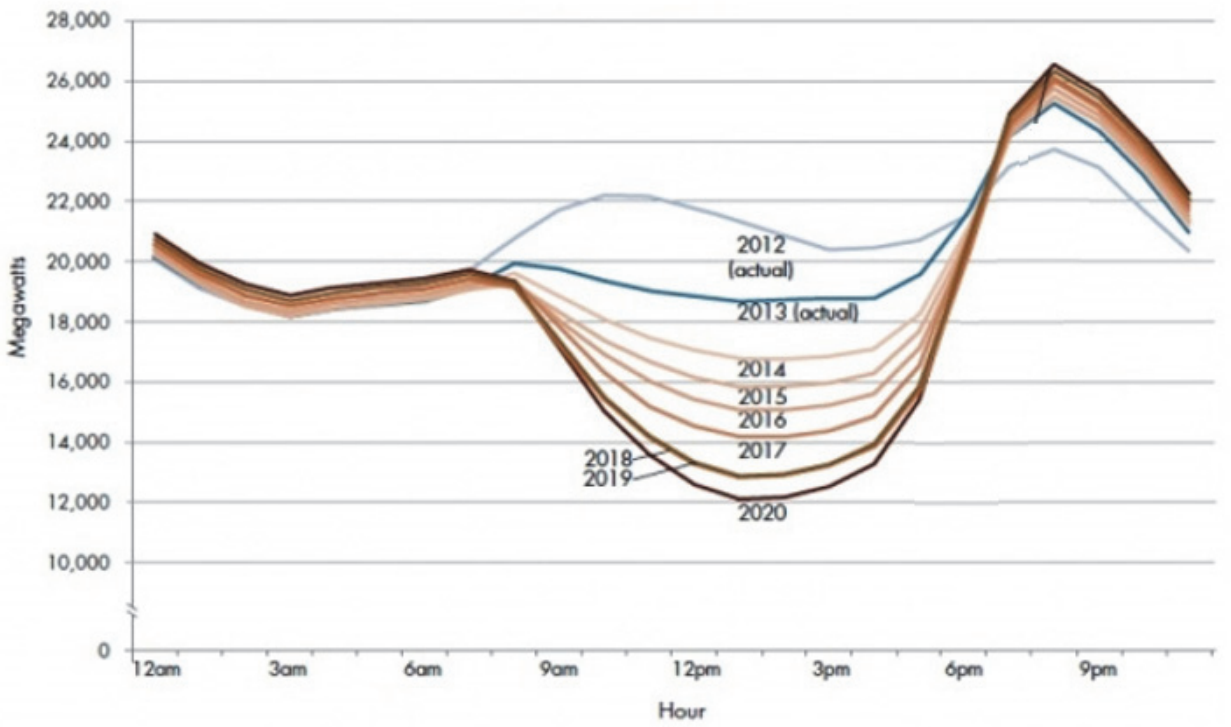
The Pilot will provide a $450,000 contribution to help the school district fund the purchase of the school buses. In addition, the Pilot will provide funding for the electricity utilized during the one year Pilot duration, up to a cap of $100,000.

3. Pilot Objectives and Market Segment

SDG&E intends to learn how EVs can be utilized as DERs to bid into the CAISO energy markets. SDG&E intends to use the Pilot to learn how to utilize EVs, at large scale, to improve SDG&E's load factor. SDG&E will evaluate how V2G operation aligns with the charging and discharging session schedule of the school buses. Interaction with the wholesale and retail markets will also be examined.

The CAISO demand curve ("Duck Curve") seen in Figure 1 below shows three system level conditions for which the Pilot seeks to find a scalable solution. The first condition is an abundance of solar generation during the early afternoon hours. Integration of renewables can be advanced by absorbing the abundant solar using EV batteries on a school bus that would otherwise not be utilized during this time of day. The second condition is the steep demand ramp that occurs during the evening hours. This represents an ideal time for school buses to begin to discharge energy to the grid. The third condition is the peak demand during the evening hours. This is also a time that school buses can continue to discharge to the grid to help flatten this peak demand. Widespread V2G may help reduce the need to solve these problems with more costly solutions such as the installation of new powerplants and reserve power infrastructure capable of rapid discharging to the grid.

Figure 1: CAISO Demand Curve[4]



School buses represent an ideal vehicle segment that can help solve all three of these conditions due to their predictable transportation use schedules. These potential grid assets are parked and under-utilized during system periods of renewable generation, evening ramp and peak demand.

The Pilot will use both an alternating current ("AC") to direct current ("DC") on-board converter to charge the buses as well as a DC to AC off-board inverter to discharge the buses to the grid. Charging and discharging during the times of day on a predictable and repeatable schedule as shown in Figure 3 needs operational verification.

[4] Figure derived from CAISO Fast Facts, available at: https://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf.

SDG&E expects positive outcomes from implementation of the Pilot. The Pilot may prove that widespread V2G is scalable. SDG&E expects GHG emissions reductions of 174 $MTCO_2e$/year.[5] This goal will be achieved by replacing current diesel buses with electric buses.

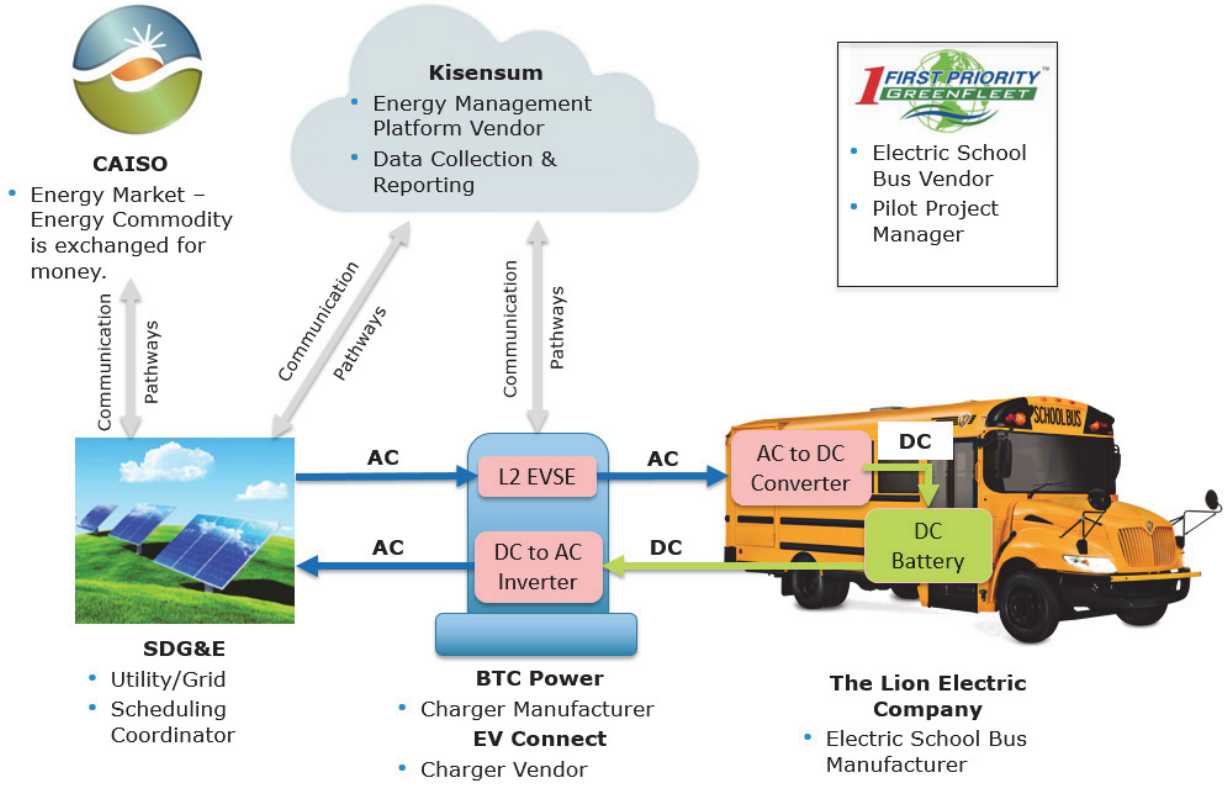
4. Pilot Architecture

The Pilot will utilize a separate electric service that includes a circuit, transformer, meter, and ten bi-directional chargers capable of discharging to the grid as shown in Figure 2 below. Vehicle goals of the Pilot will include ten electric school buses. Each school bus will be capable of charging from the grid at 19.2 kW (192 kW total), discharging to the grid at 25 kW (250 kW total) and have at least 130 kWh battery (1,300 kWh total).

If a newer model of the school bus is available with larger battery capacity and is consistent with the approved CPUC budget, then those vehicles may be selected to provide greater operational flexibility for the school's transportation needs and the V2G Pilot.

Figure 2: V2G Pilot Architecture

[5] *See* the direct testimony of J.C. Martin (Chapter 7).



The Pilot will utilize the AC to DC charger on board the original equipment manufacturer ("OEM") bus for charging. The bus will need some modifications to become V2G capable. Modifications to the bus will include installation of a DC relay, software engineering for the vehicle's battery management system ("BMS"), DC power wiring, and Combined Charging System ("CCS") charging inlet. With these modifications the bus will be capable of discharging DC power to the Broadband TelCom Power, Incorporated ("BTC Power") bi-directional chargers which have a DC to AC inverter capable of sending power to the grid. The bi-directional charger will conform to Underwriter Labratories ("UL") standards and be certified. SDG&E will install the bi-directional chargers utilizing trained contractors to help ensure safety, which is key for the Pilot. Construction, installation and maintenance contractors will have Electric Vehicle Infrastructure Training Program ("EVITP") certification, and SDG&E will require that all construction, installation and maintenance that is not performed by employees of

SDG&E shall be performed by contractors signatory to the International Brotherhood of Electrical Workers ("IBEW") who hold valid C-10 contractor's licenses, as defined in the governing labor agreement between SDG&E and the IBEW.

Figure 3 below shows an illustrative charging and discharging session schedule. This schedule will ultimately be driven by the transportation needs of the school district. The operational characteristics of the buses closely align to the Duck Curve as seen in Figure 1. SDG&E will seek to prove how V2G can be implemented utilizing school buses while still meeting the transportation needs of the school district.

Figure 3: Illustrative Charging and Discharging Session Schedule

6AM-9AM Take students to school

9AM-2PM Buses absorb renewable energy (charging)

2PM-5PM Take students home

5PM-9PM Discharge to grid (discharging)

9PM-6AM Charge buses overnight (charging)

SDG&E will act as the scheduling coordinator for the Pilot. SDG&E will utilize a scheduling software platform to coordinate the scheduling of V2G operations with the CAISO.

5. Implementation Timeframe

SDG&E will begin installation of the infrastructure upon CPUC approval of the Pilot. Data collection will start upon the completion of the installation and last for a one-year duration. First Priority GreenFleet Ltd. ("FP GreenFleet") will compile, evaluate, draw conclusions, and report the Pilot data. The report FP GreenFleet creates will be shared with the CPUC and other interested stakeholders after the data collection process is complete.

6. Pilot Partners

SDG&E solicited a request for information ("RFI") as the Pilot was being conceptualized. The RFI was sent to seventeen entities, of which five responded. SDG&E selected finalists to participate in a request for proposal ("RFP") and ultimately selected FP GreenFleet's pilot concept. FP GreenFleet's pilot concept was well thought out and is scalable from a technology and standardization perspective. The school district will purchase the buses from FP GreenFleet, the third-party project manager for the Pilot. A Summary of Proposed Terms between SDG&E and FP GreenFleet can be found in Attachment A to this chapter.

The Pilot conceptualized by FP GreenFleet includes collaboration with several business entities as shown in Figure 2. FP GreenFleet will be responsible for project management and coordination of the Pilot. FP GreenFleet will manage the education and outreach effort to find one school district willing to participate in the Pilot.

FP GreenFleet selected The Lion Electric Company ("Lion Buses") due to their ability to manufacture California certified Type C electric school buses that are capable of V2G with minimal modification to the bus itself. FP GreenFleet selected BTC Power due to their ability to manufacture commercial bi-directional chargers that are V2G capable utilizing UL certified inverters to ensure safety is held paramount. FP GreenFleet selected Kisensum Incorporated ("Kisensum") for their ability to provide an energy management platform ("EMP") capable of sending the signal to the school buses to charge and discharge to the grid when signaled by the scheduling coordinator. Kisensum will also be responsible for planning the use of the school buses by SDG&E as a DER while still meeting the school's transportation requirements. FP GreenFleet selected EV Connect Incorporated ("EV Connect") as the bi-directional charger vendor.

SDG&E will also partner with a school district for the Pilot. The school district will work with Kisensum and SDG&E to ensure that the school buses are ready for discharging to the grid when scheduled. SDG&E will make an effort to select a school district that is located in a DAC.

7. Leveraged Funding

The California HVIP may contribute up to $235,000 per bus.[6] SDG&E will seek additional funding through allocations of the Volkswagen Diesel Settlement and grants from the CARB, and the CEC.

8. Stranded Asset Mitigation

The vehicles and charging stations will be deployed at a school location where the school district has agreed to operate the vehicle and participate in the Pilot. The school district that is chosen will also commit to using the buses and charging stations after the V2G Pilot has concluded. The Pilot will provide a five-year warranty for charger maintenance.

9. Uniqueness of Pilot

The V2G Pilot is unique from other pilots that have been done in the past. The V2G Pilot is the first pilot that will utilize V2G enabled school buses to participate in the CAISO energy market utilizing 25kW (discharging) V2G bi-directional chargers. The V2G Pilot is different from stationary energy storage for charging and discharging to the grid because school buses are mobile DERs. The V2G Pilot is not the same as other V2G pilots in other regional transmission organization ("RTO") regions. The V2G Pilot is different from pilots that participate in other markets, such as the frequency regulation market. The V2G Pilot is not the same as pilots that

[6] HVIP is funded by California Air Resources Board ("CARB") and administered by CALSTART. See *CARB Discussion Draft Funding Plan* (November 9, 2017) at p. I-93, Table I-16 (Eligible New Zero-Emission School Bus Voucher Amounts). Available at: https://www.arb.ca.gov/msprog/aqip/fundplan/proposed_1718_funding_plan_final.pdf.

utilize different vehicle types, such as light-duty electric vehicles, since the V2G Pilot will utilize heavy-duty electric school bus vehicles.

B. Pilot Benefits

1. Grid Impacts

SDG&E intends to use the Pilot to learn how to utilize EVs, at large scale, to improve SDG&E's load factor. Lessons learned may allow for development of future, more robust programs that may have an impact on improving SDG&E's load factor. This includes potentially mitigating the Duck Curve's conditions of high renewable generation, ramp up and peak demand. At the conclusion of FP GreenFleet's data analysis process, FP GreenFleet will provide a report to SDG&E that will be shared with the Commission and stakeholders. The report will include lessons learned, data, and conclusions to help stakeholders better understand strategies to implement and standardize V2G pilots and programs so that they can be deployed at scale.

2. Ratepayer Interest

Data will be collected through the Pilot that may allow for a larger scale program. Widespread TE may increase total system load, but by smoothing out the system demand curve through V2G SDG&E may be able to increase the grid's load factor and integrate more renewable energy.

Performing this pilot may reduce the cost of performing other V2G installations in the future. The software engineering needed to make one bus V2G capable only needs to be performed for the first bus. The other nine buses included in the Pilot will take advantage of the economy of scale benefit of utilizing the same software engineering upgrade without significant added costs. This could make potential future programs more economic and scalable.

Another ratepayer benefit of the Pilot is improved air quality. The Pilot will replace existing internal combustion engine school buses which emit local tailpipe emissions with electric buses that emit zero local tailpipe emissions. This will improve the local air quality positively impacting the community, and the school children who need these buses for transportation.

3. Emissions Benefits

The Pilot provides GHG reductions which benefit all ratepayers. First year reductions of 174 $MTCO_2e$ are estimated for the vehicles included in the Pilot.[7]

C. Monitoring and Evaluation Plan

FP GreenFleet will conduct monitoring for one year after installation. The plan will include, data such as consumption, duration and frequency of charging, demand, and energy exported to the grid. FP GreenFleet will examine the potential impact V2G may have on the vehicles' batteries. FP GreenFleet will also endeavor to measure the energy used for vehicle transportation as opposed to the energy discharged to the grid. It is important to understand how much energy is utilized for transportation compared to V2G. This will allow stakeholders to consider how rates impact future V2G deployments.

At the conclusion of FP GreenFleet's data analysis process, SDG&E will provide a report to the CPUC that can be shared with interested stakeholders. The report will include data such as energy consumption and energy exportation relative to time, demand and lessons learned. It will also examine the costs and benefits of V2G. Costs will include the incremental cost to make charging stations and vehicles bi-directional (one-time costs) plus the cost of the electricity (ongoing costs) that will later be discharged to the grid.

[7] *See* the direct testimony of J.C. Martin (Chapter 7).

SDG&E expects to learn several lessons through the implementation of the Pilot. SDG&E will set out to prove that the Pilot is scalable, how the use case is aligned with the charging and discharging session schedule shown in Figure 3, if a potential future V2G program will have an impact on improving SDG&E's load factor, and how it will help integrate renewable energy and reduce GHGs. Furthermore, SDG&E will seek to determine the value of V2G as a potential revenue stream. A revenue stream may help expedite the conversion of school district fleets to electric.

D. Future Opportunities/Scalability

The technology is commercial and ready to be utilized today. Technology components include commercial bi-directional chargers, cellular modems, and electric school buses. Because minimal modifications are required, the Pilot may be scaled up to include different vehicle segments and fleets. Streamlining the process of integrating vehicles with the utility grid may reduce costs of potential future programs. The addition of a CAISO revenue stream can further benefit the total cost of ownership ("TCO") for school districts making potential future programs more scalable.

E. Estimated Pilot Costs

The estimated direct cost of the Pilot is $1.7 million. This cost includes a $450,000 ratepayer contribution for the school district to purchase the ten school buses. This estimate also includes the cost of electricity utilized by the Pilot for the school district capped at $100,000. SDG&E is aware that school districts have very constrained operating budgets. Without this financial assistance, it may not be possible to find a school district that would be able to participate in this pilot. Furthermore, this pilot will benefit all ratepayers through improved air quality. See Figure 4 below for a detailed breakdown of direct cost.

Figure 4: V2G Pilot Direct Cost Detail

SDG&E After Sales Tax, Unloaded, Unescalated, Direct Cost Estimate for V2G Electric School Bus Pilot		
	Capital	O&M
Engineering and Design	35,038	
Trench and Conduit	57,817	
Wire and Installation	32,300	
Switch Gear / Meters	15,378	
Program and Project Management	141,711	
Charger/EVSE - Utility Owned	182,530	
Transformer	18,252	
SDG&E Contribution Towards Bus		450,000
Electricity Cost		100,000
Measurement and Evaluation		25,000
Licensing and Analysis		452,461
Charger/EVSE Maintenance and Warranty		47,935
Tax and Contingency	174,110	
Subtotal	657,137	1,075,396
Pilot Total	1,732,533	

F. Conclusion and Summary

CPUC authorization for direct cost recovery of $1,732,533 will be used to deploy the charging infrastructure, project management by FP GreenFleet, first year electricity costs up to a cap of $100,000 and a contribution toward the cost of buses. This will allow SDG&E to obtain experience and knowledge of V2G infrastructure deployments and pave the way for possible future programs that involve broad V2G deployment. Increased utilization of V2G technologies may solve the various conditions discussed regarding the Duck Curve. As noted above, the Pilot is forecasted to reduce GHGs by 174 $MTCO_2e$ for the first year. The Pilot may promote widespread TE and EV adoption in this emerging market segment.

This concludes my prepared direct testimony.

II. STATEMENT OF QUALIFICATIONS

My name is David M. Goldgraben. My business address is 8306 Century Park Court, San Diego, California 92123. I am employed by SDG&E as an Engineer I in Clean Transportation.

I have over seven years of energy industry experience. My current duties involve creating scope and cost estimates for pilots, projects, and programs. I have been a participant of the Vehicle Grid Integration ("VGI") Communications Standards Workshop hosted by the CPUC.

Prior duties at SDG&E include project management of gas transmission construction projects including both pipeline and compressor station work. Prior to SDG&E, I worked for National Grid managing gas distribution construction projects, managing the Encroachment and Resurfacing Programs, as well as serving in various roles in the Operations Engineering and Reliability Planning departments.

My education is in Mechanical Engineering. I graduated from Stony Brook University in 2010 with a Bachelor of Engineering in Mechanical Engineering and a Master of Science in Mechanical Engineering. I meet the requirements to apply for certification as a professional engineer including successfully passing the Principles and Practice of Engineering ("PE") examination.

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

Attachment A

CHAPTER 3 - ATTACHMENT A

SDG&E / First Priority GreenFleet
Vehicle to Grid ("V2G") Summary of Proposed Terms

01/08/18

This Non-Binding Summary of Proposed Terms ("Summary of Proposed Terms") has been provided for information purposes only and does not constitute an offer or give rise to any obligation, express or implied, of any party to negotiate, proceed with or to consummate any of the proposed transactions or activities described herein and does not set forth all matters on which agreement must be reached for any such actions or transactions to be consummated.

1. San Diego Gas & Electric Company ("SDG&E") and First Priority GreenFleet LLC ("FPGF") propose to work together to support the deployment of a vehicle to grid ("V2G") electric school bus pilot ("V2G Electric School Bus Pilot" or "V2G Pilot").

2. The V2G Pilot will utilize ten (10) electric school buses at one (1) school location.

3. FPGF will provide electric school buses with a minimum battery capacity of 130 kWh per bus.

4. FPGF will provide charging stations and inverters. The charging stations will include 25 kW inverters capable of exporting energy from the electric school bus to the utility grid.

5. The electric school buses will charge mid-day to utilize renewable generation from the grid.

6. The electric school buses will discharge to the grid in the late afternoon and evenings to provide a CAISO service.

7. The V2G pilot will conform to, and be operated consistent with, SDG&E's safety rules as articulated in the relevant tariffs.

8. SDG&E will utilize its internal process and procedures to install, own and maintain the charging stations. This will consist of installing a new service and infrastructure up to and including the charging stations.

9. To ensure safety of installation, the chargers will be installed by trained contractors or SDG&E employees that are signatory to the International Brotherhood of Electrical Workers ("IBEW"). Electricians will have Electric Vehicle Infrastructure Training Program ("EVITP") certification, and all EVSE installation work that is not performed by employees of SDG&E shall be performed by electricians who are signatories 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.

10. FPGF, as the program manager, will use a software platform (example: Kisensum) to bundle the EV batteries into a single standby distributed energy resource ("DER"). The program manager will coordinate with SDG&E to manage the available resources.

11. The aggregated resource will be made available for the scheduling coordinator to bid into the CAISO.

12. SDG&E, as the scheduling coordinator, will bid the resource into the CAISO.

13. FPGF will collect and analyze data and create a report. Data collected will include energy consumption, energy used to power vehicle, energy discharged to the grid, the availability of the vehicles to operate as a grid resource, impacts of V2G as it relates to battery degradation, and lessons learned. The report will also include recommendations for potential future programs that include a path forward to scale V2G throughout California more broadly.

14. FPGF will conduct marketing and outreach to support deployment of this V2G Pilot and also to help educate stakeholders for future scalability of V2G.

15. FPGF and SDG&E will work with the CAISO and stakeholders to find ways to scale V2G. This will include tracking energy to and from the vehicle and examining retail verses wholesale costs.

16. SDG&E intends to request a V2G Pilot direct cost budget from the CPUC that equals $1,732,533. Budget consists of:
    a. $25,000 to FPGF for Measurement and Evaluation
    b. $450,000 toward cost of bus purchase
    c. $705,072 towards installation of new service, and maintenance of chargers
    d. $452,461 for software to bid the resources into the CAISO
    e. $100k for fuel cost – capped

17. FPGF will be the customer of record on the electric service account during the pilot. FPGF will be reimbursed for the electricity cost up to the $100,000 cap.

18. FPGF and SDG&E will collaboratively pursue additional funds to support school bus purchase that is not covered by Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project ("HVIP") and SDG&E ratepayer contribution. Sources could potentially include California Air Resources Board, California Energy Commission, Department of Energy, VW Settlement, and others.

19. FPGF will leverage HVIP funds to offset cost of electric school bus purchase.

20. SDG&E and FPGF will endeavor to select a school to deploy the V2G Pilot that will transfer the bus battery to SDG&E after the battery is no longer being used to operate the bus. The battery may then be used as a second-life stationary energy storage device.

21. SDG&E intends to submit the V2G Pilot to the California Public Utilities Commission ("CPUC") for approval of the pilot and associated budget in item 16 above.