

SB 695 Report
To California Public Utility Commission (CPUC) *Energy Division*
San Diego Gas and Electric Company
2019

Part II: Section 748(b) Utility Study and Report

San Diego Gas and Electric Company (SDG&E) appreciates the opportunity to provide input to the California Public Utilities Commission (CPUC or Commission) in response to Senate Bill (SB) 695-enacted changes to Public Utilities Code (PUC) Section 748. This report addresses PUC Section 748(b). SDG&E's response addressing PUC Section 748(a), which provided data related to both gas and electric revenue requirements, was submitted separately.

SDG&E's objective in this response is to provide information that the CPUC may find useful as it prepares its annual report for the Governor and Legislature. Accordingly, SDG&E's report provides data related to both gas and electric revenue requirements and rates. With respect to overall presentation, SDG&E's report is structured as per the Energy Division's (ED) request under the following headings:

- Overall Rate Policy
- Management Control of Rate Components
- Utility Policies and Recommendations for Limiting Costs and Rate Increases While Meeting State's Energy and Environment Goals for Reducing Greenhouse Gases (GHG).

1. Recommendations to the CPUC and Legislature

A. Opening Comments

Ratemaking and the resulting rates are increasingly complex, which makes balancing customer choice and opportunities to save critical to providing rates that send accurate price signals to customers for the benefit of the grid and all customers. With innovative and effective customer education, and simple and easy-to-understand bill presentation, SDG&E will be able to ensure that customers understand the price signals provided, so they can make economically efficient decisions. Only through the combination

of cost-based rates, transparency, and effective customer education can SDG&E be an effective platform for ensuring ratepayers have full access to competitive customer choices in a manner that is economically efficient and beneficial to all customers.

A continued focus on cost-based rates and effective customer education is paramount given California’s ambitious and important climate change goals. California is the most populous state in the nation and the 5th largest economy¹ in the world and continues to be a leader in shaping national energy policy with its adoption of a set of comprehensive policies and initiatives aimed at significantly reducing GHG. The achievement of these goals has not been blind to the potential rate and cost shift implications that these programs create for electric utility customers. For instance, Renewables Portfolio Standards (RPS) goals of 33% by 2020 include a cost limitation provision “...set at a level that prevents disproportionate rate impacts.”² Senate Bill (SB) 350, the Clean Energy & Pollution Reduction Act, extended the timeline and requirements under the RPS of 50% renewable sales by 2030.³ Assembly Bill (AB) 327 requires that Net Energy Metering (NEM) moves forward in a manner that (i) is “based on the costs and benefits of the renewable electrical generation facility;”⁴(ii) ensures “total benefits of the standard contract or tariff to all customers and the electrical system are approximately equal to total costs;”⁵ and (iii) ensures “sustainable growth.”⁶

SDG&E continues to advance California’s goals, as a leader in clean energy, advancing electric vehicles and developing and operating a low-carbon energy infrastructure while providing safe and reliable service. SDG&E is committed to delivering safe, clean, and reliable energy services to its customers with accomplishments including:

- Around forty-five percent of SDG&E’s delivered electricity comes from renewable resources;
- As of the end of December 2018, SDG&E had approximately 1,027 megawatts (“MW”) of customer-sited solar and wind generation from over 148,000 customers;
- As of the end of December 2018, SDG&E has built and energized about 2,000 electric vehicle (EV) chargers to date at workplaces, apartments and condominiums.
- Receiving the “Best in the West” award for electric reliability for 13 straight years.

² California Public Utilities Code Section 399.15(d)(1).

³ SB350, Chapter 547(1)

⁴ PUC Section 2827.1(b)(3).

⁵ PUC Section 2827.1(b)(4).

⁶ PUC Section 2827.1(b)(1).

To ensure the continued pursuit of the State’s clean energy goals in a sustainable manner, it is critical to continue striving to move toward rates that reflect accurate prices, and incentives or subsidies that are direct and transparent.

Achieving these goals in a sustainable manner will require rates that reflect accurate prices and transparent incentives. A Rocky Mountain Institute (RMI) report, *Reimagining the Utility: Evolving the Functions and Business Model of Utilities to Achieve a Low-Carbon Grid* (Report), observes that “... a future electricity system that, by necessity, will likely integrate large amounts of distributed generation (particularly distributed solar photovoltaics [PV]); will need to have significant demand flexibility to balance variable generation sources; will be characterized by a vastly different asset base of physical infrastructure and control systems; and which, consequently, will require innovation and breakthroughs in new service offerings. The challenge for utilities and regulators is to address these needs and harness opportunities on the urgent timeline required to meet greenhouse gas abatement targets, while not abandoning long-standing requirements for affordable, universal energy supply and grid reliability.”⁷ Therefore, an evolving utility requires increased flexibility in rate structures.

There is consensus that the utility power grid “is evolving from a one-way centralized power delivery system to a more open, flexible, multipoint digitized network (or platform) with a collection of technologies and assets, some controlled by the utility and some not.”⁸ This concept of the grid as a “plug-and-play platform” for integration of new services and technologies is relatively recent, but it is undeniably the shape of things to come. In this vein, a 2014 RMI Report, *The Economics of Grid Defection*, continues to be relevant when it states “Rapid scaling of solar PV, and now grid-connected solar-plus-battery systems, are requiring federal, utility, state, and local regulators to explore new regulatory frameworks. Distributed generation and storage don’t fit neatly into the traditional utility model of generation, distribution, and load or existing pricing structures that recover utilities’ fixed costs through energy sales.” As technology continues to

⁷ Rocky Mountain Institute (“RMI”), *Reimagining the Utility: Evolving the Functions and Business Model of Utilities to Achieve a Low-Carbon Grid*. January 2018.

⁸ The Edison Foundation Institute for Electric Innovation, *Innovations Across the Grid*, Vol.2, December 2014, p. 3.

Available at: http://www.edisonfoundation.net/iei/Documents/IEI_InnovationsGrid_volII_final_LowRes.pdf

advance, more innovative approaches to a cost-based rate design may be needed to balance the interests of all ratepayers and may result in a higher level of complexity in rates in order to minimize the cost shift to non-participating customers (i.e., customers who cannot or do not utilize distributed energy resources or other energy technologies) and ensure that all customers are treated fairly. Rates truly designed based on cost-causation principles are likely to be increasingly complex in order to fully enable the development of energy technology in a sustainable manner for all customers.

SDG&E believes that moving to a more sustainable rate design framework, the “Modern Rate Architecture” framework, which enables unbundling of rates to clearly delineate grid costs, customer services, and volumetric energy, while ensuring that policy mandates are equitable and transparent. The Modern Rate Architecture “MRA” supports California’s energy vision by defining how costs are assigned and paid for. In an increasingly fragmented market, creating and implementing policy mandates has become increasingly complicated, as it begs questions such as “should certain customers pay for this policy?” and “who benefits from this program or resource?”. The current rate structure is archaic, with subsidies for specific customers and technologies buried in rates, when rates should be designed to be equitable for all customers. The MRA provides flexible guidelines that ensures that it 1) identifies the products related to utility services; 2) recognizes the costs and benefits of policy mandates by separating them from the costs of utility services while transparently tracking those costs; 3) establishes pricing of utility services and policy mandates based on real costs and appropriately charges all customers for the services they use and the policies from which they benefit; and 4) creates transparent credits to compensate for benefits provided or incentives for certain behaviors. As evidenced by these principles, the MRA, as a flexible framework, will enable concurrent evolution to accommodate new and improved technology, and as customers have more choices to take control of their energy usage.

The RMI Report also stressed an important point regarding the transformed role of the consumer – from passive recipient of service to an active participant in an interconnected grid – brings a new dimension to the electric utility business environment that the utilities need to be responsive to. It notes that “the electricity system of the future is likely to encompass an increasingly diverse and interconnected set of actors, with widely

varying assets, behaviors, and motivations.”⁹ The Report observes further that “the effectiveness of a utility’s role in conducting the orchestra of distributed energy resources [DERs] that interact with its system will be a critical factor in achieving favorable outcomes for all stakeholders...*And the long-term health and stability of the electricity grid will be essential to making such a system work. (emphasis added)*”¹⁰ In other words, significant investment in upgrading the grid will be necessary to successfully manage the evolution of the electric grid to a “grid of things” that seamlessly integrates new energy resources and technologies.

While the implementation is not perfect, SDG&E believes that the principle of bundled customer indifference also provides a correct approach when considering policies around departing load customers and the pursuit of forward-looking policy goals. As California continues to ensure customer choice for energy services, it is important to continue to recognize the unique role the utilities will continue to play as the provider of last resort for customers. This means that the utility is required to ensure the ability to provide service to every customer in its service territory (basically, access to SDG&E’s electric grid), even if that customer is not SDG&E’s customer. A fair and equitable rate design would require that all customers pay a reasonable share of the utility infrastructure costs needed to serve them. Today’s traditional customer, however, is not indifferent to the “departing load” that occurs because of the adoption of rooftop solar or other DERs. Customers today are observably changing their behavior. The cost shift associated with the adoption of such technologies in SDG&E’s territory is acutely felt by all non-adopters as the utility cost of service for adopters is disproportionately transferred to non-adopters. At the end of 2013, prior to the proceeding R.14-07-002, NEM 2.0 – Proposal for Successor Net Energy Metering Tariff, the estimated Annual Residential Cost Shift of rooftop solar was \$71 million; by the end of 2015 it had increased to \$188 million. The NEM 2.0 Decision led to minimal change in the way rooftop solar is treated by the utility. As of the end of 2017, the estimated Annual Residential Cost Shift increased by \$50 million over the previous year to \$320 million.¹¹ While certain portions of the NEM 2.0 Decision speaks to

⁹ RMI, Net Energy Metering, Net Zero Energy and the Distributed Energy Resource Future, p. 2. Available at: http://www.rmi.org/rmi_pge_adapting_utility_business_models.

¹⁰ *Ibid.*

¹¹ Cost shift estimates based on 11/1/2018 effective rates and the NEM MW installed in each respective year.

“significantly reducing the cost-shift while also pushing rooftop solar to provide significantly more benefit to the grid,”¹² under the resulting decision SDG&E’s customers have yet to see this net benefit reflected in their rates, as upward rate pressure continues. Within SDG&E’s territory, this change has been a 444% increase of \$316 million in the annual cost shift from adopters to non-adopters from year-end 2013 to year-end 2018, with \$148 million occurring under NEM 2.0 since SDG&E hit the NEM cap in June of 2016. This cost shift is anticipated to increase over time without significant revisions to NEM policy.

A more rigorous examination of the future of NEM policies before the Commission is yet to occur. That is when the Commission anticipates being able to make a more informed decision, determining “that a better understanding of the impact of customer-sited distributed resources on the electric system will be developed from work currently under way but not yet completed in other Commission proceedings, including but not limited to the distribution resources plan proceeding, (Rulemaking (R.) 14-08-031) and the integrated distributed energy resources proceeding (R.14-10-003)...”¹³. As the Commission prepares to re-examine NEM policies, it is imperative that the correct principles are in place to ensure future sustainability which balance the need to further incent clean energy adoption in a manner that minimizes cost shift to non-participating customers.

SDG&E believes that this is an opportune moment to ensure the correct principles and practices are in place to ensure future sustainability. Within the aforementioned proceedings and the 2018 Residential Rate Design Window, the utility has the opportunity to provide much-needed rate relief to its upper tier customers. Before Residential Rate Reform (Rate Reform) began, SDG&E’s Residential Tier 2 rates were double of its Tier 1 rates. As of today, structural progress has been made through the tier consolidation process; SDG&E’s customers now have two tiers instead of four and a Tier 2 to Tier 1 differential of 1.75. However, residential customers are still paying an artificially high Tier 2 rate that is nearly double that of the Tier 1 and continues to depart significantly from the current Glidepath Guidance of 1:1.405. SDG&E has been unable to follow the CPUC-approved Glidepath guidance from the Residential Rate Reform Decision due to Tier 1 capping. SDG&E has been required to delay Glidepath implementations, as well as file a Petition for

¹² R.14-07-002, Concurrence of President Michael Picker on Item 24, D.16-01-044.

¹³ D.16.01.044, pp.4.87, & 107, FOF 12.

Modification of the Decision, which was subsequently approved by the Commission, to follow the Glidepath guidance.

Given the future challenges and opportunities faced by California IOUs, some of which are described herein, the importance of establishing the “right” rate design now cannot be overstated. There will be more change within the electric industry in the next ten years than in the past 100 years – California must anticipate and prepare for this change to implement a well-conceived rate design that furthers, rather than impedes, advancement. It is crucial that as the State moves forward into the next decade, its rate design policies be carefully crafted to maintain the current momentum toward realization of a sustainable energy future that incorporates increasing amounts of DERs, including solar, energy storage, and EVs, through reliance on an advanced electric grid, while minimizing cost impacts on utility customers. Additionally, rate design based on cost-causation principles is critical to ensure that energy usage occurs in a manner consistent with electric grid conditions and provides customers with price signals to incent behavior which minimizes incremental system and local capacity needs. This is absolutely essential as new technologies continue to come online.

SDG&E has fully embraced the State’s vision of increased DER integration. For example, as of the end of 2017, SDG&E had over 1,027 megawatts (MW) of customer-sited solar and wind generation from over 148,000 customers, an increase of approximately 227 MW from 2017. On January 26, 2018, the Governor issued an executive order formalizing a target of 5 million EVs on California’s roads by 2030.¹⁴ As of February 1, 2018, SDG&E customers have adopted approximately 27,000 EVs within its service territory, and on January 20, 2017, SDG&E filed its Application for Authority to Implement Priority Review and Standard Review Proposals to Accelerate Widespread Transportation Electrification (TE) that will help meet the goals of SB 350.¹⁵ In January 2018, the Commission approved several of SDG&E’s priority projects, which will benefit all ratepayers through GHG emission reduction through SDG&E efforts to own and operate various types of electric vehicle supply equipment in a variety of private and public venues that will increase the

¹⁴ California Executive Order B-48-18

¹⁵ A. 17-01-020

sale of EVs in the area.¹⁶ However, to meet the Governor’s goal of 5 million EVs by 2030, SDG&E will need to plan for mass adoption of these vehicles, which includes both infrastructure and rates that provide the correct price signals to ensure grid sustainability and reliability. Therefore, the CPUC will need to be extremely mindful in how it incentivizes the State’s goals, so as not to exacerbate the current cost shift burden on non- DER participating customers. In support of Governor Brown’s goal, SDG&E filed an application on January 22, 2018 with the CPUC seeking approval to implement a medium-duty and heavy-duty electric vehicle charging infrastructure program and a vehicle-to-grid electric school bus pilot. The charging infrastructure program will support charging for approximately 3,100 electric vehicles. In addition, SDG&E filed an application on July 30, 2018 with the CPUC seeking approval to implement a light duty electric vehicle charging infrastructure program at state parks and beaches, and city and county parks. The School pilot seeks to install 196 charging units (184 Level 2 [“L2”] and 12 DC Fast Chargers [“DCFCs”]) at 30 school facilities and educational institutions. The Parks Pilot seeks to install, in consultation with the CA DRP, 74 chargers at 12 state parks and beaches, expanding charging opportunities at public locations. SDG&E, however, only has one state park within a DAC. Thus, to maximize the impact on DACs, SDG&E is also proposing to install EV chargers at 10 city and county parks.

In addition, the procurement plan set forth in Decision (D.) 13-10-040 in Rulemaking 10-12-007 *Order Instituting Rulemaking Pursuant to Assembly Bill 2514 to Consider the Adoption of Procurement Targets for Viable and Cost-Effective Energy Storage Systems* contemplates that SDG&E will have 165 MW of energy storage by 2020. In line with this goal, on February 24, 2017, SDG&E unveiled the largest lithium-ion battery storage facility in the world, a 30MW facility, that can produce 120 MWh energy, capable of serving 20,000 customers for four hours. Given this rapid progress toward significant increases in DER now and continuing into the future, SDG&E submits that movement toward a more forward-thinking rate design, with more cost-based rates that provide customers with accurate price signals, is critical.

As we evolve from a world where all customers receive “full service” from the utility, to one in which there is an abundance of choices available to customers for the

¹⁶ Application of SDG&E for Approval of SB 350 Transportation Electrification Proposals, SDG&E Chapter 3, Direct Testimony of Randy Schimka, RS-1.

various elements of service previously solely provided by the utility (i.e., rooftop solar for a portion of their energy needs, batteries for “banking”, commodity services from Community Choice Aggregators (“CCA”)), the need for accurate price signals that truly reflect the cost of the variety of services provided is critical. Additionally, as the State moves towards Zero Net Energy (ZNE) structures, the Commission will need to consider what cost recovery mechanisms are appropriate. A fully volumetric rate will allow for maximum bypass of costs, which are then shifted to other customers. The California Energy Commission’s energy forecast for SDG&E continues to predict a sales decline in the near term, as energy efficiency increases, and levels of renewable generation remain high. This fact alone will cause upward rate pressure on all customer classes. Allowing bypass and non-transparent subsidies to perpetuate will shift costs to an even smaller pool of customers.

Additionally, as available customer choices increase, including the introduction of CCAs in SDG&E’s service territory, the retrospective costs of long-term procurement contracts will be shifted to a smaller number of customers, increasing SDG&E’s rates. It would be an unfair practice to impose all costs on a small number of customers, simply because customers have an increasing number of choices. Achieving the State’s energy policy goals in a sustainable manner requires breaking dependencies upon flawed rate design which creates cost shifts and results in indirect and at times unintended subsidies. RMI’s report, *Net Energy Metering, Net Zero Energy and the Distributed Energy Resource Future*, identifies the critical role that unbundling of rate design will play in achieving a 21st century utility business model. A rate structure that ensures that the prices customers see accurately reflect the cost of services provided, will “unleash new investments and innovations in DERs,” and will help to ensure that deployment of DER resources occurs in a manner that benefits the system as a whole.¹⁷ Current rate design is only part of the way there. Only through proper rate design can SDG&E meet all ten of the Commission’s rate design principles.¹⁸ A rate structure that is cost-based and has transparency on the services customers are paying for is critical to provide customers with the ability to tie the prices they see to the services they receive. Accurate prices are necessary for customers to

¹⁷ Future, p. 2. Available at: http://www.rmi.org/rmi_pge_adapting_utility_business_models.

¹⁸ D. 15-07-001, page 27 “3.2 The Rate Design Principles”

understand the costs of a lower carbon energy supply and for economically efficient decision-making. Such rate design changes will limit cost shifts to other customers and ensure that the benefits from incentives are maximized.

B. Overall Rate Policy

California continues to be a leader in shaping national energy policy, in particular with its adoption of a set of comprehensive policies and initiatives aimed at significantly reducing GHG. The achievement of these goals has not been blind to the potential rate and cost shift implications that these programs would have for electric utility customers. For instance, RPS goals of 33% by 2020 include a cost limitation provision "...set at a level that prevents disproportionate rate impacts."¹⁹ AB 327 requires that NEM moves forward in a manner that (i) is "based on the costs and benefits of the renewable electrical generation facility;"²⁰ (ii) ensures "total benefits of the standard contract or tariff to all customers and the electrical system are approximately equal to total costs;"²¹ and (iii) ensures "sustainable growth."²²

Utility rates recover the costs of services related to commodity resources, distribution resources, transmission resources, and the costs of public policy programs. Under SDG&E's current effective electric rates, commodity services represent 47% of total costs recovered, distribution represents 30%, transmission covers 12% and the remaining 11% represents the costs of State and Commission mandated programs.

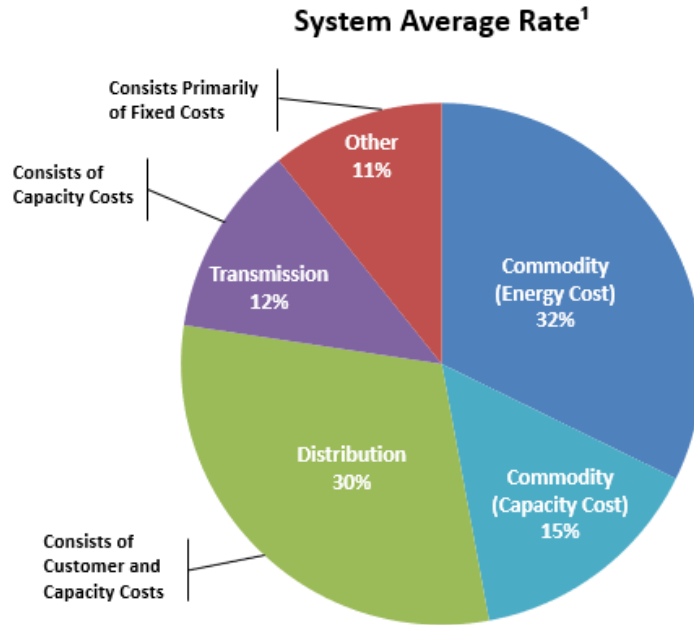
Chart 1: Breakout of System Average Rate

¹⁹ California Public Utilities Code Section 399.15 (d).

²⁰ Public Utilities Code § 2827.1 (b)(3).

²¹ Public Utilities Code § 2827.1 (b)(4).

²² Public Utilities Code § 2827.1 (b)(1).



¹Based on rates effective January 1, 2019.

When reviewing the breakdown of the cost of utility services, only Commodity Energy Costs, which represent a fraction (approximately one-third) of the services recovered in electric utility rates, are driven by the kilowatt-hour energy usage of customers (kilowatt-hours or kWh). Most of the costs to serve customers are fixed. These costs are incurred independent of customer usage (kWh) and are driven either by (1) the number of customers or (2) the capacity needs of customers, on both the system and individual circuits, which result from their maximum load or demand of the customers. Commodity energy costs vary with the volume of electricity consumed and are appropriately recovered through consumption charges. However, the remaining costs incurred by SDG&E, including distribution customer and grid-related costs, generation capacity costs, transmission, and portions of state-mandated Public Purpose Programs (PPP) do not vary with the volume of electricity consumed by customers, and therefore are fixed costs for the utility. SDG&E, as the provider of last resort, must incur these generation, transmission, and distribution costs on a scale that supports at least the minimum needs of its entire customer base, regardless of a customer's energy consumption. Recognizing the basis on which the utility must invest in these assets requires SDG&E to continue its effort to move toward appropriate cost-based rates.

In October 2013, AB 327 was signed into law. AB 327 provided among other things (1) removal of constraints to rate design previously legislated by AB 1X and SB 695 to allow changes to residential rate structures, and (2) legislative requirements for the NEM successor tariff. Since the signing of AB 327, progress has been made to move towards rates that better reflect the cost of services provided, but future work is still needed in order to achieve this goal. In the Residential Rates Order Instituting Rulemaking (RROIR), R.12-06-013, the Commission adopted the following ten Rate Design Principles (RDP) for rate design. While the RROIR was limited to residential rate design, SDG&E believes these principles should guide the rate design for all customer classes. Table 1 below presents the RDPs in the four categories consistent with D.15-07-001: cost of service, affordable electricity, conservation and customer acceptance.

Table 1: Rate Design Principles

Cost of Service RDP	Affordable Electricity RDP	Conservation RDP	Customer Acceptance RDP
(2) Rates should be based on marginal cost; (3) Rates should be based on cost-causation principles; (7) Rates should generally void cross-subsidies, unless the cross-subsidies appropriately support explicit state policy goals; (8) Incentives should be explicit and transparent; (9) Rates should encourage economically efficient decision-making.	(1) Low-income and medical baseline customers should have access to enough electricity to ensure basic needs (such as health and comfort) are met at an affordable cost.	(4) Rates should encourage conservation and energy efficiency; (5) Rates should encourage reduction of both coincident and non-coincident peak demand.	(6) Rates should be stable and understandable and provide customer choice; (10) Transitions to new rate structures should emphasize customer education and outreach that enhances customer understanding and acceptance of new rates, and minimizes and appropriately considers the bill impacts associated with such transitions.

While the RDPs from D.15-07-001 provide clear direction that rate design should be cost-based (RDP 2 and 3) and incentives should be transparent (RDP 7 and 8), significant progress still needs to be made to achieve those goals.

When reviewing the status of Residential Rate Reform, the Commission approved in RROIR, among other things, (1) the glidepath for tier consolidation to a two-tiered rate with

a tier differential of 25% by 2019²³; (2) the glidepath for the average California Alternate Rate for Energy (CARE) effective rate to reach legislative compliance levels of 35% in 2020 which included the restructuring of the CARE discount to move the rate subsidies into a single line item discount for greater transparency; and (3) default time-of-use (TOU) rates for residential should begin in 2019.²⁴ The implementation of the consolidation of residential tiered rates began in 2015 and was supposed to provide relief for higher-tier rates. And while SDG&E residential customers have seen significant structural changes to residential tiered rates moving from 4-tiered rates to 2-tiered rates, the burden on Tier 2 rates has continued to the present day with Tier 2 rates still nearly double Tier 1 rates.²⁵ SDG&E's current D.15.07-001 glidepath has been unable to provide upper tier relief due to the additional constraints surrounding increases to Tier 1 rates.

While RROIR focused on the rate design for residential customers, in NEM 2.0, the emphasis included considerations for sustainable DER growth. However, the rate design needed to meet those objectives follows the same guidance as is needed to meet the policy objectives in RROIR – both require a rate design that reflects accurate prices and, where incentives are needed, that are direct and transparent. Only with a rate design that reflects accurate prices and direct, transparent incentives can there be a path for sustainable growth for all DER technologies in a manner that minimizes cost shifts to non-participating customers. A rate design that reflects accurate prices and transparent incentives balances opportunities to save with increasing complexity of rates, and is necessary to provide a platform for utility customers to make economically efficient decisions in their investments in energy resources; that is, choices for investments in energy efficiency (EE), demand response (DR), and DER are done so with proper information (i.e., based on accurate price signals).

Under a TOU rate, cost-based TOU differentials result from the average price for marginal energy in the period and the occurrence of generation capacity need in the period with the on-peak period defining the high-cost hours for commodity services. A properly-defined on-peak period appropriately captures high-cost hours and delivers accurate price signals to customers. Improperly defined on-peak periods result in cost shifts between

²³ This includes the introduction of a Super-User Electric (SUE) Surcharge for usage above 400% of baseline in 2017.

²⁴ Page 172. This is conditional upon the findings required by Section 745(d).

²⁵ Current tier 2 to tier 1 differential is 1.75305 for electric rates effective as of 1/1/2019

customers, wrong incentives as when to consume electricity, exacerbation of ramping needs and overall higher system costs, which lead to higher rates for all customers. Since the definition of TOU periods is intended to provide customers with accurate information regarding the high-cost and low-cost periods for commodity services, TOU period definitions should be the same for all customers because the cost of providing commodity services does not vary by customer class.²⁶ While the approval of a change in TOU periods in SDG&E's recent GRC Phase 2 is a step in the right direction, grandfathered TOU customers continue to receive the wrong price signals, which will further delay California's clean energy future. In addition, pursuant to Ordering Paragraphs (Ops) 1 and 7 of the GRC Phase 2 D.17-08-303, SDG&E revised its electric tariffs to reflect a five-month summer (June-October) rate season and a seven-month winter (November-May) rate season effective December 1, 2017.

TOU rates provide opportunities for customers to save through increased control over energy use, but also present a higher level of rate complexity. More control over energy use will also provide consumers with more stable bills and a higher level of predictability. SDG&E strives to strike a balance between these ratemaking tools, providing customer choice/opportunities to save and complexity of rates. As technological innovation advances, the average customer becomes more sophisticated and engaged, providing a prime opportunity for SDG&E to transition to more cost-based rates by partnering and balancing additional consumer control with increased complexity. Moving toward cost-based rates advances SDG&E's goal of providing fair and equitable rates to all customers (RDP 7) where each customer pays their real cost of service and minimizes the cost shift subsidies that occur under the current rate structure. These changes partnered with outreach and education is necessary to ensure that the Customer Acceptance principles of RDPs are satisfied and customers understand their choices.

For TOU periods to be effective in aligning costs, TOU period definitions should provide a group of high-cost hours in the on-peak period, low-cost hours in the super-off peak period, with mid-cost hours in the "mid-peak" period. Following this guidance will create customer price signals that align with the high-cost and the low-cost generation periods for the utility, and thereby incent economically-efficient behavior by the customer

²⁶ Exhibit SDG&E-1 (at p. 22).

(e.g., shifting energy usage to low-cost time periods and avoiding usage during high-cost time periods) that also results in reduced system costs. SDG&E’s Mass TOU Default rates approved in its 2018 Residential RDW are 3-period, more cost-based rates that send customers the correct price signals.²⁷ Under a TOU energy-only rate like SDG&E’s approved Mass TOU Default rate, a cost-based TOU differential results from the average price for marginal energy in the period and the occurrence of generation capacity need in the period. Additionally, it is important that all customers have the same TOU periods. Incorrectly defined TOU periods, i.e., an on-peak period that fails to accurately capture cost hours, whether through grandfathering of TOU periods that maintain outdated “specialty” TOU periods that are different for different customers, or no change or limited change to TOU periods – will have the same result of failing to provide customers with TOU rates that accurately reflect their actual cost-of-service, thereby providing customers with inadequate price signals to incent low-cost behavior and less opportunity to save on their bills with changes in energy consumption and behavior.

The IOU’s 2018 Residential RDW is also to address fixed charges for residential customers no sooner than 2020,²⁸ contingent upon the development of consistency in fixed charge calculation methodologies across the IOUs. In order for rates to be truly cost-based, costs should be recovered in the same manner in which they are incurred. For residential customers, this means shifting some costs from volumetric rates to fixed costs, resulting in a *more* cost-based rate. On October 4, 2017, the Commission issued its Decision Identifying Fixed Cost Categories to be Included in a Fixed Charge. For residential customers, certain marginal distribution customer costs, as well as the minimum observable costs for transformers and meters, were determined to be eligible for recovery in a proposed residential fixed charge. SDG&E proposed a residential fixed charge in its 2018 RDW that is designed to recover these costs in a manner that is fair to all customers. This addition of a residential fixed charge will ensure all customers are paying for their minimum level of service and will further move residential rates toward a more cost-based design. It is also important to note that a residential fixed charge would not be incremental but would result in a corresponding reduction of SDG&E’s artificially high volumetric rates. Phase III of the

²⁷ D.18-12-004.

²⁸ Fixed charges can be implemented with an effective date at least one year after the start of default TOU. D. 15-07-001 Page 193.

2018 Residential RDW will consider the IOU's proposals for fixed charges and/or minimum bills.²⁹

In the 2020 Triennial Cost Allocation Proceeding (TCAP) application, filed on July 31, 2018, (A.18-07-024), SDG&E has proposed a gas residential customer charge to align residential natural gas rates more closely with the underlying costs of serving residential customers. Currently, SDG&E's gas residential rates have a minimum bill, and a two-tiered volumetric charge with a higher second tier rate. The customer charge (the charge a customer incurs at zero level of gas consumption) is to recover the fixed cost of hooking up a customer to SDG&E's gas delivery system. These fixed costs include installation and maintenance of the gas service lines, meters, regulators, meter reading, customer billing, maintenance of facilities, and vehicles and equipment. The portion of fixed customer costs that are not recovered in the customer charge are recovered in the volumetric rates, causing volumetric rates to be higher than the underlying variable (with respect to gas volume consumption) costs. Therefore, in the 2020 TCAP application, SDG&E has proposed to implement a residential customer charge of approximately \$10/month (replacing the current approximately \$3/month minimum bill) while at the same time reducing volumetric rates. Having a cost-based higher customer charge and lower volumetric rates are likely to lower volatility in month-to-month customer bills caused by volatility in weather conditions in winter months.

C. Management Control of Rate Components (Utility Management's Policy to Control Costs and Control Rate Increases for Customers)

SDG&E's rate components can be broken down into the following broad categories of services that they provide:

- *Generation service* – provision of energy service, including reliability and ancillary services. The costs associated with generation services are, in

²⁹ D.18-05-011, pp.4

addition to the costs of providing energy services to meet provider-of-last-resort customer load, heavily compliance driven - both legislative compliance (i.e., RPS) and regulatory compliance from various regulatory agencies (i.e., GHG under ARB).

- *Transmission service* – provision of system delivery and reliability. These costs are addressed at the Federal Energy Regulatory Commission (FERC).
- *Distribution services* – provision of local delivery and reliability and customer services.
- *Public Policy Programs*.

Additionally, power quality requires the coordination of distribution, transmission and generation resources. All changes to SDG&E's revenues recovered through rates or the recovery structure through which revenues are collected are subject to the authority of the CPUC or the Federal Energy Regulatory Commission (FERC) as a regulated entity.

D. Utility's Policies and Recommendations for Limiting Costs and Rate Increases While Meeting State's Energy and Environment Goals for Reducing Greenhouse Gases

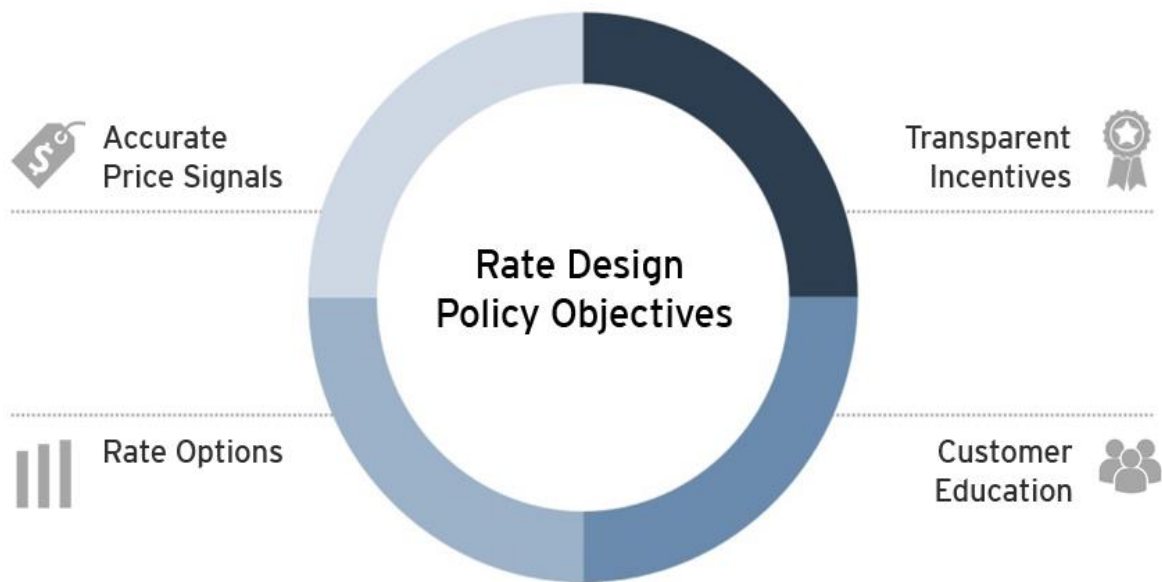
1. List the Policies the Utility is Advocating

SDG&E recommends the following policies for limiting costs and rate increases while meeting the State's energy and environment goals for reducing GHG:

1. **Accurate price signals:** Providing customers with accurate price signals means that utilities charge for the services they provide and rates are designed to recover costs on the same basis by which they are incurred. By sending customers clear price signals regarding the cost of electricity and the cost of using the electric grid for the services they receive, SDG&E aims to give customers the best possible opportunity to make wise decisions about their energy use and to mitigate cost shifts between customers.
2. **Transparent incentives:** Incentives or subsidies that have been deemed necessary to further public policy objectives are separately and transparently identified. Cost-shifting is exacerbated with incentives that are buried in rates and not transparently identified. Building upon the foundation of accurate price signals, subsidies that advance state policy goals should be transparently identified in utility bills, separate from the charges for services provided to or from the customer. SDG&E believes that the departing load indifference principle should be a best practice when moving forward with future proceedings to continue moving toward fair and equitable rates that reflect the real utility cost of service.

3. **Customer options:** SDG&E believes that a critical aspect of SDG&E’s policy framework is to balance the needs of customers while still providing a cost-based rate structure. SDG&E recognizes the importance of continuing to offer customers new cost-based rate options that best meet their needs, and that providing the opportunity for customers to adopt rates that allow more customer choice and control should be balanced with increasing complexity of rates.
4. **Transition paths to minimize impacts and inform customers:** SDG&E is committed to proactively providing customers with clear and timely information to help customers prepare for any rate change. SDG&E believes that implementing rate design changes in transitional phases: (i) helping to minimize customer impacts and (ii) providing the best opportunity for customers to progressively gain more control, and become more engaged and informed about the choices that are available to them.

SDG&E’s four policy objectives are summarized in the diagram below:



2. Provide recommendations for the CPUC and Legislature to help minimize rate increases in the future

In 2019, SDG&E makes the following recommendations for minimizing rate increases into the future:

1. Rate Reform Glidepath with continued Expeditious Implementation

2. Implementation of a Residential Fixed Charge one year after Mass TOU Default
3. Reconsideration of the Composite Tier
4. Cost-Based Rates to Reduce Cross Subsidies
5. Increase Transparency of Subsidies

Under AB 327, the Legislature has made significant strides in providing a framework that provides the guidance and direction for a rate design structure for the future that meets the state's energy and environmental goals while minimizing rate increases in the future addressing, among other things, residential rate structures, NEM reform, and introducing distribution level resource planning. SDG&E recommends that the Commission take this opportunity to continue the effort already taken by the Legislature to continue to move forward with a cost-based rate structure and transparent incentives that allows for customers to accurately assess alternative energy services on a competitive basis. In addition, only with cost-based rate structure and transparent incentives can a clean energy future be supported without artificially inflating customer rates resulting from subsidies buried in rate design.

AB 327 permitted the reform of residential rate structures to reduce tier differentials and allow for the consideration of residential fixed charges, and under the direction of the Commission progress is under way. On September 1, 2015, SDG&E implemented AL 2783-E, which was the first step of the Commission's approved glidepath for residential rates pursuant to D.15-07-001 that begins the path to a two-tiered rate with a 25% tier differential by consolidating tiers 3 and 4. On July 1, 2016, SDG&E implemented the second step with AL 2861-E-A, which included moving to a 2-tiered residential rate. In 2016, all three IOUs implemented optional residential TOU pilots intended to inform residential customers default to TOU rates. SDG&E submitted AL-3033-E on January 13, 2017, to implement the next phase of the glidepath in compliance with R.12-06-013, which includes the High-Usage Charge (HUC) for energy use about 400% of baseline. This AL shows that SDG&E is unable to achieve the adopted glidepath tier differentials under the current Tier 1 cap. SDG&E withdrew AL 3033-E on February 7, 2017. Subsequently, SDG&E, along with Pacific Gas and Electric (PG&E) and Southern California Edison (SCE), submitted a Joint IOU Petition for Modification (PFM) of D.15-07-001 on February

1, 2017 to request that the Commission modify the Decision to allow for modification of the Tier 1 cap, which currently prohibits SDG&E from timely achievement of the adopted glidepath.³⁰ The Commission approved the Joint IOUs' PFM, and on September 1, 2017, SDG&E implemented the next step in its glidepath, narrowing tier differentials. Consistent with Resolution E-4870, SDG&E implemented its High Usage Charge on November 1, 2017. Summer 2018 was the first instance where SDG&E's residential customers experienced a summer season in which they could be potentially impacted by the High Usage Charge. Unfortunately, the combination of the High Usage Charge and an unprecedented and sustained heatwave during the summer of 2018 resulted in extreme bill volatility for a significant number of SDG&E's residential customers. The two key factors not originally contemplated by D.15-07-001 – the extremely high temperatures in Summer 2018 and complications in achieving tier differential reductions as envisioned by SDG&E's glidepath – have exacerbated residential customers' experiences with the High Usage Charge. Therefore, on November 30, 2018, SDG&E submitted a PFM of D.15-07-001 and D.17-07-006 to request suspension of the High Usage Charge ("HUC") that the commission approved in D.15-07-001, as modified by D.17-07-006. Pending resolution from the Energy Division, SDG&E plans to implement its 2018 and 2019 Glidepaths on April 1, 2019 and November 1, 2019, respectively.

SDG&E continues to have concerns about future upward rate pressures. Current tier differentials continue to result in Tier 2 rates nearly double of Tier 1 rates, and delaying the implementation of the adopted glidepath or implementation of a residential fixed charge will allow this burden to continue. Rate relief through Residential Rate Reform was promised over three years ago; SDG&E's customers have yet to see the promised benefits of tier consolidation and the glidepath reflected in their bills. SDG&E recognizes the need to balance the needs of Tier 1 customers with upper tier relief, and believes that more reform is needed to achieve true rate reform. In addition to the glidepath, tier consolidation, and default TOU, SDG&E recommends that the Commission continue the trend toward cost-based rates and allow for the implementation of a residential fixed charge. Given that the majority of SDG&E's costs to provide service are fixed, a portion of residential costs should be recovered through fixed charges. Fixed charges could help to provide rate relief

³⁰ Joint Reply of SDG&E, PG&E, and SCE to Responses to Joint Petition for Modification of D.15-07-001, pp.2-3.

by reducing volumetric rates and providing stability to customers' bills.

SDG&E fully supports the State's pursuit for a clean energy future. SDG&E simply cautions the Legislature and the Commission to ensure that the pursuit of this clean energy future is done in a thoughtful manner that always takes into consideration the rate and bill implications to utility customers before adopted.

SDG&E has a multitude of goals and objectives, such as RPS standard, EE and DR goals, and Energy Storage targets in line with the State's clean energy goals. The greater flexibility the Commission provides the IOUs in the manner in which these tools are used to reach the State's objectives and meet the unique characteristics of each service territory, the greater the ability the IOUs will have to meet these goals in a least cost manner. In addition, SDG&E recommends that the Legislature and the Commission ensure that the costs of programs and technologies that help achieve its clean energy goals are paid for equitably by all customers and limit the ability for customers to bypass paying for their fair share of these programs.

AB 327 recognized the importance in addressing potential rate and cost shift implications of NEM by including requirements that it move forward in a manner that (i) is "based on the costs and benefits of the renewable electrical generation facility;"³¹ (ii) ensures "total benefits of the standard contract or tariff to all customers and the electrical system are approximately equal to total costs;"³² and (iii) ensures "sustainable growth."³³ The Assigned Commissioner Ruling of Commissioner Peterman issued on September 14, 2016 in R.13-11-007³⁴ (ACR) in relation to SB 350 – Transportation Electrification – has acknowledged that "simply shifting costs to other ratepayer classes does not comport with cost causation rate design principles and may not be a viable solution."³⁵ SDG&E agrees that simply shifting costs to other non-participating customers does not provide a sustainable solution. Given the importance of a cost-based rate structure to provide the price signals to encourage charging to occur in a manner that is consistent with grid conditions, the cost shift associated with NEM customers of today will continue.

³¹ PUC Section 2827.1(b)(3).

³² PUC Section 2827.1(b)(4).

³³ PUC Section 2827.1(b)(1).

³⁴ Assigned Commissioner's Ruling Regarding the Filing of the Transportation Electrification Applications Pursuant to Senate Bill 350 (September 14, 2016).

³⁵ ACR at 20.

As the Commission continues to move forward in pursuit of clean energy goals and fair and transparent rates for all ratepayers, the question of cost shift to non-participating customers must be addressed.