PACIFIC GAS AND ELECTRIC COMPANY
Energy Efficiency 2018-2025 Rolling Portfolio Business Plan
Application 17-01-015
Data Response

PG&E Data Request No.:	TURN_002-**Q01**		
PG&E File Name:	EnergyEfficiency2018-2025-RollingPortfolioBusinessPlan_DR_TURN_002-Q01		
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PG&E Witness:	Halley Fitzpatrick	Requester:	Hayley Goodson

SUBJECT: PG&E 2018-2025 EE ROLLING PORTFOLIO BUSINESS PLAN & BUDGET. TURN DATA REQUEST TURN-PG&E-02.

ENERGY EFFICIENCY POLICY REQUESTS

QUESTION 1

Regarding PG&E's Response to TURN-PG&E-01, Q 1:

a. Provide examples of programs or measures "that demonstrate[] benefits beyond energy savings," other than the Home Upgrade Program, for which PG&E believes it would be appropriate to remove project-related non-energy costs from the TRC.

b. For the Home Upgrade Program and any other program or measure identified in your response to part "a", please indicate the magnitude of project-related non-energy costs that PG&E would remove under its proposal, as well as the basis for that quantification, and provide PG&E's estimate of the change in program and/or measure cost-effectiveness that would result from removing project-related non-energy costs.

ANSWER 1

a. Industrial and manufacturing process measures can yield non-energy benefits such as reduced operation and maintenance costs. HVAC upgrades in non-residential facilities, such as offices, retail, hospitality, can provide improved thermal comfort or indoor air quality.

PG&E, along with the other IOUs, recently proposed a method to reduce measure costs for a measure in cases where measure costs exceed the sum of expected bill savings and incentives in the Joint Utility Opening Comments on IDER Interim Greenhouse Gas Adder Ruling[1] on April 17, 2017.

A summary of the approach, as provided in PG&E's comments is below:

[1] Administrative Law Judge's Ruling Requesting Comment On An Interim Greenhouse Gas Adder dated April 2, 2017

> The Commission could assume that customers are rational and undertake projects that provide a net benefit to them, where these benefits take the form of energy savings, incentives, and NEIs [non-energy impacts]. Since NEIs vary by measure and are very difficult and resource intensive to estimate, the Commission should instead focus on isolating the value of the energy benefits and incentives as a proxy for the energy-related costs. To do this, one can compare the present value of energy benefits, plus incentives, and project measure costs where the present value of the energy benefits and incentives is subtracted from the existing measure costs. In cases where the remaining costs (the assumed costs of the NEIs) are positive, the present value of the energy benefits and incentive would be used in lieu of the measure costs. In cases where the remaining costs are negative (the energy benefits outweigh the measure costs), existing measure costs would be used. Aside from offering a sound theoretical basis for addressing participant NEIs, this approach can be implemented using existing tools, as the present value of the energy benefits of the project and incentive is the benefits portion of the participant cost test and can be calculated using the average rate, which is included in the EE cost-effectiveness calculator.

Using a simplified[2] version of the proposal, PG&E calculated the TRC impact of this method to all programs and claims for program year 2016. This method, using a simplified approach, results in significant (>10%) TRC cost reductions for the following programs.

PGE21025 CALIFORNIA WASTEWATER PROCESS OPTIMIZATION
PGE21004 ENERGY UPGRADE CALIFORNIA
PGE2110012 UNIVERSITY OF CALIFORNIA/CALIFORNIA STATE UNIVERSITY
PGE21011 COMMERCIAL CALCULATED INCENTIVES
PGE21005 RESIDENTIAL NEW CONSTRUCTION
PGE210130 CLEAResult AERCx
PGE210135 WATER INFRASTRUCTURE AND SYSTEM EFFICIENCY
PGE21021 INDUSTRIAL CALCULATED INCENTIVES
PGE21039 COMPREHENSIVE FOOD PROCESS AUDIT & RESOURCE EFFICIENCY PGM
PGE21015 COMMERCIAL HVAC
PGE210126 K-12 PRIVATE SCHOOLS AND COLLEGES AUDIT RETRO

b. Using the simplified proposed method in the joint IOU proposal applied to the 2016 PG&E portfolio[3], the total reduction in the portfolio TRC costs would be approximately $40M (or 7% or portfolio TRC costs). The below list shows how each individual program's TRC costs would be reduced by this method change.

Reduction	Program ID	EEGA DESCRIPTION
46%	PGE21025	CALIFORNIA WASTEWATER PROCESS OPTIMIZATION

2 The proposal includes NPV calculations, which were not used here. This analysis did not account for: time value of money, changes in energy costs over time, or the rate schedule associated with each claim. We would expect that those would be considered if this or a similar method is adopted. The blended average utility rate that was used in PG&E's 2017 ABAL was used for all claims to determine estimated bill savings.

3 The cost effectiveness calculations were performed using the same underlying data as used for the 2016 Annual Report.

Reduction	Program ID	EEGA DESCRIPTION
35%	PGE21004	ENERGY UPGRADE CALIFORNIA
23%	PGE2110012	UNIVERSITY OF CALIFORNIA/CALIFORNIA STATE UNIVERSITY
18%	PGE21011	COMMERCIAL CALCULATED INCENTIVES
17%	PGE21005	RESIDENTIAL NEW CONSTRUCTION
14%	PGE210130	CLEAResult AERCx
12%	PGE210135	WATER INFRASTRUCTURE AND SYSTEM EFFICIENCY
12%	PGE21021	INDUSTRIAL CALCULATED INCENTIVES
11%	PGE21039	COMPREHENSIVE FOOD PROCESS AUDIT & RESOURCE EFFICIENCY PGM
11%	PGE21015	COMMERCIAL HVAC
10%	PGE210126	K-12 PRIVATE SCHOOLS AND COLLEGES AUDIT RETRO
9%	PGE211021	SIERRA NEVADA
8%	PGE21003	MULTIFAMILY ENERGY EFFICIENCY REBATES PROGRAM
8%	PGE210118	Retail Energy Efficiency
7%	PGE211022	SONOMA COUNTY
6%	PGE211025	SAVINGS BY DESIGN (SBD)
6%	PGE21032	AGRICULTURAL DEEMED INCENTIVES
5%	PGE211019	SAN MATEO COUNTY
5%	PGE211016	REDWOOD COAST
4%	PGE21027	HEAVY INDUSTRY ENERGY EFFICIENCY PROGRAM
4%	PGE211015	NAPA COUNTY
4%	PGE211023	SILICON VALLEY
3%	PGE211009	EAST BAY
2%	PGE2110011	CALIFORNIA COMMUNITY COLLEGES
2%	PGE2110051	LOCAL GOVERNMENT ENERGY ACTION RESOURCES (LGEAR)
2%	PGE210143	HOSPITALITY PROGRAM
2%	PGE211020	SANTA BARBARA
1%	PGE211007	ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS (AMBAG)
1%	PGE210129	Nexant AERCx
1%	PGE210312	Dairy and Winery Industry Efficiency Solutions
1%	PGE211011	KERN
1%	PGE210112	SCHOOL ENERGY EFFICIENCY
1%	PGE211012	MADERA
1%	PGE211024	SAN FRANCISCO
1%	PGE211014	Mendocino/Lake County
1%	PGE21041	PRIMARY LIGHTING
1%	PGE211013	MARIN COUNTY
1%	PGE211010	FRESNO
1%	PGE211007	ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS (AMBAG)
0%	PGE21012	COMMERCIAL DEEMED INCENTIVES
0%	PGE21017	BOILER ENERGY EFFICIENCY PROGRAM

Reduction	Program ID	EEGA DESCRIPTION
0%	PGE21022	INDUSTRIAL DEEMED INCENTIVES
0%	PGE211018	SAN LUIS OBISPO COUNTY
0%	PGE21018	ENERGYSMART GROCER
0%	PGE21009	DIRECT INSTALL FOR MANUFACTURED AND MOBILE HOMES
0%	PGE210123	HEALTHCARE ENERGY EFFICIENCY PROGRAM
0%	PGE21006	RESIDENTIAL HVAC
0%	PGE21034	AGRICULTURAL ENERGY ADVISOR
0%	PGE21008	ENHANCE TIME DELAY RELAY
0%	PGE21031	AGRICULTURAL CALCULATED INCENTIVES
0%	PGE_SWMEO	Statewide Marketing, Education and Outreach Program
0%	PGE21001	RESIDENTIAL ENERGY ADVISOR
0%	PGE210011	RESIDENTIAL ENERGY FITNESS PROGRAM
0%	PGE21002	PLUG LOAD AND APPLIANCES
0%	PGE21007	CALIFORNIA NEW HOMES MULTIFAMILY
0%	PGE210113	Energy Fitness Program
0%	PGE210114	Energy Savers
0%	PGE210115	RightLights
0%	PGE210119	LED ACCELERATOR
0%	PGE210128	ENOVITY SMART
0%	PGE21013	Commercial Continuous Energy Improvement
0%	PGE210131	PECI AERCx
0%	PGE210133	Staples Low Pressure Irrigation DI
0%	PGE210134	Bridges to Energy Sector Opportunities
0%	PGE210136	McKinstry Laboratory Fume Hoods
0%	PGE210137	Waypoint Commercial Outreach
0%	PGE210138	DATA CENTER AIR FLOW AND TEMP OPTIMIZATION
0%	PGE210139	SEI Energize Schools Program
0%	PGE21014	Commercial Energy Advisor
0%	PGE210140	Mazzetti Dynamic Gas Scavenging System
0%	PGE210141	Lincus Commercial Mid-Market Program
0%	PGE210142	Ameresco Intelligent Energy Efficiency Program
0%	PGE21016	Air Care Plus
0%	PGE21019	Enhanced Automation Initiative
0%	PGE210210	INDUSTRIAL RECOMMISSIONING PROGRAM
0%	PGE210211	Light Industrial Energy Efficiency
0%	PGE210212	Compressed Air and Vacuum Optimization Program
0%	PGE210213	Small Petrochemical Energy Efficiency
0%	PGE21023	Industrial Continuous Energy Improvement
0%	PGE21024	Industrial Energy Advisor
0%	PGE21026	ENERGY EFFICIENCY SERVICES FOR OIL PRODUCTION
0%	PGE21028	INDUSTRIAL COMPRESSED AIR PROGRAM
0%	PGE21029	REFINERY ENERGY EFFICIENCY PROGRAM

Reduction	Program ID	EEGA DESCRIPTION
0%	PGE210311	PROCESS WASTEWTR TREATMENT EM PGM FOR AG FOOD PROCESSING
0%	PGE21033	Agricultural Continuous Energy Improvement
0%	PGE21035	Dairy Energy Efficiency Program
0%	PGE21036	Industrial Refrigeration Performance Plus
0%	PGE21037	Light Exchange Program
0%	PGE21042	LIGHTING INNOVATION
0%	PGE21043	Lighting Market Transformation
0%	PGE21052	Appliance Standards Advocacy
0%	PGE21053	Compliance Improvement
0%	PGE21054	Reach Codes
0%	PGE21055	Planning and Coordination
0%	PGE21056	Code Readiness
0%	PGE21061	Technology Development Support
0%	PGE21062	Technology Assessments
0%	PGE21063	Technology Introduction Support
0%	PGE21071	Centergies
0%	PGE21072	Connections
0%	PGE21073	Strategic Planning
0%	PGE21081	Statewide DSM Coordination & Integration
0%	PGE21091	On-Bill Financing
0%	PGE21092	Third-Party Financing
0%	PGE21093	New Financing Offerings
0%	PGE2110013	STATE OF CALIFORNIA
0%	PGE2110014	Department of Corrections and Rehabilitation
0%	PGE2110052	Strategic Energy Resources

These reductions in TRC costs would produce increased TRC ratios. Note that updated avoided costs for program year 2017 and beyond were not used in this analysis and would alter TRC ratios as well. The table shows programs that would experience a 5% or greater improvement to the TRC ratio using this simplified method.

Program ID	EEGA DESCRIPTION	TRC 2016	ALT TRC 2016	increase
PGE21025	CALIFORNIA WASTEWATER PROCESS OPTIMIZATION	0.24	0.45	85%
PGE21004	ENERGY UPGRADE CALIFORNIA	0.17	0.27	54%
PGE2110012	UNIVERSITY OF CALIFORNIA/CALIFORNIA STATE UNIVERSITY	0.86	1.11	29%
PGE21011	COMMERCIAL CALCULATED INCENTIVES	1.32	1.62	22%
PGE21005	RESIDENTIAL NEW CONSTRUCTION	0.12	0.15	21%
PGE210130	CLEAResult AERCx	1.01	1.18	16%
PGE210135	WATER INFRASTRUCTURE AND SYSTEM EFFICIENCY	0.23	0.26	14%

PGE21021	INDUSTRIAL CALCULATED INCENTIVES	2.12	2.41	14%
PGE21039	COMPREHENSIVE FOOD PROCESS AUDIT & RESOURCE EFFICIENCY PGM	1.00	1.12	13%
PGE21015	COMMERCIAL HVAC	0.70	0.79	12%
PGE210126	K-12 PRIVATE SCHOOLS AND COLLEGES AUDIT RETRO	0.98	1.09	12%
PGE211021	SIERRA NEVADA	0.28	0.31	10%
PGE21003	MULTIFAMILY ENERGY EFFICIENCY REBATES PROGRAM	0.19	0.20	9%
PGE210118	Retail Energy Efficiency	0.63	0.69	9%
PGE211022	SONOMA COUNTY	0.89	0.96	7%
PGE211025	SAVINGS BY DESIGN (SBD)	1.07	1.14	7%
PGE21032	AGRICULTURAL DEEMED INCENTIVES	1.22	1.30	6%
PGE211019	SAN MATEO COUNTY	0.55	0.58	6%
PGE211016	REDWOOD COAST	0.27	0.28	6%

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PG&E Witness:	Halley Fitzpatrick	Requester:	Hayley Goodson

SUBJECT: PG&E 2018-2025 EE ROLLING PORTFOLIO BUSINESS PLAN & BUDGET. TURN DATA REQUEST TURN-PG&E-02.

ENERGY EFFICIENCY POLICY REQUESTS

QUESTION 2

In PG&E's Response to TURN-PG&E-01, Q 2, PG&E clarifies its request that the Commission "provide for measure lives of up to 30 years in DEER and IOU Workpapers, as well as in valuation tools that extend to 30 years," applicable to both removed equipment (for early requirement purposes) and new equipment, and also indicates its belief that "numerous building shell and HVAC measures have EULs in excess of 20 years."

a. If the Commission adopts PG&E's proposal, and PG&E successfully extends EULs for the measures it believes have EULs beyond 20 years through the EM&V and ex ante approval processes, how would these changes impact PG&E's estimate of its 2018-2020 portfolio TRC cost-effectiveness? Provide preliminary estimates of the TRC impact.

b. Would a 30-year maximum EUL policy change the composition of PG&E's 2018-2020 portfolio? If so, how?

c. Would PG&E support or oppose a policy maintaining the current EUL limits for "to code" installations but extending EULs beyond 20 years for above code measures or projects? Why or why not?

ANSWER 2

a. Due to limitations of the CET, we were only able to run a scenario of 28 year EUL for Envelope and HVAC measures (2017 avoided costs are applicable starting 2018 and the CET avoided costs end year is 2046 allowing max EUL =28 instead of 30). The result was that the EE Portfolio TRC would increase by 29% (without C&S) and by 10% (with C&S). Detailed results can be found in the **attachment**.

Atch01_EUL28 Results_Q02.xlsx

b. With a more realistic EUL for Envelope and HVAC measures, more realistic benefits can be applied to those end uses PG&E could implement more of these measures in our Residential, Public and Commercial programs. This would be one of many changing inputs we would consider when planning our portfolios in the future.

c. There is not enough information presented to determine whether PG&E would support such a policy, but on the surface PG&E would oppose this. EULs are intended to represent how long savings will persist and they impact the lifecycle savings reported to the CPUC, CEC, and others. Manipulating the EUL (to drive behavior otherwise unrelated to EUL) may reduce the integrity of the reported savings claims. If the EULs were adjusted for "to-code" and "through-code" measures based on data (such as EM&V results), PG&E could support this approach.

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SUBJECT: PG&E 2018-2025 EE ROLLING PORTFOLIO BUSINESS PLAN & BUDGET. TURN DATA REQUEST TURN-PG&E-02.

ENERGY EFFICIENCY POLICY REQUESTS

QUESTION 3

Regarding PG&E's Response to TURN-PG&E-01, Q 9(b)(i): Please identify the dollar amount of incentives paid in 2016 to each manufacturer identified for Lighting, HVAC, and PLA.

ANSWER 3

Please find below the 2016 incentives requested for Lighting, HVAC, and PLA programs. Incentives for lighting and HVAC programs are per manufacturer. In 2016, the PLA program only collected manufacturer information for Point of Sale rebates, so the total for mail-in and eRebates are listed separately.

Lighting	
Broada, Inc.	$338,492
Bulb Star	$555,560
Commercial Electric	$124,947
Cordelia Lighting	$426,108
Cree, Inc.	$106,373
Feit Electric	$4,672,985
Greenlite Lighting Corporation	$73,920
Halo	$385,084
Lithonia Lighting	$10,334
MaxLite	$185,376
Optolight	$1,763,158
Philips	$209,296
PLUSRITE	$88,270
Sunbeam	$457,094
sunrise	$449,368

UNINEX	$64,903
Total	**$9,911,269**

HVAC	
Air Cold Supply	$3,027
Air Treatment	$504,938
CFM Equipment Distributors	$27,760
Conservation Mechanical System	$0
DMG Corporation	$0
DMG North	$360,434
Ferguson Heating and Cooling	$3,012
Heating & Cooling Supply	$383
Johnson Controls Folsom	$34,649
Johnson Controls Hayward	$191,109
Lennox Industries	$307,361
Norman S Wright	$1,180,988
Norman S Wright Climatec	$9,817
NSW Duckworth	$203,931
Sigler	$1,024,453
Specialty AC Products	$1,503,609
Trane Commercial	$253,835
US Air Conditioning	$3,135
Total	**$5,612,439**

PLA	
FLUIDRA	$25,600
GE	$5,500
HAYWARD	$12,100
Kenmore	$3,600
NIDEC	$600
PENTAIR	$141,700
Manufacturer, Unknown	$360,200
Rheem	$29,800
STA-RITE	$100
Mail-in/eRebate	$860,000
Grand Total	**$1,439,200**

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SUBJECT: PG&E 2018-2025 EE ROLLING PORTFOLIO BUSINESS PLAN & BUDGET. TURN DATA REQUEST TURN-PG&E-02.

ENERGY EFFICIENCY POLICY REQUESTS

QUESTION 4

Regarding PG&E's Response to TURN-PG&E-01, Q 14(c):

a. PG&E indicates that 29% of projected net kWh savings from "Indoor Lighting" will come from CFLs. In response to TURN-PG&E-01, Q 14(b), PG&E indicated that 9% of net kWh portfolio savings will come from "Indoor General Lighting" and that 20% of net kWh portfolio savings will come from "Indoor General CFL Lighting." Please clarify whether the total portfolio % of net kWh savings expected from CFLs is 20% ("Indoor General CFL Lighting") plus the portion of "Indoor General Lighting" savings from CFLs (29% of 9% of total portfolio net kWh), for a total CFL contribution of 22.6 % of net kWh.

b. Is it correct that PG&E expects more than 100 net GWh per year across 2018-2020 from CFLs? Please provide PG&E's estimate of CFL net kWh annual savings from 2018-2020, as assumed in its Business Plan.

c. Please confirm that PG&E expects LEDs to provide 6.3% of total portfolio net kWh savings, calculated as 70% of savings from "Indoor General Lighting" which provides 9% of total portfolio net kWh savings.

d. Table 44 on page 59 of the DNV-GL "Impact Evaluation of 2015 Upstream and Residential Downstream Lighting Programs" (April 1, 2017) shows total ex post gross savings from CFL measures in PG&E's evaluated Upstream Lighting Program in 2015 of approximately 14 GWh. Please discuss PG&E's expected savings from CFLs in 2018-2020 (more than 100 net GWh from all lighting programs) in light of this result, including PG&E's expected savings from upstream versus downstream CFL measures and any other factors supporting the reasonableness of PG&E's 2018-2020 expectations.

e. Please reconcile PG&E's expectations for CFLs in 2018-2020 with the conclusions and recommendations presented in Section 8.1.2 of the DNV-GL "Impact Evaluation of 2015 Upstream and Residential Downstream Lighting Programs" (April 1, 2017) on pages 120-121.

ANSWER 4

a. This is correct.

b. The Business Plan cost effectiveness calculation resulted in 120 GWh of savings from CFLs, which represents average savings PG&E anticipates in the short-term. This is calculation is meant to be directional only, and precise technology forecasts will be presented in the Annual Budget Advice Letters.

c. This is correct.

d. PG&E's Business Plan was filed in January 2017, well before the draft DNV-GL report was issued in April. Therefore, PG&E did not include these findings in its Business Plan. PG&E may include these findings, once finalized, in future cost-effectiveness filings (i.e., 2018 Annual Budget Advice Letter), if the data presented in the ex post evaluation is incorporated into updates to ex ante savings values. However, PG&E is not confident in our ability to act on the findings in the referenced DNV-GL report as the CPUC ex ante team generally rejected the findings of the referenced DNV-GL report in a [draft] disposition on screw-in LED lamps. Please see "COMPREHENSIVE WORKPAPER DISPOSITION FOR: SCREW-IN LAMPS; Revisions to Disposition Originally Issued on March 1, 2017" for the CPUC's consideration of the DNV-GL report.

PG&E's Business Plan cost effectiveness forecast was based on approved ex ante savings values, informed by savings opportunities identified in the Potential and Goals Study. Additionally, PG&E used the approved TRC/PAC test to derive its cost-effectiveness forecast, and notes the various challenges that arise in devising a cost-effective portfolio. As such, incorporating CFLs and lighting is paramount to forecasting a cost-effective portfolio. However, PG&E recognizes that opportunities exist for improvements to the TRC test, and has made various recommendations to update the cost effectiveness calculation methodology in the Business Plan, See, for instance, Portfolio Overview chapter pp. 45-47. Furthermore, PG&E expects that the technology composition of its portfolio will evolve as we move to the third party and statewide model.

e. Please see response to Question 4.d.

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ENERGY EFFICIENCY POLICY REQUESTS

QUESTION 5

Regarding PG&E's Response to TURN-PG&E-01, Q 14(d):

a. It appears that the midstream/upstream channel is used largely for CFLs (87% of all CFL lighting), with some limited use for indoor general lighting, space heating and cooling, and space cooling (12%, 4%, and 5% of these measure categories, respectively). Is this a correct interpretation of PG&E's response?

b. Does PG&E leverage in any way, or coordinate, the relationships it has with upstream or midstream market actors through the EE portfolio in its procurement of appliances and other measures for the Energy Savings Assistance (ESA) Program? If so, please explain. If not, does PG&E think there could be additional economies of scale and scope and cost efficiencies for either the EE portfolio or the ESA Program through this general approach?

c. Do the "Downstream Prescriptive Rebate," "Direct Install," and "Custom Incentive" delivery categories ever involve working with manufacturers and/or distributors through incentives and promotions? If so, please explain how this occurs for each delivery category and whether PG&E has found the upstream/midstream involvement in supporting downstream interventions to be effective. Provide any related EM&V.

d. If your answer to part "c" is NO, please explain whether PG&E has identified, or plans to identify, opportunities at the manufacture and distributor levels to promote "Downstream Prescriptive Rebate," "Direct Install," and "Custom Incentive" delivery categories. Does PG&E think there could be additional economies of scale and scope and cost efficiencies through this general approach?

e. If not addressed in your response to part “d”, please explain whether PG&E has identified or plans to investigate opportunities to coordinate interventions delivered via upstream, midstream, and downstream channels.

   i. More specifically, please clarify whether current downstream incentives and promotions (which appear to be largely commercial, industrial, agricultural, and water and waste water treatment facility equipment) also include manufacturer and distributor incentives and promotions. If so, explain how this coordination takes place as a general matter and also specifically for the top 10 non-residential measures delivered downstream (based on a ranking by number of measures). If not, confirm that the downstream incentives and promotions are applied to unadjusted (meaning not discounted) wholesale or retail costs/prices.

   ii. If PG&E does not currently integrate promotions of equipment across multiple delivery channels, such as by promoting at the manufacture and distributor levels commercial, industrial, agricultural, and water and waste water treatment facility equipment that is also promoted through downstream interventions, please indicate whether PG&E believes there might be additional economies of scale and scope through such an approach.

ANSWER 5

a. No, the interpretation is not correct. It is more accurate to say CFLs are largely incentivized through mid/upstream. This is not the same as saying the mid/upstream channel is used largely for CFLs, with limited use for other technologies. However, it is fair to say that CFLs are largely incentivized through the mid/upstream channels.

b. Opportunity exists to leverage relationships with upstream or midstream market actors through the EE portfolio in its procurement of equipment for the Energy Savings Assistance Program (ESAP). This general approach may have economies of scale and cost efficiencies; due diligence is being performed to determine if leveraging these relationships would produce this outcome.

The ESAP recently moved to a centralized materials model this year and entered into a new contract with a materials distributor, ALOM. PG&E shared the list of existing distributors/manufactures that participate in EE’s Residential LED lighting program for ALOM’s consideration in order to understand if economics of scale and cost efficiencies exist with the new model.

c. Downstream Prescriptive: Yes, there is involvement between the downstream delivery channel and manufacturers and distributors. PG&E informs manufacturers of current and expected future specifications and incentive levels for downstream rebates. This allows manufactures to adapt to changing (e.g. more efficient) specifications so that more products are available at the time of the change. PG&E does not typically coordinate downstream rebates with manufacturer or vendor promotions, though manufacturers may have promotions associated with downstream prescriptive rebates.

Direct Install: Limited involvement. PG&E is not aware of involvement between Direct Install (DI) implementers and manufacturers or distributors on incentives or promotions, though this may happen. Implementers purchase product from distributors, but DI

Implementers are aware they cannot purchase product that has already been incented through upstream/midstream programs, and then apply the DI incentive to customers on top of that.

Custom Incentives: Limited to no involvement. The custom incentive delivery channel does not work directly with manufacturers or distributors through incentives or promotions. Individual measure eligibility is determined on a project basis after applications have been reviewed, limiting the feasibility of manufacturer or distributor support in this channel. Additionally, in some cases determining and documenting program influence can be more challenging when vendors introduce the program to customers rather than PG&E program representatives. However, vendors may choose to include estimated custom incentives with their marketing material.

PG&E has not evaluated the effectiveness of upstream/midstream involvement in supporting downstream interventions. PG&E would support an EM&V study on this question.

d. PG&E does not know if there would be economies of scale and scope and cost efficiencies through this general approach. There are likely advantages and disadvantages. This question may be better suited for the California Energy Efficiency Coordinating Committee (CAEECC) subcommittees, where implementers and other parties can comment and consider for their program designs.

PG&E will offer that while there may be opportunities, there are logical challenges with this type of approach. A distributor's business model is founded on closing sales (e.g. they make money selling products). The model for midstream rebates is to make it easier for distributors to close the sale of equipment that is more efficient than the equipment the customer intended to purchase. As such, it is difficult to imagine a midstream (distributor) model that could promote the custom category as it would not allow a distributor to close the sale because applications need to be completed, reviewed, and approved before customers can order equipment.

Further, this would create challenges for determining baselines, and D.16-08-019 requires a code baseline for midstream programs and allow for existing baselines in custom/deemed/DI programs.

e. It's critical to coordinate interventions between channels to avoid double counting and double dipping. As such point-of-sale programs are closely coordinated between mid and downstream channels. Channel selection is determined using technology attributes, delivery cost, and target customer purchase habits. Specific channels are used when they are anticipated to provide the highest leverage in the value chain. Because of that, programs do not typically employ multiple channels unless there is an explicit reason to do so. One example of leveraging multiple channels is in the case of LED lamps. LED lamps are incented upstream for the mass-market Primary Lighting subprogram, and downstream programs like Middle Income Direct Install (MIDI) that target a specific hard-to-reach customer base.

PG&E encourages third parties to consider these opportunities in future program designs, where they make sense.

e.i. As a general matter, PG&E's downstream incentives do not include manufacturer and distributer incentives. Downstream incentives are applied to unadjusted wholesale or retail cost/prices. There are known cases where some measures may be offered in more than one channel: in these cases PG&E validates that these measures are neither double counted nor double paid.

However, PG&E's midstream point of sale (POS) food service program is in the process of launching (September 1, 2017) an incentive structure that will pay both the customer and distributor on a limited range of products. The incentive will be delivered to the distributor, who will then be required to pass on a portion of that incentive to the customer.

Since there are no known non-residential measures that are offered simultaneously multiple channels as a coordinated offer, there is no top-10 list.

e.ii. PG&E has focused on determining the most effective delivery channel for a given measure and typically limits the measure to that single channel to avoid risks associated with double dipping. PG&E has not seen evidence that there would be additional economies of scale and scope in this approach that outweigh the challenges. PG&E would support an EM&V study on this question.

PACIFIC GAS AND ELECTRIC COMPANY
Energy Efficiency 2018-2025 Rolling Portfolio Business Plan
Application 17-01-015
Data Response

PG&E Data Request No.:	TURN_002-**Q06**		
PG&E File Name:	EnergyEfficiency2018-2025-RollingPortfolioBusinessPlan_DR_TURN_002-Q06		
Request Date:	May 12, 2017	Requester DR No.:	002
Date Sent:	June 2, 2017	Requesting Party:	The Utility Reform Network
PG&E Witness:	Halley Fitzpatrick	Requester:	Hayley Goodson

SUBJECT: PG&E 2018-2025 EE ROLLING PORTFOLIO BUSINESS PLAN & BUDGET. TURN DATA REQUEST TURN-PG&E-02.

ENERGY EFFICIENCY POLICY REQUESTS

QUESTION 6

Regarding PG&E's Response to TURN-PG&E-01, Q 15:

a. Has PG&E ever offered incentives based on lifecycle savings, rather than, or in addition to, first year savings? If so, please identify the programs or projects where PG&E offered incentives based on lifecycle savings and any available EM&V addressing the effectiveness of that incentive structure.

b. Does PG&E intend to require or encourage, as a general matter, incentives based on lifecycle savings during the time period covered by the Business Plan? Please explain why or why not.

ANSWER 6

a. Current PG&E staff is not aware of, nor able to immediately locate information on, programs that offered incentives to customers based on lifecycle savings. However, rebates for deemed measures are often determined with consideration for a measure's TRC, which is determined in large part by lifecycle savings.

b. Yes, PG&E is exploring (with the intention of offering) incentive designs that correlate to lifecycle savings as opposed to first year savings. Incentive mechanisms used for programs and measures will vary (e.g. prescriptive, customized, pay for performance using meter based savings approaches); some measures or program types may be better suited for lifecycle incentives than others. PG&E is considering this approach, and will look to third parties to propose and design incentive structures that align with PG&E's portfolio and sector goals, and Commission policy.

PACIFIC GAS AND ELECTRIC COMPANY
Energy Efficiency 2018-2025 Rolling Portfolio Business Plan
Application 17-01-015
Data Response

PG&E Data Request No.:	TURN_002-**Q07**		
PG&E File Name:	EnergyEfficiency2018-2025-RollingPortfolioBusinessPlan_DR_TURN_002-Q07		
Request Date:	May 12, 2017	Requester DR No.:	002
Date Sent:	June 2, 2017	Requesting Party:	The Utility Reform Network
PG&E Witness:	Halley Fitzpatrick	Requester:	Hayley Goodson

SUBJECT: PG&E 2018-2025 EE ROLLING PORTFOLIO BUSINESS PLAN & BUDGET. TURN DATA REQUEST TURN-PG&E-02.

ENERGY EFFICIENCY POLICY REQUESTS

QUESTION 7

Regarding PG&E's Response to TURN-PG&E-01, Q 16:

a. Please provide a copy of the "general rule" that early retirement "to code" is prohibited in Direct Install programs, including any exceptions, and indicate the source (CPUC decisions or other guidance, PG&E's own policies, other?) and vintage of this rule.

b. Please provide a copy of PG&E's correspondence with implementers instructing them to stop offering "to-code" linear fluorescent lamp retrofits in 2016 and clarifying early retirement policies for all regional DI implementers.

c. If not already addressed in your response to part "a" or "b", please provide PG&E's understanding of current CPUC policy regarding early retirement "to code" in Direct Install programs. If it is PG&E's understanding that no such policy exists, indicate whether PG&E would support the adoption of a CPUC policy prohibiting early retirement "to code" in Direct Install programs, other than in the Energy Savings Assistance Program.

ANSWER 7

a. PG&E's custom program rulebook v1.1 (date 5/20/2016) is **attached**, see rule 5.1 and note that there are no exceptions or notes that allow deviation for Direct Install programs. This rule became effective Jan. 1, 2015 for Early Retirement measures.

b. See **attached** email "GP UPDATE: MLC and Parallel Review.msg, dated 12/23/2015" and "IMPORTANT: 2016 Regional Direct Install Program Manual.msg, dated 12/31/2015". These emails notified implementers about policies and procedures for Regional Direct Install programs.

As a point of clarification, implementers were notified / reminded of all policies with these communications, including that ER to-code was not allowed and the process for determining a code/ISP baseline. The issue referenced in PG&E's response to TURN-PG&E-01, Q 16 was due more to a lack of understanding about baseline selection not necessarily a lack of understanding about Early Retirement measure eligibility.

c. PG&E assumes the CPUC policy for early retirement to-code has been recently allowed per D16-08-019 and R.4818. However PG&E has not yet determined which measures and/or programs will allow "to-code" eligibility. PG&E is supportive of allowing early retirement to-code in cases where going "above code" is not practical or cost-effective and customers would otherwise not plan to upgrade. As such, PG&E would not support a CPUC policy that broadly prohibits early retirement "to code" in DI or other delivery types.

Enclosed Attachment (s):