PACIFIC GAS AND ELECTRIC COMPANY'S (U 39-M)

REVISED PORTFOLIO AND SECTOR-LEVEL METRICS PROPOSAL

A.17-01-013, A.17-01-014, A17-01-015, A.17-01-016, AND A.17-01-017

APPENDIX 1

PG&E'S REVISED PORTFOLIO AND SECTOR-LEVEL METRICS

JULY 14, 2017

PACIFIC GAS AND ELECTRIC COMPANY'S
REVISED PORTFOLIO AND SECTOR-LEVEL METRICS

Portfolio Level – All Sectors

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Capturing Energy Savings	1A	Electricity Savings (Program Savings)	558 Net GWh (2015) 734 Gross GWh/ (2015)	Program Tracking Database (PTDB)	443 Net GWh/yr (564 Gross GWh/yr)	474 Net GWh/yr (595 Gross GWh/yr)	508 Net GWh/yr (635 Gross GWh/yr)
	1B	Demand Savings (Program Savings)	109 Net MW (2015) 145 Gross MW (2015)		57 Net MW/yr (76 Gross MW/yr)	66 Net MW/yr (86 Gross MW/yr)	74 Net MW/yr (96 Gross MW/yr)
	1C	MMTherm Savings (Program Savings)	15.4 Net GWh (2015) 19.2 Gross MM Therms (2015)		13.8 Net MM Therms/yr (17.1 Gross MM Therms/yr)	15.8 Net MM Therms/yr (19.4 Gross MM Therms/yr)	17.1 Net MM Therms/yr (21.0 Gross MM Therms/yr)
	1D	Electricity Savings (Codes and Standards)	Average of 361 Net GWh/ year across 2011-2015	Ex ante savings claims	397 Net GWh/yr	292 Net GWh/yr	240 Net GWh/yr
	1E	Demand Savings (Codes and Standards)	Average of 60 Net MW /year across 2011-2015		102 Net MW/yr	268 Net MW/yr	82 Net MW/yr
	1F	MMTherm Savings (Codes and Standards)	Average of 0.59 Net MM Therms / year across 2011-2015		6 Net MM Therms/yr	6 Net MM Therms/yr	5 Net MM Therms/yr
	1G	Electricity Savings (Portfolio)		Sum of Net program savings (1A-1C) and Net Codes and Standards savings (1D-1F)	840 Net GWh/yr	766 Net GWh/yr	748 Net GWh/yr
	1H	Demand Savings (Portfolio)			159 Net MW/yr	155 Net MW/yr	156 Net MW/yr

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
	1I	MMTherm Savings (Portfolio)			20 Net MMTherms/yr	22 Net MMTherms/yr	22 Net MMTherms/yr
Notes: Metric will be the first year annualized reported gas, electric, and demand savings, gross and net. This does not include savings for codes and standards, which will be tracked and reported separately. **Notes on how targets were set:** Targets set based on values in the 2015 and Beyond Potential and Goals Study. To show our commitment to energy efficiency, PG&E is targeting approximately 10% over the Potential and Goals study values. Once the 2018 Potential and Goals Study is final, and new goals for 2018 and beyond are approved by the Commission, PG&E will update its short, mid, and long-term targets.							
Disadvantaged Communities	2A	Electricity Savings	37.7 Gross GWh (2015)	Program Tracking Database	29.0 Gross GWh/yr	30.6 Gross GWh/yr	32.6 Gross GWh/yr
	2B	Demand Savings	6.11 Gross MW (2015)		3.20 Gross MW/yr	3.62 Gross MW/yr	4.05 Gross MW/yr
	2C	MM Therm Savings	0.41 Gross MM Therms (2015)		0.37 Gross MM Therms/yr	0.42 Gross MM Therms/yr	0.45 Gross MM Therms/yr
Notes: Savings are the first year annualized reported gas, electric, and demand savings, gross only. These savings do not include Codes and Standards. Disadvantaged communities are identified as ZIP codes that meet at least one of these criteria: 1) ***High unemployment zip code*** where unemployment rate is at least 150% of the median unemployment rate for the county or for the state or 2) ***Low income zip code*** where average household income is 50% below Area Median Income (AMI). **Notes on how targets were set:** Targets are set using the proportion of baseline disadvantaged communities savings to baseline program savings (Metrics 1A-1C), applied to the targets for short, mid and long-term gross program savings (Metrics 1A-1C).							
Hard to Reach Markets	3A	Electricity Savings	86.38 Gross GWh (2015)	Program Tracking Database	66.4 Gross GWh/yr	70.0 Gross GWh/yr	74.7 Gross GWh/yr
	3B	Demand Savings	14.59 Gross MW (2015)		7.65 Gross MW/yr	8.65 Gross MW/yr	9.66 Gross MW/yr
	3C	MMTherm Savings	0.51 Gross MMTherms (2015)		0.45 Gross MM Therms/yr	0.51 Gross MM Therms/yr	0.55 Gross MM Therms/yr
Notes: Savings are the first year annualized reported gas, electric, and demand savings, gross only. These savings do not include Codes and Standards. Hard to reach markets are defined based on the criteria identified in Resolution G-3497. A customer is defined as hard to reach if they meet two of the following criteria,							

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
as long as one of them is geography. • Language: primary language spoken is other than English • Geography: businesses or homes in areas other than the United States Office of Management and Budget Combined Statistical Areas of the San Francisco Bay Area, the Greater Los Angeles Area and the Greater Sacramento Area or the Office of Management and Budget Metropolitan Statistical Areas of San Diego County For small businesses, the following criteria are also considered: • Business size: less than ten employees and/or classified as very small (customers whose annual electric demand is less than 20kW, or whose annual gas consumption is less than 10,000 therm, or both, and/or • Leased or rented facilities: investments in improvements to a facility rented or leased by a participating business customer For residential customers, the following criteria are also considered: • Income: those customers who qualify for the California Alternative Rates for Energy (CARE) or the Family Electric Rate Assistance Program (FERA) and/or • Housing Type: multi-family and mobile home tenants (rent and lease) As noted in PG&E's metrics filing on May 22, 2017, PG&E does not track data such as language or building ownership. As a result, PG&E is unable to apply the language and leased or rented facilities criteria to identify savings in hard to reach markets. The population of hard to reach markets is therefore identified by commercial customers who meet the geography and business size criteria and residential customers who meet the geography and income and geography and leased or rented facilities criteria. Since not all the HTR criteria have been applied, PG&E considers its baselines and targets to be biased low. PG&E provides this data as a proxy using the best available information in accordance with Commission guidance. **Notes on how targets were set:** Targets are set using the proportion of baseline HTR savings to baseline program savings (Metrics 1A-1C), applied to the targets for short, mid and long-term gross program savings (Metrics 1A-1C). Note that the proportion of baseline HTR savings to baseline program savings compares 2016 HTR baseline data with 2015 baseline program savings data. A 2015 HTR baseline can be used in subsequent filings.							
Cost per unit saved	4A	Levelized cost of energy efficiency – kWh using PAC test	$0.066/kWh	Cost Effectiveness Tool (CET) value from filed annual savings report	Same as baseline	$0.061 (7.5% lower than baseline)	$0.061 (7.5% lower than baseline)
	4B	Levelized cost of energy efficiency – kW-yr using PAC test	$355.90/kW-yr	Cost Effectiveness Tool (CET) value from filed annual savings report	Same as baseline	$329.21 (7.5% lower than baseline)	$329.21 (7.5% lower than baseline)
	4C	Levelized cost of energy efficiency – Therm using PAC test	$0.456/therm	Cost Effectiveness Tool (CET) value from filed annual savings report	Same as baseline	$0.422 (7.5% lower than baseline)	$0.422 (7.5% lower than baseline)

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Notes: Levelized costs represent discounted lifecycle savings using Program Administrator Costs. This does not include Codes and Standards. Stakeholders agreed to use the PAC test in a June 30, 2017 California Energy Efficiency Coordinating Committee (CAEECC) meeting. Additionally, this test is the best metric for showing the success of managing the portfolio as all costs are within PG&E's control. **Notes on how targets were set:** Targets are set based on the need to meet increasing goals with a lower budget. However, due to new program administration and implementation structures, and other portfolio/program changes, flexibility is required to adapt to the new paradigm. Targets are assumed to be steady in the first three years because PG&E will be selecting new vendors that may need time to ramp up. The 7.5% reduction was estimated at the portfolio level based on projected savings goals and budgets.							

Residential Sector Metrics (Single-Family and Multi-Family)

PG&E is presenting residential sector metrics, with details for both single-family (SF) and multi-family (MF) where possible. We are presenting this data as one section (rather than split by SF and MF) to align with our business plan, and to provide context to the data. In certain cases (e.g. upstream programs), SF and MF designations are not available, and an arbitrary split of savings, participants, etc. may limit the accuracy and utility of particular metrics. As a result, all single-family and multi-family metrics measure the impacts of downstream programs only, unless otherwise noted. In several cases, PG&E also provides overall residential metrics, which include all residential programs unless otherwise noted.

It is important to note that past data collection systems have been built to report out by program, not by segment (i.e. SF or MF sub-groups within sector). As such, past data does not always align well with the CPUC's requests and the PAs have been asked to use any available proxy values to form estimates. PG&E and implementers will need to adjust future data collection to accommodate these new requirements. PG&E is working with our vendors to collect data that better aligns with the CPUC requested metrics.

We also emphasize that the metrics in this document are not a replacement for EM&V, as the Commission acknowledges in the May 10, 2017 Metrics Ruling.[1]

Below are the residential metrics, as well as baselines, targets and notes. The contents of the table are based on the best available information at the time of the filing, and should be revised as new information becomes available.

Residential Energy Savings Metrics

Area	Metric Number	Metrics	Baseline (2015)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Capturing energy savings	**1**	**Electricity Savings**	233.6 Gross GWh	Net and gross ex ante savings from program databases; MF and SF	98 Net GWh/yr (118 Gross GWh/yr)	102 Net GWh/yr (120 Gross GWh/yr)	109 Net GWh/yr (127 Gross GWh/yr)
	1A	Single-Family	69.8 Gross GWh		73 Net GWh/yr (88 Gross GWh/yr)	76 Net GWh/yr (90 Gross GWh/yr)	82 Net GWh/yr (95 Gross GWh/yr)
	1B	Multi-Family	12.3 Gross GW		15 Net GWh/yr (18 Gross GWh/yr)	16 Net GWh/yr (18 Gross GWh/yr)	17 Net GWh/yr (19 Gross GWh/yr)

[1] Metrics Ruling, Table 2, p. 4.

Area	Metric Number	Metrics	Baseline (2015)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
	1C	Multi-Family (in-unit, common area, and master metered)[a]	in-unit is estimated to make up 91% of the MF savings in 1B, common area is 9%	based on dwelling codes (not programs) Detached is assumed to be SF, and shared wall and common area are assumed to be MF In-unit and common area estimates are also based on dwelling codes (as a percentage of all MF savings)	Targets not set by in-unit or common area.		
	2	**Demand Savings**	54.1 Gross MW		9 Net MW/year (14 Gross MW/yr)	7 Net MW/year (11 Gross MW/yr)	8 Net MW/year (12 Gross MW/yr)
	2A	Single-Family[a]	21.3 Gross MW		4.7 Net MW/year (7.3 Gross MW/yr)	3.9 Net MW/year (5.8 Gross MW/yr)	4.3 Net MW/year (6.2 Gross MW/yr)
	2B	Multi-Family[a]	2.6 Gross MW		1.7 Net MW/year (2.6 Gross MW/yr)	1.4 Net MW/year (2.0 Gross MW/yr)	1.5 Net MW/year (2.2 Gross MW/yr)
	2C	Multi-Family (in-unit, common area, and master metered)	in-unit is estimated to make up 85% of the MF savings in 2B, common area is 15%		Targets not set by in-unit or common area.		
	3	**MM Therm Savings**	5.0 Gross MM Therms		1.3 Net MM Therms / year (1.4 Gross MM Therms/yr)	1.5 Net MM Therms / year (1.6 Gross MM Therms/yr)	1.7 Net MM Therms / year (2.0 Gross MM Therms/yr)
	3A	Single-Family	1.04 Gross MM Therms		0.5 Net MM Therms / year (0.6 Gross MM Therms/yr)	0.6 Net MM Therms / year (0.6 Gross MM Therms/yr)	0.7 Net MM Therms / year (0.8 Gross MM Therms/yr)
	3B	Multi-Family	0.26 Gross MM Therms		0.3 Net MM Therms / year (0.3 Gross MM Therms/yr)	0.3 Net MM Therms / year (0.4 Gross MM Therms/yr)	0.4 Net MM Therms / year (0.5 Gross MM Therms/yr)
	3C	Multi-Family (in-unit, common area, and master metered)	in-unit is estimated to make up 94% of the MF savings in		Targets not set by in-unit or common area.		

Area	Metric Number	Metrics	Baseline (2015)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
		[a]	3B, common area is 6%				

[a] This data is determined by dwelling type, not by program. Detached dwellings are assumed to be single family and dwellings with shared walls or those listed as common areas are assumed to be multi-family. As such, these numbers will not align exactly with specific breakdowns by program. This is the best proxy for reporting the SF and MF segments at the time of this filing. Note that past reporting was done by program, not by segment.

Notes:
First year annualized reported gas, electric, and demand savings, gross and net.
MF in-unit and common area will be reported (but targets are set overall for MF, not by these sub-categories). Note that master-metered numbers were not available at the time of this filing.

Notes on how targets were set: Targets were set using the 2015 Potential and Goals study, adjusted based on past performance. For example, if past trends indicated that residential met only 75% of the potential in the sector, PG&E used the discounted number and an overall portfolio adjustment factor to determine future savings. Because the 2015 Potential and Goals study anticipated lower residential savings based on factors such as the reduced potential from energy efficient lighting due to code changes, the overall residential targets are lower than baseline; however, PG&E expects that given our focus on MF, and our new and innovative downstream programs such as P4P, SF and MF savings will increase over time. Once the 2018 Potential and Goals Study is final, and new goals for 2018 and beyond are approved by the Commission, PG&E will update its short, mid, and long-term targets.

Residential Depth of Savings Metrics

Area	Metric Number	Metrics	Baseline (2015)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Depth of savings (downstream programs only – no participants for upstream)	**4**	**Average electric savings/participant**	400 kWh	Gross savings/total participants	CPUC requests metrics and targets at the segment level (i.e., the Common Metrics requested were for SF and MF). However, PG&E is providing sector-level baselines for context since SF and MF do not include all residential programs.		
	4A	Single-Family	463 kWh		5% increase over 2015 baseline	10% increase over 2015 baseline	15% increase over 2015 baseline
	4B	Multi-Family (per participant)	387 kWh		Steady with 2015 baseline	Steady with 2015 baseline	Steady with 2015 baseline
	4C	Multi-Family (per project, property level)		Gross savings/number of units	No baseline and targets are set for this metric. See the notes section for more information.		

Area	Metric Number	Metrics	Baseline (2015)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
	5	**Average demand reduction/participants**	0.037 kW	Gross savings/total participants	CPUC requests metrics and targets at the segment level (i.e., the Common Metrics requested were for SF and MF). However, PG&E is providing sector-level baselines for context since SF and MF do not include all residential programs.		
	5A	Single-Family	0.052 kW		7% increase over 2015 baseline	7% increase over 2015 baseline	7% increase over 2015 baseline
	5B	Multi-Family	0.033 kW		Steady with 2015 baseline	Steady with 2015 baseline	Steady with 2015 baseline
	5C	Multi-Family (per project, property level)		N/A	No baseline and targets are set for this metric. See the notes section for more information.		
	6	**Average gas savings/ participant (downstream only)**	45.8 Therms/participant	Gross savings/total participants	CPUC requests metrics and targets at the segment level (i.e., the Common Metrics requested were for SF and MF). However, PG&E is providing sector-level baselines for context since SF and MF do not include all residential programs.		
	6A	Single-Family	4.6 Therms/participant		7% increase over 2015 baseline	7% increase over 2015 baseline	7% increase over 2015 baseline
	6B	Multi-Family	56 Therms/participant		Steady with 2015 baseline	Steady with 2015 baseline	Steady with 2015 baseline
	6C	Multi-Family (per project, property level)			No baseline and targets are set for this metric. See the notes section for more information.		

Notes: Note that PG&E is reporting this for downstream program only (i.e., those with a dwelling type that can be associated with SF or MF) since there are no "participants" for upstream programs. While not reported as participants, PG&E also serves more than 1.5 million customers by sending them Home Energy Reports (HERs). In addition, PG&E serves many more customers than those shown in the tables above through upstream channels such as Primary Lighting. PG&E continues to refine its data to distinguish between SF and MF customers, and will update baselines and targets as more reliable data can be identified.

Notes on how SF targets were set: Single-family targets were set by reviewing the program make-up, and attempting to choose an aggressive target that aligns with PG&E's commitment to increasing the depth of savings from residential programs. This may include incorporating more P4P and other program designs that are expected to increase depth.

Notes on how MF targets were set: Multi-family targets are held steady (although overall savings increase) to reflect PG&E's push for increasing the total number of customers served in the MF segment, while recognizing that the savings that can be claimed for measures in this sector may decrease.

Area	Metric Number	Metrics	Baseline (2015)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
No baselines and targets are provided for metrics 4C, 5C, and 6C because PG&E does not believe measuring depth of savings at the property level is a meaningful metric. Instead, PG&E proposes to include a metric that tracks depth of savings at the *unit* level. This would normalize for the number of units at each multifamily property and provide greater insight into the depth of savings achieved over time. PG&E does not have reliable baselines or targets at the time of this filing because PG&E has not historically required implementers to track and report this data. However, implementers may begin tracking this data moving forward.							

Residential Penetration Metrics

Area	Metric Number	Metrics	Baseline (2015)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Penetration of energy efficiency programs in the eligible market	**7**	**Percent of participation relative to the eligible population**	3.4%	Total participants/total residential customers	CPUC requests metrics and targets at the segment level (see below)		
	7A	Single-Family (electric)	4.0%	Detached wall participants/detached wall residential customers	Steady with 2015 baseline	Steady with 2015 baseline	Steady with 2015 baseline
	7B	Single-Family (gas)	0.34%	Detached wall participants/detached wall residential customers adjusted down since not all customers have gas (5.0M/5.6M have gas)	Steady with 2015 baseline	Steady with 2015 baseline	Steady with 2015 baseline
	7C	Multi-Family (electric)	2.1%	Shared wall participants/Shared wall residential customers	2.3% (7% over 2015 baseline)	2.5% (15% over 2015 baseline)	2.7% (20% over 2015 baseline)
	7D	Multi-Family (gas)	0.23%	Shared wall participants/Shared wall residential customers adjusted down since not all customers have gas (5.0M/5.6M have gas)	0.24% (7% over 2015 baseline)	0.26% (15% over 2015 baseline)	0.27% (20% over 2015 baseline)
	8	Percent of square feet of eligible population participating (by multifamily property)	2.15%	Number of multifamily electric participants/total square feet. See notes at the end of this appendix for more information on square footage estimates.	2.3%	2.5%	2.6%

Area	Metric Number	Metrics	Baseline (2015)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Notes: PG&E is reporting this for downstream programs only since there are no "participants" for upstream programs. While not reported as participants, PG&E also serves more than 1.5 million customers by sending them HERs. In addition, through upstream channels such as Primary Lighting, PG&E serves many more customers. **Notes on how SF targets were set:** Single-family targets are held steady (although overall savings increase) to reflect our push for increasing the depth of savings per customer in this segment. **Notes on how MF targets were set:** Multi-family targets were set by reviewing the program make-up, and attempting to choose an aggressive number that aligns with PG&E's goal to increase the number of customers participating in this segment.							

Residential Cost Per Unit Metrics

The table below shows the levelized costs for the residential sector and the SF and MF sub-areas using the Program Administrator Costs (PAC) test.

Area	Metric Number	Metrics	Baseline (2015)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Cost per unit saved	**9**	**Levelized cost of energy efficiency per kWh (overall residential sector)**	$0.076/kWh	Cost Effectiveness Tool (CET) value from filed annual savings report	CPUC requests metrics and targets at the segment level (see below)		
	9A	Single-Family	$0.150/kWh		5-10% decrease from baseline	10%-20% decrease from baseline	10%-20% decrease from baseline
	9B	Multi-Family	$0.141/kWh		Remain constant	Remain constant	Remain constant
	10	**Levelized cost of energy efficiency per kW/year**	$377.40/kW/year		CPUC requests metrics and targets at the segment level (see below)		
	10A	Single-Family	$313.3/kW/year		5-10% decrease from baseline	10%-20% decrease from baseline	10%-20% decrease from baseline
	10B	Multi-Family	$232.30 /kW/year		Remain constant	Remain constant	Remain constant
	11	**Levelized cost of energy efficiency Therm (overall residential sector)**	$0.456/Therm		CPUC requests metrics and targets at the segment level (see below)		
	11A	Single-Family	$1.228 /Therm		5-10% decrease from baseline	10%-20% decrease from baseline	10%-20% decrease from baseline
	11B	Multi-Family	$0.655 /Therm		Remain constant	Remain constant	Remain constant

Notes:
Levelized costs represent discounted lifecycle savings using Program Administrator Costs. Stakeholders agreed to use the PAC test in a June 30, 2017 California Energy Efficiency Coordinating Committee (CAEECC) meeting. Additionally, this test is the best metric for tracking the success of managing the portfolio, as all costs are within PG&E's control. A full list of subprograms included in SF and MF levelized costs is included in the "Appendix of Residential Source Data for Calculating Baselines" at the end of these tables.

Area	Metric Number	Metrics	Baseline (2015)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)

PG&E will strive to keep levelized costs relatively flat from baseline in the short-term, with a slight decrease in single-family. However, flexibility will be required due to new program administration and implementation structures, among other portfolio and program changes. In addition, PG&E notes the following considerations used to calculate these metrics.

- Primary Lighting and HER are included in the overall residential sector numbers, but not in the SF and MF numbers.
- SF includes the audits portion of Residential Energy Advisor (PGE21001), which is 16.4% of kWh and 0% of kW and Therms.
- The Home Energy Reports portion is not included in MF.
- Energy Upgrade California (PGE21004) is split between SF and SF. SF accounts for 79% of kWh and 90.7% of kW and Therms.
- Multi-family programs in baseline year included MF New Construction (NC), MF energy efficiency rebates (MFEER), MF Energy Upgrade California (EUC) and Cooling Optimization for MF. See the Appendix for full explanation.

Note on how targets were set:
Targets for the portfolio as a whole will depend on the future of Primary Lighting and HERs. Because of uncertainty in those programs, PG&E keeps the levelized costs relatively stable in the short term, with 10% mid- and long-term targets. If PG&E is able to successfully ramp up pay for performance (P4P) designs, PG&E believes a 15 – 20% reduction may be within reach.

SF targets set based on three reasons: 1) Changes PG&E has made to the portfolio within the last year have reduced spending in low TRC/PAC programs within the single family downstream sector, including Home Upgrade, 2) the P4P model should facilitate delivering more savings for fewer incentive dollars, and 3) expanded financing offerings should help customers pursue deeper projects by addressing the up-front cost barrier without the need for substantially enhanced rebates.

Residential Energy Intensity Metrics

These are currently rough estimates.

Area	Metric Number	Metrics	Baseline (2015)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Energy Intensity	**12**	**Average electric use of homes (kWh) -All residential households**	5,200 kWh/HH	Energy usage from customer information systems (CIS)/total electric customers in CIS	These are market values that PG&E will provide at the CPUC's request; however, the denominator of these metrics is not from program data. It is from population data. PG&E's energy efficiency programs influence energy use, but other economic and population-based factors (e.g. conservation that occurs due to economic downturns, or adding load due to additional electronic devices) outweigh PG&E's energy efficiency program's ability to influence these values sufficiently to set reasonable targets. For example, it is possible for PG&E's energy efficiency programs to influence a household to save 5% of their electrical use. However, the household could add load that may be similar to the 5% saved. Absent PG&E's energy efficiency programs, the household use may have increased 5% rather than stay steady.		
	12A	Single-family households only	6,150 kWh/HH	Energy usage from detached homes/total detached customers in CIS			
	13	**Average gas use of homes (therms)**	475 Therms/HH	Energy usage from CIS systems/total gas customers in CIS			
	13A	Single-family households only	484 Therms/HH	Energy usage from detached homes/total detached customers in CIS			
Energy Intensity (MF)	**14**	Average energy use of MF buildings (average usage kWh per square foot)	2.43 kWh/sq. ft.	Energy usage from multifamily dwellings/square feet from CEC data. See notes in the appendix at the end of this document for more information about residential square footage estimates.			
	15	Average energy use of MF buildings (average usage therms per square foot)	0.19 Therms/sq. ft.	Energy usage from multifamily dwellings/square feet from CEC data. See notes in the appendix at the end of this document for more			

Area	Metric Number	Metrics	Baseline (2015)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
				information about residential square footage estimates.			
Notes: The baselines for Metrics 14-15 are rough estimates because PG&E does not collect square footage data. The process for estimating square footage is documented in the appendix at the end of this document titled "Appendix of Residential Source Data for Calculating Baselines."							

Commercial Sector Metrics

The metrics below follow the structure proposed by the CPUC staff in the May 10, 2017 Metrics Ruling. There is a need for revisions to commercial program data collection systems and additional research or market-based studies to support the metrics desired by the CPUC. These changes would include: (1) instituting changes to data collection processes within the commercial programs to collect quality square footage data, (2) implementing changes for buildings benchmarked through the energy efficiency programs to collect the number of buildings benchmarked and their square footage, and (3) initiating any research or studies needed to support metrics for this area. The specific research required for commercial includes:

- Research to determine the most cost effective way to collect square footage data and obtain quality results. The PAs have explored square footage in the past and described the poor quality of this variable during meetings. Ensuring this variable is of high quality may be costly, as simply requesting the approximate square footage of a building (or space affected by a measure) is known to produce poor results.
- Research to determination the hard to reach (HTR) in the commercial population. Currently, HTR is a self-identified designation based on Resolution G-3497, which specifies commercial HTR is based on individuals who meet two of four criteria (where one parameter is geography). If geography is not met, three criteria are required to be satisfied. The four criteria are 1) geographic location, 2) primary language other than English, 3) less than 10 employees (or demand under 20KW and/or annual therms less than <10,000), and 4) rented or leased facilities. Two of these four parameters are currently available at the population level (geography and demand/usage). Tracking and reporting this data in accordance with the current HTR definition would require PG&E to collect self-reported data for the language and rented or leased facilities criteria throughout its commercial energy efficiency programs.

We also emphasize that the metrics in this document are not a replacement for EM&V, as the Commission acknowledges in the May 10, 2017 Metrics Ruling.[2]

Below we provide the commercial metrics, as well as baselines, targets and notes. The contents of the table are based on the best available information at the time of the filing, and should be revised as new information becomes available.

[2] Metrics Ruling, Table 2, p. 4.

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Capturing Energy Savings	1A	Electricity Savings	Average of 309 Gross GWh/ year across 2011-2015	Program Tracking DB (PTDB)	155 Net GWh/yr (208 Gross GWh/yr)	180 Net GWh/yr (235 Gross GWh/yr)	205 Net GWh/yr (265 Gross GWh/yr)
	1B	Demand Savings	Average of 55.7 Gross MW / year across 2011-2015		22 Net MW/yr (29 Gross MW/yr)	29 Net MW/yr (38 Gross MW/yr)	35 Net MW/yr (45 Gross MW/yr)
	1C	MMTherm Savings	Average of 4.1 Gross MM Therms/year across 2011-2015		4.2 Net MM Therms/yr (5.2 Gross MM Therms/yr)	5.2 Net MM Therms/yr (6.5 Gross MM Therms/yr)	5.9 Net MM Therms/yr (7.2 Gross MM Therms/yr)
Notes: Metric will be the first year annualized reported gas, electric, and demand savings, gross and net **Notes on how targets were set:** Targets are set based on past performance of the commercial sector compared to the 2015 Potential and Goals Study, and forecasted savings from the study. Because the Potential and Goals Study includes savings for both the commercial and public sectors in the commercial sector, PG&E attributed ~96% of the commercial sector savings from the Potential and Goals Study to commercial and ~4% to Public. Additionally, PG&E set an overall portfolio goal of approximately 10% over the Potential and Goals Study savings. Targets are lower than baseline because past PG&E performance was higher than Potential and Goals Study values. Once the 2018 Potential and Goals Study is final, and new goals for 2018 and beyond are approved by the Commission, PG&E will update its short, mid, and long-term targets.							
Capturing Energy Savings	2A	Percent of electricity savings compared to overall sector use	0.87%	Numerator: Gross GWh from savings metric Denominator: 2015 GWh use from sales data	0.7% Savings / year	0.8% Savings / year	0.9% Savings / year
	2B	Percent of demand savings compared to overall sector use	0.85%	Numerator: Gross MW from savings metric Denominator: 2015 kW use	0.5% Savings / year	0.7% Savings / year	0.8% Savings / year
	2C	Percent of MM Therm savings compared to overall sector use	0.63%	Numerator: Gross Therm from savings metric Denominator: 2015 MMTherm use from	0.8% Savings / year	1.0% Savings / year	1.1% Savings / year

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
				sales data			
Notes: Numerator is the first year gross annualized reported gas, electric, and demand savings shown in metrics 1A-1C. Denominator is 2015 sales data from the Potential and Goals Study **Notes on how targets were set:** Targets set based on increases in annual savings targets in Metrics 1A-1C.							
Depth of Interventions	3A	kWh Savings per Project	17,600 kWh/project in 2015	Numerator: Gross kWh savings value from savings metric Denominator: Number of projects with kWh savings (PTDB)	16,600 kWh /project / yr (0.5% to 1% savings increase per project)	16,750 kWh /project / yr (1% to 1.5% savings increase per project)	16,700 kWh /project / yr (1.5% to 2% savings increase per project)
	3B	kW Savings per Project	3.2 kW/project in 2015	Numerator: Gross kW from savings metric Denominator: Number of projects with kW savings (PTDB)	3.08/project / yr (0.5% to 1% savings increase per participant)	3.11/project / yr (1% to 1.5% savings increase per participant)	3.10/project / yr (1.5% to 2% savings increase per participant)
	3C	Therm Savings per Project	370 Therms/project in 2015	Numerator: Gross Therms from savings metric Denominator: Number of projects with therm savings (PTDB)	380 therms /project / yr (2.5% to 4.75% savings increase per participant)	400 therms /project / yr (2.75% to 6.5% savings increase per participant)	400 therms /project / yr (3% to 7.5% savings increase per participant)
Notes: PTDB means data is from PG&E's Program Tracking Database Metrics 3A-3C define a project as a participant. A participant is a unique combination of premise and account ID. Targets are lower than baseline because of the additional participants. Increased depth of intervention varies by size with range indicated in targets. Based on the "Commission Staff Additional Clarifications for July 14th Program Adminstrator Filing of Revised Statewide (Common) Sector/Cross-Cutting Level Metrics," issued July 10, 2017, it appears energy savings per square foot have been removed. PG&E agrees with this choice and does not include these metrics in this filing, as these are poor metrics to help understand the portfolio's success due to the fact that square footage data is known to be very poor. **Notes on how targets were set:** For metrics 3A-3C, PG&E is targeting a small increase in the savings per participant (from 1% to 7.5%) and targeting increases in number of participants as well (on the order of 2-13%). Because participation is increasing more than per participant savings, the average savings/participant value is reduced, although total savings are higher than baseline. For metric 3C, PG&E is targeting a larger increase for gas customers than electric customers to obtain the savings to reach the therm goal.							

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Penetration of Energy Efficiency Programs in the Eligible Market	4A	Percent of participation relative to eligible population - Small	1.6% electric 3.2% gas	Numerator: Number of unique premise/accounts IDs (customers in PTDB) in 2015 Denominator: Number of unique premise/accounts IDs (customers) from CIS in 2015	1.75% electric 4.15% gas	2% electric 5.25% gas	2.3% electric 6% gas
	4B	Percent of participation relative to eligible population – Medium	4.6% electric 8.9% gas	Numerator: Number of unique premise and accounts IDs in 2015 (customers in PTDB) Denominator: Number of unique premise/accounts IDs (customers) from CIS in 2015	4.0% electric 10.5% gas	4.5% electric 11.75% gas	5% electric 13.25% gas
	4C	Percent of participation relative to eligible population - Large	5.4% electric 11.2% gas	Numerator: Number of unique premise/accounts IDs (customers in PTDB) in 2015 Denominator: Number of unique premise/accounts IDs (customers) from CIS in 2015	4.25% electric 13.25% gas	4.75% electric 15.5% gas	5.25% electric 16.75% gas
	5	Percent of Square foot of eligible population	3.25%	Numerator: Total Square Foot covered by projects with savings (PTDB) in 2015 Denominator: Total commercial square	2.91%	3.28%	3.68%

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
				footage from CEC.			
	6	Percent of participation defined as "Hard to Reach"	9%	Numerator: Number of unique premise/accounts IDs (customers in PTDB) in 2015 Denominator: Number of unique premise/accounts IDs (customers) from CIS aligning with HTR definition in 2015	10%	11%	12%
Notes: CIS is PG&E's customer information systems Metric 5 - Square footage data (for the numerator) has not been collected to date. The value here is a proxy using commercial square foot data from the CEC The CEC data contains governmental buildings that should be in public, but there is no easy way to separate the square footage of government buildings from this dataset. As such, the proxy values here are lower than they should be because savings for public buildings are not included, but their square footage is here. Eligible population square footage is from the CEC and includes government buildings, as this data does not draw out the square footage of those buildings. The total commercial square foot from the CEC for PG&E is 2,024.51 million square feet. Metric 6 – PG&E does not track data to indicate whether a commercial customer or participant in an energy efficiency program meets the language and rented or leased facilities criteria in the current HTR definition (Resolution G-3497). As a result, this metric compares the percentage of commercial participants in energy efficiency programs that meet the geographic and annual demand and/or gas usage criteria with the total number of commercial customers that meet the geographic and annual demand and/or gas usage criteria. **Notes on how targets were set:** Metrics 4A-4C – Penetration is kept steady or reduced by some size categories to align with budget projections. Additionally, PG&E plans to reach many more participants than in the past to meet projected Therm goals. Metric 5 – PG&E applied the changing number of participants from metrics 5A-5C and the same average square foot and total square foot to obtain the targets. Metric 6 – PG&E increases participation targets for hard to reach customers to indicate its commitment to helping these small, underserved customers overcome barriers to energy efficiency.							
Cost per unit saved	7A	Levelized cost of energy efficiency – kWh using PAC test	$0.073/kWh	Cost Effectiveness Tool (CET) value from filed annual savings report	Same as baseline	$0.066/kWh (10% lower than baseline)	$0.066/kWh (10% lower than baseline)

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
	7B	Levelized cost of energy efficiency – kW-yr using PAC test	$430.00/kW-yr	CET value from filed annual savings report	Same as baseline	$387.00/kW-yr (10% lower than baseline)	$387.00/kW-yr (10% lower than baseline)
	7C	Levelized cost of energy efficiency – Therm using PAC test	$0.473/therm	CET value from filed annual savings report	Same as baseline	$0.426/therm (10% lower than baseline)	$0.426/therm (10% lower than baseline)
Notes: Levelized costs represent discounted lifecycle savings using Program Administrator Costs. Stakeholders agreed to use the PAC test in a June 30, 2017 California Energy Efficiency Coordinating Committee (CAEECC) meeting. Additionally, this test is the best metric for showing the success of managing the portfolio as all costs are within PG&E's control. **Notes on how targets were set:** Targets are set based on the need to meet increasing goals with a lower budget. However, due to new program administration and implementation structures, and other portfolio/program changes, flexibility is required to adapt to the new paradigm. Targets are assumed to be steady in the first three years because PG&E will be selecting new vendors that may need time to ramp up. The 10% reduction was estimated at the portfolio based on savings goals and budgets.							
Investment in Energy Efficiency	8	Dollars of investment (all sources)	~$121,300,000	Annual Expenditures	~$99,890,000/yr	~$93,770,000/yr	~$93,770,000/yr
Notes: The dollars shown for this metric are the expenditures for the PG&E statewide (core) programs and third party programs in the commercial sector. PG&E does not include any funds associated with commercial customers and/or facilities that may occur in the codes and standards (C&S), emerging technologies (ETP), or workforce education and training (WE&T) programs. **Notes on how targets were set:** Targets are the budets in Table 1.6 in Business Plan.							
Energy Intensity	9A	Percent of square foot of eligible population benchmarked	PG&E has no data to determine a baseline and no good proxy data (see notes)	Numerator: Total Square Foot covered by projects with savings (PTDB) Denominator: Total commercial square foot from buildings over 50,000 Square Foot from CEC (794,190,000 SqFt).	To be determined in 2018 once square footage of participants with benchmarking paid for by EE funds is known.	To be determined in 2018 once square footage of participants with benchmarking paid for by EE funds is known.	To be determined in 2018 once square footage of participants with benchmarking paid for by EE funds is known.

	9B	Percent of buildings of eligible population benchmarked	PG&E has no data to determine a baseline and no good proxy data (see notes)	Numerator: Total buildings covered by projects with savings (PTDB) Denominator: Total commercial buildings over 50,000 Square Foot from CEC.	To be determined in 2018 once number of participants with benchmarking paid for by EE funds is known.	To be determined in 2018 once number of participants with benchmarking paid for by EE funds is known.	To be determined in 2018 once number of participants with benchmarking paid for by EE funds is known.

Notes:
The Energy Commission's "AB 802 Benchmarking Presentation" on July 21, 2016 shows 5,755 commercial buildings over 50,000 square feet in PG&E's service territory (and indicates 133,065 total buildings)

The CEC used CoStar for the data in this presentation and says that the average size of buildings over 50,000 is 136,000 SqFt. PG&E obtained the denominator for Metric 9A by multiplying 5,755 by 136,000. Public buildings not specifically included, but they are not excluded either, so there may be a mix of commercial and public buildings in this data.

Although Metric 9B was not included in the Metrics Ruling, PG&E conducted research and attempted to include it as a metric based on conversations with Commission Staff during the metrics workshop and ad hoc CAEECC meetings.

PG&E also notes that it funds building benchmarking through both its demand response (DR) and energy efficiency budgets. For example, PG&E has provided access to data for close to 12,000 buildings through the DR benchmarking funds. The local government partnerships (LGPs) support benchmarking efforts, but PG&E has never required the LGPs to count how many buildings are benchmarked within these programs. PG&E can request benchmarking information from these energy efficiency activities, but recommends dropping this metric because it represents tracking a task within one or more programs (which appears counter to understanding the success of the commercial portfolio).

Notes on how targets were set:
Metric 9A-9B: PG&E did not set targets for these metrics due to the lack of data for a baseline.

Public Sector Metrics

Public customers have historically been included in the Commercial sector, and as such, baseline data for Public is not always available. For example, the 2015 Potential and Goals Study and the Draft 2018 Potential and Goals Study, do not include energy savings and demand reduction potential for the Public sector, and instead includes this in the Commercial sector. In discussions with CPUC staff, it was suggested that where Public baselines are not available, the data would be included with Commercial until a later date when sector-specific data becomes available. PG&E is working to better align the program and customer-information data tracking systems with this sector. In the table below, we specify when data are not yet available and state that where better tracking is needed, we may be able to implement the requisite changes to track this data in 2018.

We note that additional studies are needed to fully report on the metrics required by the CPUC. For the Public Sector, PG&E is recommending a study that explores:

- A common definition of the Public Sector across PAs that is consistent with what will be used in future Potential and Goals studies.
- Total number of Public Sector buildings, and square footage (by PA) – note that these numbers should also specify which buildings and square footage are gas customers
- The best way to track Public Sector participants (i.e., Public sector may be better tracked by tracking the number of cities engaged/all cities or some other unit of measurement that better represents when a city conducts a project that covers multiple buildings, projects and customers).
- Best options for a program metric for "non-building" savings in this sector (equivalent to the depth of savings metric for buildings).

There are some metrics, such as savings by square foot, that will require additional data collection and may not provide an accurate picture of this sector given that many projects are not associated with square feet (e.g., street lighting, pumps, waste water facilities, etc.). PG&E recommends that the CPUC reconsider these metrics to measure depth of savings. We recommend that savings of participants/usage of participants would represent a better measure of depth of savings because the metric is normalized by the use of each participant. For example, knowing that a participant saves 1% of their own energy versus 4% gives a good sense of the depth of savings.

We also emphasize that the metrics in this document are not a replacement for EM&V, as the Commission acknowledges in the May 10, 2017 Metrics Ruling.[3]

Below we provide the Public sector metrics, as well as baselines, targets and notes. The contents of the table are based on the best available information at the time of the filing, and should be revised as new information becomes available.

[3] Metrics Ruling, Table 2, p. 4.

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Capturing Energy Savings	1A	Electricity Savings	75.5 Gross GWh/ year in 2015[a]	Reported net and gross savings; PTDB	62 Net GWh/yr (77 Gross GWh/yr)	65 Net GWh/yr (81 Gross GWh/yr)	66 Net GWh/yr (83 Gross GWh/yr)
	1B	Demand Savings	7.8 Gross MW /year in 2015 [a]		7 Net MW/yr (9 Gross MW/yr)	10 Net MW/yr (13 Gross MW/yr)	11 Get MW/yr (15 Gross MW/yr)
	1C	MMTherm Savings	2.0 Gross MM Therms/year in 2015[a]		2.9 Net MM Therms/yr (3.7 Gross MM Therms/yr)	3.8 Net MM Therms/yr (4.8 Gross MM Therms/yr)	4.3 Net MM Therms/yr (5.5 Gross MM Therms/yr)
[a] While the baselines for the Commercial, Industrial and Agricultural sector are based on 2011-2015 averages, we present only 2015 here because Public is a newer sector. PG&E is still developing tracking systems that will be aligned with reporting sector-level metrics since past programs that worked with these customers cut across Public and Commercial (SMB) programs. **Notes**: Metrics 1A-1C savings will be the first year annualized reported gas, electric, and demand savings (gross and net). **Notes on how targets were set:** Targets were set using the 2015 Potential and Goals study. PG&E analyzed past trends for meeting potential and goals and extrapolated to future savings estimates. For example, if past trends indicated that Public Sector buildings met only 75% of the potential in the sector, we used this number and an overall portfolio adjustment factor to determine future savings. Once the 2018 Potential and Goals Study is final, and new goals for 2018 and beyond are approved by the Commission, PG&E will update its short, mid, and long-term targets.							
Depth of interventions	2A	kWh Savings per project (~~building~~)	40,000 kWh	Numerator: Gross electric savings Denominator: Number of projects with kWh savings (PTDB) in 2015	Fluctuating around 2015 baseline	Fluctuating around 2015 baseline	Fluctuating around 2015 baseline
	2B	kW Savings per project (~~building~~)	4.1 kW	Numerator: Gross demand savings Denominator: Number of projects with kW savings (PTDB)	Fluctuating around 2015 baseline	Fluctuating around 2015 baseline	Fluctuating around 2015 baseline

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
	2C	Therm Savings per project (~~building~~)	1,780 Therms	Numerator: Gross therm savings metric Denominator: Number of projects with therm savings (PTDB)	Fluctuating around 2015 baseline	Fluctuating around 2015 baseline	Fluctuating around 2015 baseline
	3A	kWh Savings per square foot	9.982 kWh/SqFt	Numerator: Gross kWh value from savings metric Denominator: Total Square Foot covered by projects with savings (PTDB)	9.361 kWh/SqFt	9.034 kWh/SqFt	8.493 kWh/SqFt
	3B	Watts Savings per square foot	1.032 Watts/SqFt	Numerator: Gross kW value from savings metric Denominator: Total Square Foot covered by projects with savings (PTDB)	0.938 Watts/SqFt	1.243 Watts/SqFt	1.316 Watts/SqFt
	3C	Therm Savings per square foot	0.444 Therms/SqFt	Numerator: Gross Therm value from savings metric Denominator: Total Square Foot covered by projects with savings (PTDB)	0.639 Therms/SqFt	0.760 Therms/SqFt	0.799 Therms/SqFt

Notes: Savings are first year annualized reported gas, electric, and demand savings, gross only

PTDB means data is from the Program Tracking Database

Metrics 2A-2C - a participant is equal to a project. A participant is a unique combination of premise and account ID. PG&E proposes an alternative metric that measures the savings per participant because the number of Public Sector buildings served was unavailable at the time of this filing. PG&E can work towards collecting this information in 2018. PG&E is recommending a study to help determine baselines and set targets for metrics that rely on square footage data for the population of Public Sector buildings.
Metrics 3A-3C - Square foot data has not been collected to date. The value used here is a proxy using public square foot data from the CEC, as described in the appendix. PG&E will update the baseline after a year of data collection. The CEC data contains public data for K-12 and university only and does not separate out

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
government buildings that should be in public. As such, the proxy values here are higher than they should be because savings for all public buildings (including government buildings) are included in the numerator, but not in the square foot denominator. **Notes on how targets were set:** Metrics 2A-2C: PG&E is not targeting an increase in savings per customer in this sector because the overall goals are to reach additional customers, including many small and medium customers, which could have lower savings per participant numbers. PG&E will increase the number of customers to reach our goals, and expects depth of savings numbers will fluctuate around the 2015 baseline. Metrics 3A-3C: PG&E applied the changing savings from Metrics 1A-1C, changing number of participants from Metric 5and the same average square foot to obtain the targets. Additionally, PG&E provides proxies for any metrics including square foot data to conform with Commission Staff guidance in the metrics workshop and ad hoc CAEECC meetings, which was not to have any cells with "TBD". The values shown here provide an idea of the order of magnitude of the metric values, but have the potential to be significantly different from actual values. **Recommendation for better metric:** PG&E recommends that energy savings of participants/total energy usage of participants be considered as a replacement depth of saving metric. This would indicate the average savings at the premise/account level.							
Penetration of EE Programs	4	Percent of participation relative to eligible population	2.5% gas 6.7% gas	Numerator: Number of unique premise/accounts IDs (customers in PTDB) Denominator: Number of unique premise/accounts IDs (customers) from CIS	3% increase per year reaching 2.7% penetration in the short term (~7.3% gas customers)	3% increase per year reaching 2.9% penetration in the mid term (~8% gas customers)	3% increase per year reaching 3.3% penetration in long term (~9.0 % gas customers)
	5	Percent of Square foot of eligible population	2.46%	Numerator: Total Square Footage covered by projects with savings (PTDB) Denominator: Total commercial square foot from CEC	2.68%	2.92%	3.18%
Notes: This sector requires additional discussion and study around how to best track "participation." For the purpose of this filing, we rely on a participant being equivalent to a premise and account ID; however, Public sector may be better tracked by tracking the number of cities engaged (over all cities) or some other unit that better represents when a large city conducts a project that covers multiple buildings, projects and customers. Metric 6 - Square footage data (for the numerator) has not been collected to date. The value here is a proxy using public square footage data. PG&E will update the							

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
baseline after a year of data collection. The CEC data contains public data for K-12 and university only and does not separate out government buildings that should be in public. As such, the proxy values here are higher than they should be because savings for all public buildings (including government buildings) are included in the numerator, but not in the square footage denominator. **Notes on how targets were set:** Targets were set to demonstrate PG&E's commitment to expanding the reach of the Public sector over the 10 year period. Additionally, PG&E provides proxies for any metrics including square footage data to conform with Commission Staff guidance in the metrics workshop and ad hoc CAEECC meetings, which was not to have any cells with "TBD". The values shown here provide an idea of the order of magnitude of the metric values, but have the potential to be significantly different from actual values.							
Cost per unit saved	6A	Levelized cost of energy efficiency – kWh using PAC test	$0.074/kWh	Cost Effectiveness Tool (CET) value from filed annual savings report	Keep same as baseline in first 3 years	Reduce 10% over 2015 baseline	Reduce 10% or more over 2015 baseline
	6B	Levelized cost of energy efficiency – kW-yr using PAC test	$607.80/KW-yr	CET value from filed annual savings report	Keep same as baseline in first 3 years	Reduce 10% over 2015 baseline	Reduce 10% or more over 2015 baseline
	6C	Levelized cost of energy efficiency – Therm using PAC test	$0.497/Therm	CET value from filed annual savings report	Keep same as baseline in first 3 years	Reduce 10% over 2015 baseline	Reduce 10% or more over 2015 baseline
Notes: Levelized costs represent discounted lifecycle savings using Program Administrator Costs. Stakeholders agreed to use the PAC test in a June 30, 2017 California Energy Efficiency Coordinating Committee (CAEECC) meeting. Additionally, this test is the best metric for showing the success of managing the portfolio as all costs are within PG&E's control. As the Public sector is new, PG&E used its best estimates based on current program data to determine the baseline. In 2018, data will be tracked for the Public sector. PG&E will strive to keep levelized costs flat from baseline. However, due to new program administration and implementation structures, and other portfolio/program changes, flexibility is required to adapt to the new paradigm. PG&E will update its long-term targets once more data is gathered on the new administration and implementation structures. **Notes on how targets were set:** Targets are assumed to be steady in the first three years because PG&E will be selecting new vendors that may need time to ramp up. The 10% reduction was estimated at the portfolio based on savings goals and budgets.							
Investment in Energy	7	Dollars of investments (all	No baseline is available since	Public sector expenditures	See Public sector budgets	See Public sector budgets	See Public sector budgets

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Efficiency		sources)	much of the past Public funding has been in the Commercial sector.				
Notes: Public sector spending has historically been a part of the Commercial sector. The baseline and refined budgets will be determined in 2018. No targets are set at this time, as PG&E seeks guidance on how to best calculate this metric for the Public sector.							
Energy Intensity	8	Percent of square foot of eligible population benchmarked	PG&E has no data to determine a baseline and no good proxy data (see notes)	Numerator: Total buildings covered by projects with savings (PTDB) Denominator: Total commercial buildings over 50,000 Square Foot from CEC (5,755)	To be determined in 2018 once number of participants with benchmarking paid for by EE funds is known.	To be determined in 2018 once number of participants with benchmarking paid for by EE funds is known.	To be determined in 2018 once number of participants with benchmarking paid for by EE funds is known.
Notes: At this time, Public buildings (and square footage) are included in commercial numbers. There is no baseline for Public Sector buildings. PG&E can work to determine Public buildings that have undergone benchmarking in 2018 with the caveats indicated in the commercial sector above.							

Industrial Sector Metrics

PG&E has added a levelized cost metric to align with the other market sectors. Otherwise, the metrics adhere to the metrics recommended in the May 10, 2017 Metrics Ruling, and are consistent with recommendations made in the Commission's metrics workshop and ad hoc CAEECC meetings.

We also emphasize that the metrics in this document are not a replacement for EM&V, as the Commission acknowledges in the May 10, 2017 Metrics Ruling.[4]

Below we provide the industrial metrics, as well as baselines, targets and notes. The contents of the table are based on the best available information at the time of the filing, and should be revised as new information becomes available.

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Capturing Energy Savings	1A	Electricity Savings	Average of 126 Gross GWh/yr across 2011-2015	Program Tracking DB (PTDB)	79 Net GWh/yr (99 Gross GWh/yr)	75 Net GWh/yr (94 Gross GWh/yr)	73 Net GWh/yr (92 Gross GWh/yr)
	1B	Demand Savings	Average of 19.4 Gross MW/yr across 2011-2015		9 Net MW/yr (11 Gross MW/yr	8 Net MW/yr (10 Gross MW/yr	8 Net MW/yr (10 Gross MW/yr
	1C	MMTherm Savings	Average of 14.1 Gross MM therms/yr across 2011-2015		5.0 Net MM therms /yr (6.2 Gross MM Therms/yr)	4.8 Net MM therms /yr (6.0 Gross MM Therms/yr)	4.7 Net MM therms /yr (5.8 Gross MM Therms/yr)

Notes:
Metrics 1A-1C: Savings are the first year annualized reported gas, electric, and demand savings, gross and net.

Notes on how targets were set:
Targets were set using the 2015 Potential and Goals study. PG&E analyzed past trends for meeting potential and goals and extrapolated to future savings estimates. For example, if past trends indicated that Public Sector buildings met only 75% of the potential in the sector, we used this number and an overall portfolio adjustment factor to determine future savings. Once the 2018 Potential and Goals Study is final, and new goals for 2018 and beyond are approved by the Commission, PG&E will update its short, mid, and long-term targets.

[4] Metrics Ruling, Table 2, p. 4.

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Penetration of EE Programs and diversity of participants	3A	Percent of participation relative to eligible population - Small	1.2% electric 2.4% gas	Numerator: Number of unique premise/accounts IDs in the small range (customers in PTDB) Denominator: Number of unique premise/accounts IDs in the small range (customers) from CIS	2.5% electric 3% gas	1.3% electric 2.8% gas	1.3% electric 2.8% gas
	3B	Percent of participation relative to eligible population – Medium	2.6% electric 5.7% gas	Numerator: Number of unique premise and accounts IDs in the medium range (customers in PTDB) Denominator: Number of unique premise/accounts IDs in the medium range (customers) from CIS	3.5% electric 6.5% gas	3.1% electric 6.7% gas	3.1% electric 6.7% gas
	3C	Percent of participation relative to eligible population - Large	2.7% electric 7.3% gas	Numerator: Number of unique premise/accounts IDs in the large range (customers in PTDB) Denominator: Number of unique premise/accounts IDs in the large range (customers) from CIS	3.3% electric 8.3% gas	3.1% electric 8.6% gas	3.1% electric 8.6% gas

Notes: CIS is customer information service.

Notes on how targets were set:
PG&E is targeting more customers in the short term to meet aggressive goals. Goals go down in the mid and long term and therefore participation is reduced and kept steady.

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
New Participation	4A	Percent of customers participating that are new participants (annually) - Small	42%	Numerator: Number of unique premise/accounts IDs in the small range of use (customers in PTDB) who did not show up in the PTDB within the previous three years (2012-2014) Denominator: Number of unique premise/accounts IDs in the small range of use (customers in PTDB)	10% increase from baseline	15% increase from baseline	30% increase from baseline
	4B	Percent of customers participating that are new participants (annually) – Medium	31%	Numerator: Number of unique premise/accounts IDs in the medium range of use (customers in PTDB) who did not show up in the PTDB within the previous three years (2012-2014) Denominator: Number of unique premise/accounts IDs in the medium range of use (customers in PTDB)	10% increase from baseline	15% increase from baseline	30% increase from baseline
	4C	Percent of customers participating that are new participants (annually) - Large	31%	Numerator: Number of unique premise/accounts IDs the large range of use (customers in PTDB) who did not show up in the PTDB within the previous three years (2012-2014) Denominator: Number of unique premise/accounts IDs in the large range of use (customers in PTDB)	12% increase from baseline	15% increase from baseline	18% increase from baseline
Notes: Assuming a customer is new if they have not participated in the last three years. For example, the baseline values are customers participating in 2015 who did not participate in 2012, 2013, or 2014. Electric and gas participants are combined due to data availability at the time of filing. However, participation baselines and targets can be split by electric and gas participants moving forward.							

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Notes on how targets were set: PG&E has set aggressive goals for new participants to demonstrate a commitment to bringing industrial savings to a wider portion of the market.							
Cost per unit saved	5A	Levelized cost of energy efficiency – kWh using PAC test	$0.044/kWh	Cost Effectiveness Tool (CET) value from filed annual savings report	Same as baseline	5% under baseline	5% under baseline
	5B	Levelized cost of energy efficiency – kW-yr using PAC test	$287.00/kW-yr	Cost Effectiveness Tool (CET) value from filed annual savings report	Same as baseline	5% under baseline	5% under baseline
	5C	Levelized cost of energy efficiency – Therm using PAC test	$0.367/Therm	Cost Effectiveness Tool (CET) value from filed annual savings report	Same as baseline	5% under baseline	5% under baseline
Notes: Levelized costs represent discounted lifecycle savings using Program Administrator Costs. Stakeholders agreed to use the PAC test in a June 30, 2017 California Energy Efficiency Coordinating Committee (CAEECC) meeting. Additionally, this test is the best metric for showing the success of managing the portfolio as all costs are within PG&E's control. PG&E may update its long-term targets once more data is gathered on the new administration and implementation structures. **Notes on how targets were set:** Targets are assumed to be steady in the first three years because PG&E will be selecting new vendors that may need time to ramp up. The 5% reduction was estimated at the portfolio based on savings goals and budgets.							

Agricultural Sector Metrics

The agricultural metrics adhere to the metrics recommended in the May 10, 2017 Metrics Ruling, and are consistent with recommendations made in the Commission's metrics workshop and ad hoc CAEECC meetings.. Below we provide the agricultural metrics, as well as baselines, targets and notes.

We also emphasize that the metrics in this document are not a replacement for EM&V, as the Commission acknowledges in the May 10, 2017 Metrics Ruling.[5]

The contents of the table are based on the best available information at the time of the filing, and should be revised as new information becomes available.

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Capturing Energy Savings	1A	Electricity Savings	Average of 62.5 Gross GWh/ year across 2011-2015	Program Tracking DB (PTDB)	49 Net GWh/yr (62 Gross GWh/yr)	52 Net GWh/yr (65 Gross GWh/yr)	54 Net GWh/yr (68 Gross GWh/yr)
	1B	Demand Savings	Average of 19.1 Gross MW / year across 2011-2015		11 Net MW/yr (13 Gross MW/yr)	11 Net MW/yr (14 Gross MW/yr)	12 Net MW/yr (15 Gross MW/yr)
	1C	MMTherm Savings	Average of 1.2 Gross MM Therms/year across 2011-2015		0.5 Net MM Therms/yr (0.6 Gross MM Therms/yr)	0.5 Net MM Therms/yr (0.6 Gross MM Therms/yr)	0.5 Net MM Therms/yr (0.6 Gross MM Therms/yr)

Notes:
Metrics 1A-1C: Savings are the first year annualized reported gas, electric, and demand savings, gross and net.

Notes on how targets were set:
Targets were set using the 2015 Potential and Goals study. PG&E analyzed past trends for meeting potential and goals and extrapolated to future savings estimates. For example, if past trends indicated that Public Sector buildings met only 75% of the potential in the sector, we used this number and an overall portfolio adjustment factor to determine future savings. Once the 2018 Potential and Goals Study is final, and new goals for 2018 and beyond are approved by the Commission, PG&E will update its short, mid, and long-term targets.

[5] Metrics Ruling, Table 2, p. 4.

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Penetration of EE Programs and diversity of participants	3A	Percent of participation relative to eligible population - Small	0.7% electric 10.9% gas	Numerator: Number of unique premise/accounts IDs in the small range (customers in PTDB) Denominator: Number of unique premise/accounts IDs in the small range (customers) from CIS	0.7% per year electric 11.5% per year gas	0.8% per year electric 12.2% per year gas	0.8% per year electric 13.0% gas
	3B	Percent of participation relative to eligible population – Medium	1.6% electric 15.5% gas	Numerator: Number of unique premise and accounts IDs in the medium range (customers in PTDB) Denominator: Number of unique premise/accounts IDs in the medium range (customers) from CIS	1.7% per year electric 16% per year gas	1.8% per year electric 17% per year gas	2.0% per year electric 18% per year gas
	3C	Percent of participation relative to eligible population - Large	2.3% electric 20.0% gas	Numerator: Number of unique premise/accounts IDs in the large range (customers in PTDB) Denominator: Number of unique premise/accounts IDs in the large range (customers) from CIS	2.4% per year electric 21.1% per year gas	2.6% per year electric 22.4% per year gas	2.7% per year electric 22.4% per year gas
Notes: CIS is customer information service (i.e., utility billing system information that contains the entire population). For this sector, CIS customers are designated as "agricultural" **Notes on how targets were set:** PG&E expects to increase participation about 2% per year over the previous year to meet goals.							
Cost per unit saved	4A	Levelized cost of energy efficiency – kWh using PAC test	$0.058/kWh	Cost Effectiveness Tool (CET) value from filed annual savings report	$0.058 /kWh (Same as baseline)	$0.055 / kWh (5% lower than baseline)	$0.055 / kWh (5% lower than baseline)
	4B	Levelized cost of energy efficiency – kW-yr using	$233.90/kW-yr	CET value from filed annual savings report	$233.90 /kW (Same as baseline)	$222.21 / kW (5% lower than baseline)	$222.21 / kW (5% lower than baseline)

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
		PAC test					
	4C	Levelized cost of energy efficiency – Therm using PAC test	$0.449/Therm	CET value from filed annual savings report	$0.449 / therm (Same as baseline)	$0.427 / therm (5% lower than baseline)	$0.427 / therm (5% lower than baseline)

Notes:
Levelized costs represent discounted lifecycle savings using Program Administrator Costs. Stakeholders agreed to use the PAC test in a June 30, 2017 California Energy Efficiency Coordinating Committee (CAEECC) meeting. Additionally, this test is the best metric for showing the success of managing the portfolio as all costs are within PG&E's control.

Notes on how targets were set: Targets are assumed to be steady in the first three years because PG&E will be selecting new vendors that may need time to ramp up. The 10% reduction was estimated at the portfolio based on savings goals and budgets.
PG&E may update its long-term targets once more data is gathered on the new administration and implementation structures.

Workforce Education and Training (WE&T)

The metrics below are broken out into (1) Collaboration-based metrics that leverage outside partnerships, and (2) Energy Center-based metrics.

There is a need for additional discussions, revisions to WE&T data collection systems, and additional research or market-based studies to support the metrics desired by the CPUC. PG&E's WE&T team will: (1) continue ongoing discussions with CPUC staff and the CEC to prioritize occupations, (2) seek to institute changes to registration and exit survey processes, and (3) initiate any research or studies needed to support metrics for this area. The specific research required for WE&T includes:

- A study to contribute to prioritization, review available employment data and other secondary sources, or gather additional market intelligence on the total numbers eligible. Depending on the needs of the other PAs, PG&E anticipates that this would be a joint IOU study.

We also emphasize that the metrics in this document are not a replacement for EM&V, as the Commission acknowledges in the May 10, 2017 Metrics Ruling.[6]

Below we provide the WE&T metrics, as well as baselines, targets and notes. The contents of the table are based on the best available information at the time of the filing, and should be revised as new information becomes available.

WE&T Metrics related to Collaborations

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Expanding WE&T Reach via Collaborations	1	Number of collaborations (with documented description of outcomes and metrics for each)	0 that meet the current definition (see note below)	Collaboration agreements; Program tracking information	3-8 active collaborations depending on budget	3-8 active collaborations depending on budget	3-8 active collaborations depending on budget
	2	Percentage of partnerships that achieve mutual goals and outcomes, as defined in an annual	No baselines exist as this is a new metric. Collaborations are in the process of being defined; however, PG&E	Collaboration agreements; Program tracking information	100% of outcomes specified in agreement are met over timeframe specified in	100% of timeframe specified in agreement	100% of timeframe specified in agreement

[6] Metrics Ruling, Table 2, p. 4.

		collaboration agreements	is providing information on past similar efforts in a note below for context		agreement		

Notes: Collaborations and their metrics will be further defined in Implementation Plans.

Definition of collaborations: The WE&T program will employ different types of collaborations to reflect different types of relationships with partners, and likely different outcomes or benefits. Using written collaboration agreements, collaborations will document the agreed-upon effort and outcomes of the collaboration. Collaborations will document the agreed-upon effort and outcomes of the collaboration in Implementation Plans or collaboration agreements. Possible collaboration outputs were included in the PGE& WET& Business Plan in Appendix C (Proposed WE&T Program Structure), and include customized technical education and training programs for an agreed-upon audience, training materials development support for an agreed-upon audience, train-the-trainer for a specific set of trainers who will use the information to train their students, customized building performance tool loans specific to the organization. Collaboration outcomes include, but are not limited to course participants use information as part of their jobs, collaborating organization's training program and/or training materials undergo a change that introduces, enhances, or expands energy efficiency content. During the documentation of these efforts, the PAs will work with the collaborating organization to determine reasonable metrics to document outcomes. The outcomes-based metrics for each member of a collaboration and for the collaboration as a whole will be included in implementation plans.

PG&E note on past collaborations: While WE&T does not have any collaborations that currently meet the definition above, similar collaborations in progress include working with carpenters in Southern California to train them about heat transfer and testing buildings (e.g., how to use infrared tools and blower door tests). These past collaborations were not formalized through collaboration agreements, nor did they require metrics; however, future collaborations will meet the requirements described above. Collaborations under discussion include working with Community Colleges to develop new and/or share existing training materials or to provide training on Energy Audits and Analytics (specific details of the collaboration will be based on the needs of the Community Colleges).

Notes on how targets were set: These targets in the first metric represent PG&E goals, however, some of the collaborations will be joint IOU collaborations funded by multiple PAs. PG&E used past experience to determine a range for the possible number of collaborations in each time period. The targets for the second metric demonstrate WE&T's desire to deliver on each collaboration. As such, we set targets of 100%. These are aspirational and may need to be reset based on future data, as the ability to deliver on some outcomes may be outside of the control of the PAs.

WE&T Metrics related to Trainings at Energy Centers

Area	Metric Number	Metrics	Baseline (7/16 – 6/17)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Penetration of training	3A	Architects	319	Program tracking, specifically registration	10% increase annually in each	Mid-term and long-term increases will be based on more accurate data	
	3B	Building Owners &	198				

Area	Metric Number	Metrics	Baseline (7/16 – 6/17)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
		Managers		data for trainings in common pre-defined workforce categories	of the targeted categories (note that this goal is illustrative and may change based on gathering additional data on population numbers and' needs)	as of end of year three. WE&T may need to prioritize new groups in the mid- or long-term based on the CEC's needs.	
	3C	Builders	132				
	3D	Building Operations and Maintenance	47				
	3E	Designers - Other	397				
	3F	Electrical Engineers	117				
	3G	Electrical Trades/Contractors	74				
	3H	Energy & Sustainability Manager / Consultant	384				
	3I	Home Performance Rater/Contractor	44				
	3J	HVAC / Mechanical Engineer	321				
	3K	HVAC Trades/Contractors	100				
	3L	*Other* [a]					

[a] The majority of "other" can be broken down and is available at the program level. This includes categories such as Building Code Officials (which are trained at the Energy Centers but prioritized under C&S), Commissioning Agents, and Solar Contractors, among others. We do not break out "other" at the business plan level since we are not setting targets for these groups, but PG&E tracks this information for 36 unique occupations.

Notes:The groups shown above represent "high priority groups." At the time of this filing (July 14, 2017), these priorities were based on past discussions with key WE&T stakeholders; however, WE&T is in the process of revising the priority groups and targets. WE&T and the CPUC have started discussions with the CEC to determine "high priority occupations." WE&T will select "high priority occupations" that are aligned with CEC's Energy Actions Plans. These will be finalized by the end of Q2 2018. The data in this table will be updated with revised high-priority groups, and more accurate based data (based on 18 months of data) by the end of Q2 2018.

Notes on how targets were set: Targets were set to demonstrate PG&E's commitment to prioritizing these groups, but will need to be reset once additional information becomes available on the numbers served in a year, and the total population in the occupation.

Area	Metric Number	Metrics	Baseline (7/16 – 6/17)	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Penetration of training (cont.)	4	Percent of participation relative to eligible target population for *training focused on high-priority occupations doing high EE potential work*	This is a new metric. Baseline will be established after a study to size the eligible populations has been completed. We anticipate that this study will begin in early 2018.	(Numerators) Program tracking, specifically registration data for trainings in common pre-defined job categories as stated above (Denominators) Eligible populations from employment data, secondary sources, or a market study	Will seek to increase over time, but exact increase will be determined once baseline is known	Will seek to increase over time, but exact increase will be determined once baseline is known	Will seek to increase over time, but exact increase will be determined once baseline is known
Notes: For PG&E, the high-priority workforce categories included in this metric will be the 7 occupations (or equivalent) shown in the metric above. This metric requires a study to contribute to prioritization, review available employment data and other secondary sources, or gather additional market intelligence on the total numbers eligible. Depending on the needs of the other PAs, we anticipate that this would be a joint IOU study.							
Penetration of training and <u>diversity of participants</u>	5	Percent of disadvantaged participants trained (*specific definition for disadvantaged still under discussion*)	8%	Registration zip codes for training participants in program databases matched to disadvantaged zip codes	8% of all trainees (or in line with population of disadvantaged if it changes over time)	8% of all trainees (or in line with population of disadvantaged if it changes over time)	8% of all trainees (or in line with population of disadvantaged if it changes over time)
Notes: The baseline and targets above currently assume the definition of a disadvantaged worker that received WE&T stakeholder support in 2015—an individual who lives in a ZIP code that meets at least one of these criteria: 1) ***High unemployment zip code*** where unemployment rate is at least 150% of the median unemployment rate for the county or for the state or 2) ***Low income zip code*** where average household income is 50% below Area Median Income (AMI). A disadvantaged worker can also be a referral from collaborating community based organizations (CBOs), state agencies, etc. The WE&T Energy Centers will compare data collection and reporting for this metric to improve the accuracy of this data, where possible. **Notes on how targets were set:** The targets are set based on the relative population of disadvantaged workers in PG&E territory in 2015. PG&E expects to continue to serve disadvantaged workers in proportion to their representation in the territory.							
Notes: Question will be added to all of PG&E's exit surveys by end of Q3 2017. **Notes on how targets were set:** Targets were set to be representative of PG&E's disadvantaged worker population across its territory. As new census data becomes available, PG&E will reset its targets accordingly.							

Codes and Standards (C&S)

C&S includes metrics that may cut across multiple PAs. The metrics below are broken out into (1) PG&E metrics, and (2) Statewide metrics.

We also emphasize that the metrics in this document are not a replacement for EM&V, as the Commission acknowledges in the May 10, 2017 Metrics Ruling.[7]

Codes and Standards Saving Metrics – PG&E

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
All	1A	Electricity Savings (Net)[1]	Average of 361 Net GWh/ year across 2011-2015	Ex ante savings claims	1,190 Net GWh / 18 Net MMT / 307 Net MW	875 Net GWh / 18 Net MMT / 268 Net MW	480 Net GWh, 10 Net MMT, 164 Net MW
	1B	Demand Savings (Net)[1]	Average of 60 Net MW /year across 2011-2015				
	1C	MMTherm Savings (Net) [1]	Average of 0.59 Net MM Therms / year across 2011-2015				
Notes: [1]Will be reported in absolute terms, as well as in the context of the portfolio (i.e., % of net portfolio GWh, MW, MMTherms based on portfolio forecasts); and the context of CEC's SB350 forecast (i.e., % of SB 350 based on future CEC forecast). Targets are PG&E-specific. Each IOU will have individual targets. Targets will be adjusted upon completion of the most recent codes & standards impact evaluation.							

[7] Metrics Ruling, Table 2, p. 4.

Codes and Standards Metrics – Statewide

Area	Metric Number	Metrics	Baseline	Metric Source	Short-Term Targets (1-3 years)	Mid-Term Targets (4-6 years)	Long-Term Targets (7-8+ years)
Advocacy (CA)	2	Number of measures supported by CASE studies in rulemaking cycle (current work) [2]	18 Title 20; 12 Title 24	IOU supported proposals from program tracking related to CASE studies	18 Title 20; 12 Title 24	18 Title 20; 12 Title 24	18 Title 20; 12 Title 24
	3	Number of measures adopted by CEC in rulemaking cycle (indicator of past work) [3]	18 Title 20; 12 Title 24	IOU supported proposals from program tracking related to CASE studies; "adopted" from CEC Rulemaking process	18 Title 20; 12 Title 24	18 Title 20; 12 Title 24	18 Title 20; 12 Title 24
Notes: [2] Targets for the first two metrics are from the potential/goals study data request response listing 2016-18 Title 20 and Title 24 measures. Actual number of measures that will need to be supported in the short-, mid- and long-term could go up or down. [3] PG&E and the C&S program cannot control the number adopted; results will be reported in absolute terms and as a percent of total standards proposals adopted. Please also note that while Title 24 follows a three-year cycle, Title 20 measures are not introduced on a regular cycle.							
Advocacy (Federal)	4	% of DOE appliances added to federal register supported by IOUs (# IOU supported/ # DOE adopted)	100%	Federal register and program tracking databases	100%	100%	100%
	5	% of federal standards adopted for which a utility advocated					
Notes: Metric 4: Supported indicates that IOUs conducted research and docketed a letter in response to a DOE rulemaking event. Metric 5: PG&E proposes to report the percentage of federal standards adopted for which a utility advocated. This is slightly different from the metric proposed in the May 10 Metrics ruling, which requests the number of federal standards adopted for which a utility advocated. PG&E believes reporting a percentage is more meaningful and insightful.							

Local Government Reach Codes	6	# reach codes implemented	6 during the past 12 months	CEC list of reach codes adopted by local jurisdictions	30 reach codes per Title 24 code cycle	30 reach codes per Title 24 code cycle	30 reach codes per Title 24 code cycle
Notes: The numbers will be reported for individual regional energy networks (RENs) and for non-REN areas. The Mid-Term and Long-Term targets are dependent on the State C&S efforts that impact those periods, hence the Mid-Term and Long-Term targets may have to be adjusted as new T-24 codes are implemented.							
Compliance Improvement	7	% increase in code compliance knowledge pre/post training	~26 percentage points	Knowledge assessment surveys conducted by compliance improvement program staff; baseline is average from 760 2015 and 2016 class surveys	20%	20%	20%
Notes: Reporting will be done for all class modalities at the business plan level, but will be further disaggregated for sub-program metric reporting. Program funds will be employed for administering the survey to a representative sample of attendees. Results are electronically tracked. PG&E surveys all attendees. Other IOUs have been surveying a sample of attendees in order to maximize the time available for instruction. The improvement score is calculated based upon the averaging of individual respondent results. Only matched pairs of responses are employed for each respondent. A minimum of 3 matched responses is required for inclusion in the calculation. The percentage improvement is determined for each participant as the number of "post class" correct answers divided by the number of "pre class" correct answers. The percentage improvement is averaged over all participants.							

Emerging Technologies (ET) Program

Southern California Edison (SCE) and Southern California Gas Company (SCG) have been proposed as the lead program administrators for the statewide Emerging Technologies (ET) program. As such, PG&E is not submitting metrics for the ET program, but will contribute to the overall program and rely on the metrics provided within SCE's and SCG's filing.

Appendix of Residential Source Data for Calculating Baselines

Documentation of Residential Segments (SF v. MF) For Savings and Participation Metrics

For the sake of this filing, SF is defined as detached dwellings and MF is defined as the sum of shared wall and common area dwellings. Note that while the number of dwellings without these designations are small, some values are not included. Moreover, it is possible that condominiums or other shared wall units are SF units that participate in SF programs. This filing represents the best available information as of July 14th.

The total square footage for all PG&E MF units based on the "shared wall" and "common area" flags is about 1.5M, or approximately the same as documented in the "2010-2012 PG&E and SCE Multifamily Energy Efficiency Rebate Program (MFEER) Process Evaluation and Market Characterization Study" (Cadmus study) by The Cadmus Group, Inc. While the PG&E-based counts include Common Areas, and the data shown below are only units. The esitmate of 1.5M MF represents the best estimate at the time of the July 14th filing.

Table 2. Comparison of Multifamily Market Size Estimates from Two Data Sources

Number of Units per Building	Number of Households			
	RASS		ACS	
	PG&E	SCE	PG&E	SCE
Two to Four Units	368,305	302,930	535,519	430,285
Five or More Units	664,317	657,923	1,054,662	1,308,769
Total	1,032,622	960,853	1,590,181	1,739,228

Documentation of Residential Segments (SF v. MF) For Levelized Cost Metrics

The levelized cost metrics:

- Do not include all Residential programs (e.g., Primary Lighting, PGE24041, is not included)
- SF Includes Audits portion of Residential Energy Advisor (PGE21001), which is 16.4% of KWh, and 0% of KW and Therms.
- The Home Energy Reports portion is not included in MF
- Energy Upgrade California (PGE21004) is split between SF and MF. SF accounts for 79.0% of KWh, and 90.7% of KW and Therms

The programs which are entirely in MF or SF are in the following tables:

Multifamily		
	PGE21003	Multifamily Energy Efficiency Rebates Program
	PGE21007	California New Homes Multifamily
	PGE21008	Enhance Time Delay Relay
MF Portion	PGE21004	Energy Upgrade California
Single Family		
Audits Portion	PGE21001	Residential Energy Advisor
	PGE21002	Plug Load and Appliances
SF Portion	PGE21004	Energy Upgrade California
	PGE21005	Residential New Construction
	PGE21006	Residential HVAC
	PGE210010	Pay for Performance Pilot
	PGE21009	Direct Install for Manufactured and Mobile Homes
	PGE210132	RSG The Smarter Water Heater
	PGE210011	Residential Energy Fitness Program

The residential sector levelized costs include the programs shown above as well as:

PGE2100	**Residential Energy Efficiency Programs Total**
PGE21001	Residential Energy Advisor
PGE21004	Energy Upgrade California

In total, MF programs during the baseline period included California New Homes MF, MFEER, MF EUC, and Third-party programs (Cooling Optimization Program) but the full data set was not available in time for the July 14th filing. This baseline number will need to be re-run before the first reporting cycle.

In total, SF programs during the baseline period included Energy Upgrade California, Lighting Exchange Program, PLA, Res HVAC, Res New Construction, Smarter Water Heaters, Residential Audits, and third-party programs that are not designated as MF. DI for Manufactured and Mobile Homes is also included in SF.

Note that upstream programs are not included in the SF and MF levelized costs, but some upstream is included in the overall Residential sector number; however, Primary Lighting is not included in any of the levelized cost metrics. As mentioned in the notes within PG&E's January 17th business plan, "PG&E removed the benefits and costs associated with the Primary Lighting program, in anticipation of program changes, and to motivate the pursuit of longer life measures."

Documentation of Multi-family Building Counts and Estimated Square Footage
The estimated number of MF properties (171,702 buildings) is from Table 5 in the Cadmus study.

Table 5. Estimated Number of Properties by Building Size and Utility

Number of Units per Building	Buildings	
	PG&E	SCE
2 Units	60,305	32,092
3 to 4 Units	64,908	49,580
5 to 9 Units	29,341	29,128
10 to 19 Units	10,675	12,047
20 to 49 Units	3,927	4,470
50 or More Units	2,545	2,667
Total Properties	171,702	129,984

Documentation of Multi-family Estimated Square Footage

An approximate square footage value is calculated by looking at the breakdown of the number of 2-4 unit buildings in PG&E territory (7%, 46%, 39%, 7%) and taking a weighted average to determine the average size of 2-4 unit buildings (i.e., about 1,020 square feet). Square foot data from the CLASS website, using the following choices: *03. Cooling Proportions , Report Year: 2012 , Weighting Scheme: Census Weights, Group By: [Type of Residence], [Electric Utility], [Total Heated Floorspace] , Filters: [Rent or Own] IN ('Occupied without payment of rent','Own/Buying','Rent/Lease') AND [Total Heated Floorspace] IN ('_Less than 0600 sq.ft.','0600 to 0999 sq.ft.','1,000 to 1,599 sq.ft.','1,600 to 1,999 sq.ft.','2,000 to 2,399 sq.ft.','2,400 to 2,999 sq.ft.','3,000+ sq.ft.','Dont Know') AND [Type of Residence] IN ('01 - Single Family Detached','02 - Apt 2-4 Units','03 - Apt 5+ Units','04 - Duplex (Single Story)','05 - Mobile Home','06 - Townhouse/Rowhouse (2-4 Unit Multi-Story)') AND [Electric Utility] IN ('PG&E','SCE','SDG&E')*

Units in each category were assumed to be the mid-point of that category, with units less than 600 being an average of 500 square feet (mid-point of 400 and 600). The same was done to determine the average size of a unit in a 5+ building (855 square feet). These values were then applied to the number of units shown in the Cadmus study to determine an estimate of the total square footage of MF units in PG&E's territory. Note that this does not include common areas.

						Percentages		
2012	02 - Apt 2-4 PG&E	_Less than 0600 sq.ft.	0.20%	**500**	0.2	**7%**	36	
2012	02 - Apt 2-4 PG&E	0600 to 0999 sq.ft.	1.30%	**750**	1.3	**46%**	348	
2012	02 - Apt 2-4 PG&E	1,000 to 1,599 sq.ft.	1.10%	**1300**	1.1	**39%**	511	
2012	02 - Apt 2-4 PG&E	1,600 to 1,999 sq.ft.	0.20%	**1750**	0.2	**7%**	125	
2012	02 - Apt 2-4 PG&E	Dont Know	1.40%		**2.8**		**1020**	**weighted average square feet for 2-4 units**

2012	03 - Apt 5+ PG&E	_Less than 0600 sq.ft.	1.00%	16%	48	
2012	03 - Apt 5+ PG&E	0600 to 0999 sq.ft.	3.80%	59%	472	
2012	03 - Apt 5+ PG&E	1,000 to 1,599 sq.ft.	1.50%	23%	299	
2012	03 - Apt 5+ PG&E	1,600 to 1,999 sq.ft.	0.10%	2%	36	
2012	03 - Apt 5+ PG&E	Dont Know	1.70%	6.40%	855	average for 5+

Table 2. Comparison of Multifamily Market Size Estimates from Two Data Sources

Number of Units per Building	Number of Households			
	RASS		ACS	
	PG&E	SCE	PG&E	SCE
Two to Four Units	368,305	302,930	535,519	430,285
Five or More Units	664,317	657,923	1,054,662	1,308,769
Total	1,032,622	960,853	1,590,181	1,739,228

Number of units	**Average size in sq. feet**	Multiplying Number of Units by Avg. Size

Two to four	535,519	1,020.00	546,229,380	
Five+	1,054,662	855.00	901,736,010	
			1,447,965,390	**square feet**

Adjustment Factor to Reduce to # Gas HH when not available (i.e., for estimating MF square footage served by GAS)

5 M gas HH/5.6 M electric HH = **0.89 or 89%**

Note that this is a rough estimate and will need additional research. Future research around square footage in MF buildings should distinguish between units served by electric-only v. electric and gas units, if possible.