2018-2025 Energy Efficiency Business Plan *Snapshot*

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Together, Building a Better California

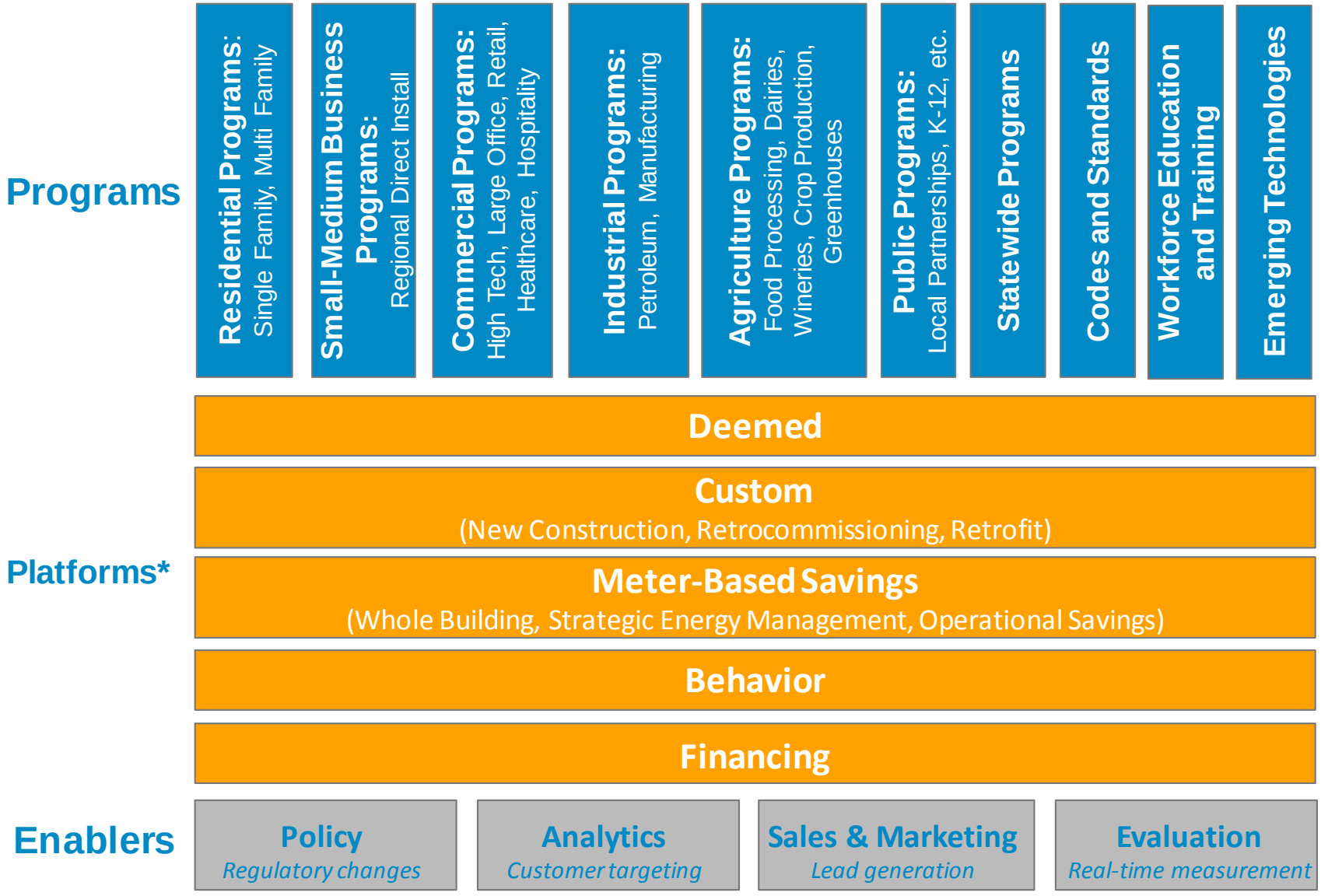
PG&E's Portfolio Vision and Guiding Principles set the stage for our BP

Portfolio Vision: Evolve our portfolio to maximize cost-effective energy savings by using our knowledge of our customers, cultivating relationships with new partners, and offering programs that drive value and innovation for our customers

Business Plan Guiding Principles:

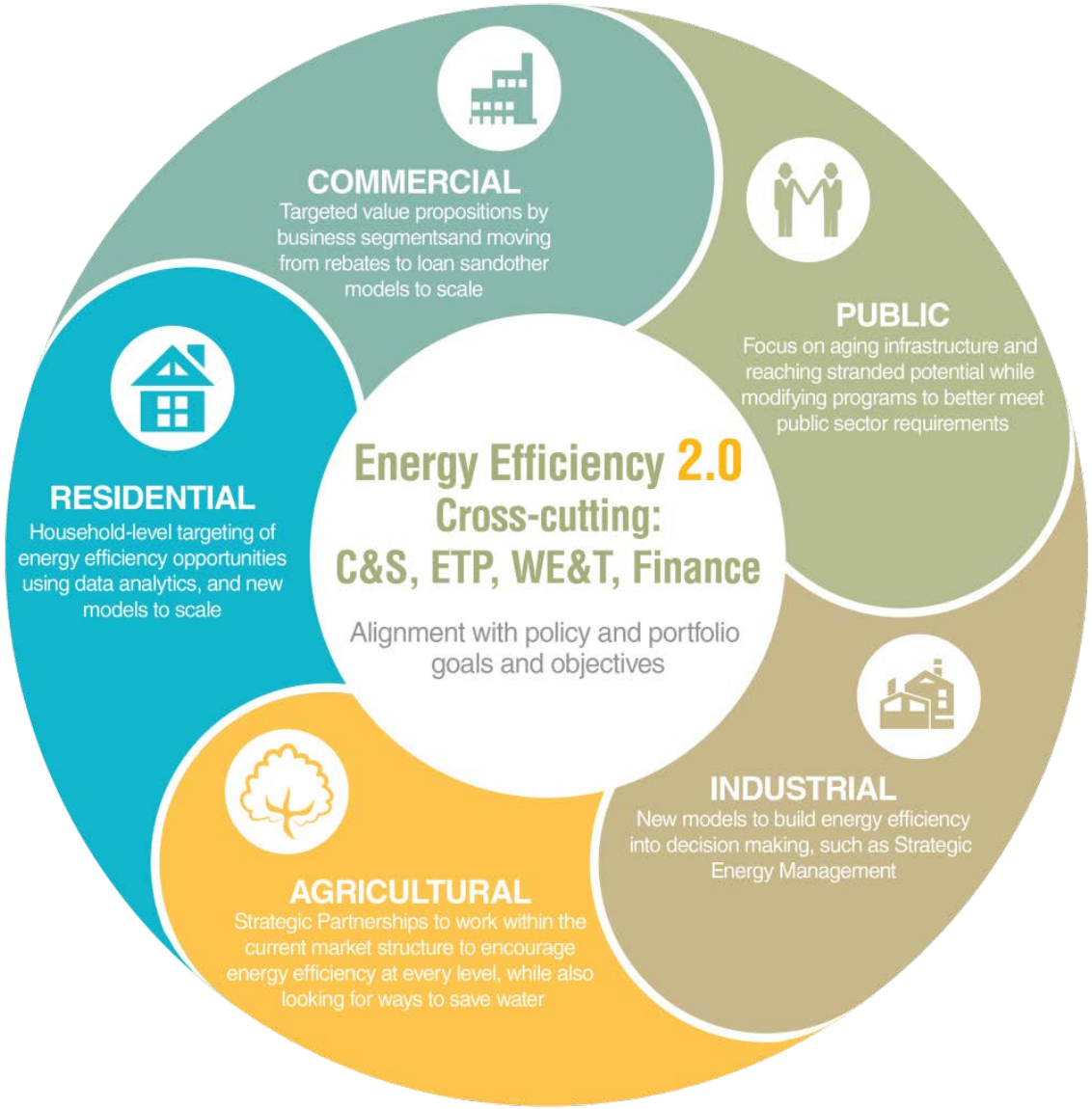
1. Scale energy efficiency (EE) cost-effectively by:
   - Deploying new program models
   - Targeting customers with high savings potential
   - Seeking the right technology strategies
   - Making EE investments more attractive to customers and the market
2. Make energy efficiency offerings easier to access by streamlining the portfolio
3. Develop energy efficiency as a cost-effective grid resource that is integrated within PG&E with other distributed energy resources, enabling deeper savings, greater penetration, and location-specific efficiency

Our Revised Portfolio Structures favors simplification to yield scaled energy savings



Platforms are how PG&E measures, pays for, and claims energy savings.

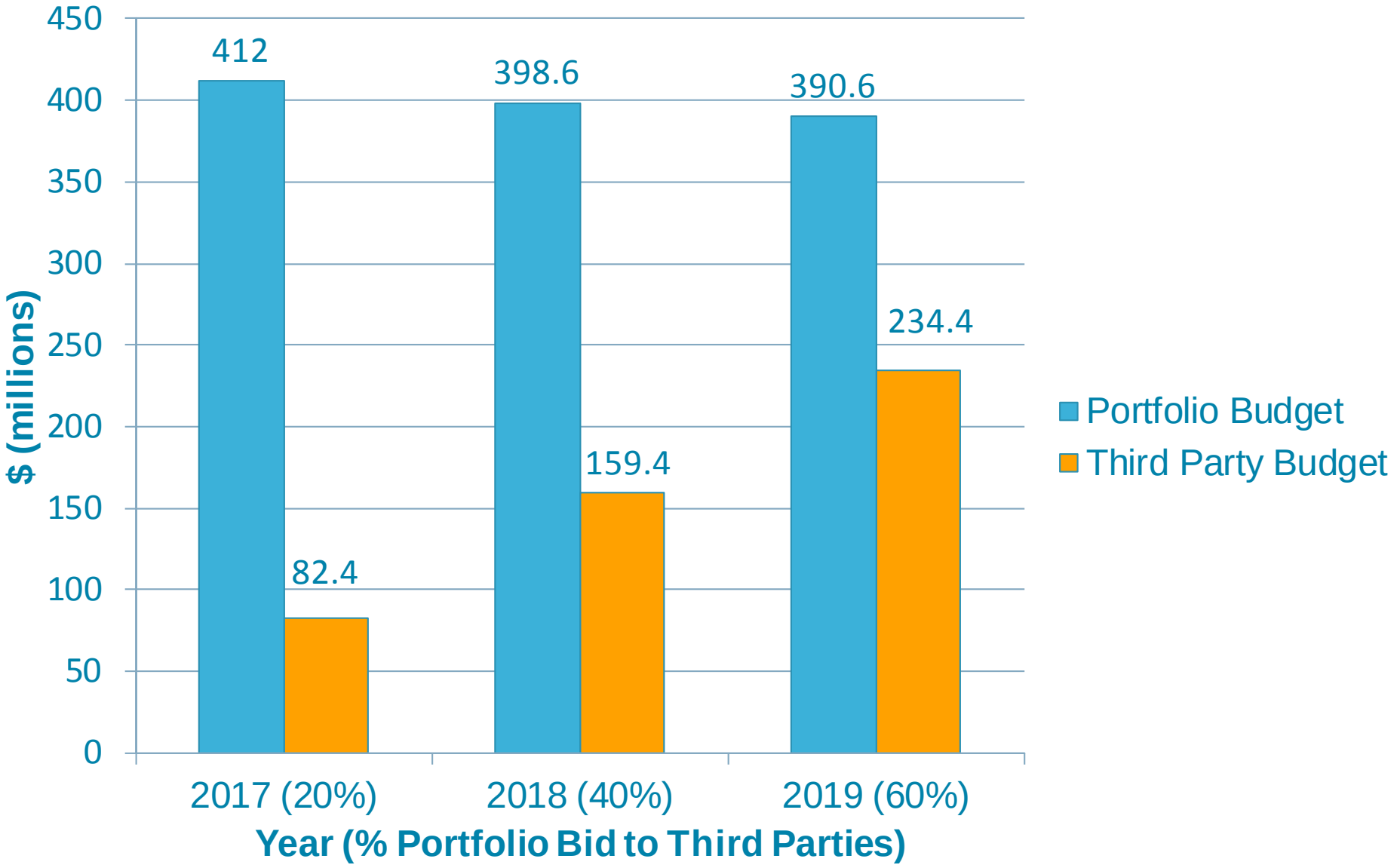
Our BP defines strategies for each sector to meet our Portfolio Vision and California's goals



5 key portfolio evolutions and innovations put us on the path to realize our vision and goals

1. Transition to third party program design and delivery
2. Transforming markets through the new statewide model
3. New program models to scale cost-effectively
4. New transaction structures to expand the reach of ratepayer dollars
5. Customer targeting via interval data analytics

By 2019, at least 60% of our total portfolio budget will be bid out to third parties



Note: Portfolio budgets do not include BayREN and MCE

PG&E will solicit EE programs for all sectors that align with our overall portfolio goals

Short-term Solicitation Strategies

- Programs that address new, short-term interventions
- Statewide programs to realize cost-efficiencies
- Opportunities to gain efficiencies, streamline activities, improve access for customers
- “Platforms”

Solicitation Timeline

- Phase 1 RFPs issued Q3 2017

PG&E “In-House” Activities

- Pilot program design/delivery (e.g., Retail Products Platform)
- Core utility operations (e.g., rebate processing)
- Activities supporting regulatory obligations (e.g. quality assurance/quality control)

Thank YOU!
Questions?

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Appendix

Market Sector Vision, Focus, and Goals

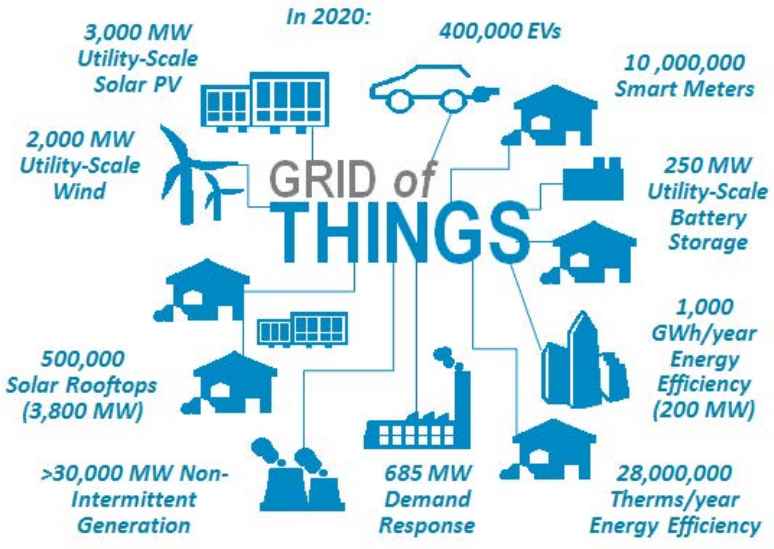
Sector	Vision	Focus	Goals
Residential	Achieve deep energy savings and robust grid benefits through focused customer engagement, data-driven programs that leverage market actors, and strong partnerships	Household-level targeting and new program models	• Save 817 GWh, 65 MW, and 11.7 MM therms by 2025 • Increase savings from multifamily projects • Increase the number and capacity of EMTs • Increase operational efficiency • Assist reaching 2020 ZNE goal
Commercial	Empower large and small and medium businesses to better understand, manage, and eliminate unnecessary energy use	Targeted value propositions that make a business case for EE, and moving from rebates to loans and more use of private capital	• Save 1,416 GWh, 222 MW, and 40 MM therms by 2025 • Increase average savings per participant • Increase the number of EMTs • Increase operational efficiency • Assist reaching 2030 ZNE goals
Industrial	Enable customers to better understand, manage, and eliminate unnecessary energy use	Strategic energy management	• Save 608 GWh, 67 MW, and 38.6 MM therms by 2025 • Broaden customer participation
Agriculture	Enable customers to better understand, manage, and eliminate unnecessary energy use	Strategic partnerships and new EE opportunities that also save water	• Save 414 GWh, 89 MW, and 3.8 MM therms by 2025 • Increase operational efficiency • Broaden customer participation • Provide 15% of customers with access to assistance and tools that break down operational energy use
Public	Empower customers with the expertise and tools they need to manage their energy use	Focus on aging infrastructure and reach stranded potential	• Save 511 GWh, 72 MW, and 28.8 MM therms by 2025 • Increase customers' ability to manage energy through benchmarking and data access • Increase operational efficiency

Cross-Cutting Vision, Focus, and Goals

Sector	Vision	Focus	Goals
Codes & Standards	Achieve the state's ambitious policy goals by refining the existing program and supporting multifaceted objectives	Building codes and appliance standards that position the state to meet ambitious goals; compliance improvement efforts; and code-readiness activities to prime the market for "codification"	• Save 2,545 GWh, 739 MW, and 46 MM therms by 2025
Emerging Technologies	Anticipate the latest emerging technology trends in order to bring innovative, verified technologies to program administrators (PAs)	Identification of new technologies with verifiable energy savings, market transformation	• Provide PAs a comprehensive set of suitable technology options for new measures • Provide PAs actionable market information to inform program delivery • Confirm that technology development partners understand what measures PAs need
Finance	Enable customers to overcome barriers related to making demand side energy investments	Support the availability of new financing structures and an expanded supply of, and access to, affordable funding for energy efficiency investments	• Increase the supply of and access to affordable capital for energy efficiency investments • Facilitate investment in more and deeper projects through strategies to overcome transaction barriers for customers and lenders
Workforce Education & Training	Build upon past successes and implement new WE&T solutions to strengthen the ability of customers and building professionals to market and execute energy efficiency projects	Education and training for the current energy workforce, targeting high-impact jobs; targeted partnerships with training organizations; and resources for K-12 teachers to promote "green" career awareness	• A workforce capable of meeting state energy goals

Business Plan Influences

1. Regulatory policies
2. Legislative drivers
3. Industry trends
4. Customer needs
5. Lessons learned from EM&V
6. Stakeholder feedback



Sample Sector Level Metrics

Goal	Sector	Short (1-3 yrs)	Mid (4-6 yrs)	Long (7-10 yrs)
Save energy and reduce demand (net)	Residential	92 GWh, 9 MW, 1.3 MM therms	103 GWh, 7 MW, 1.5 MM therms	109 GWh, 8 MW, 1.7 MM therms
	Commercial	155 GWh, 22 MW, 4.2 MM therms	180 GWh, 29 MW, 5.2 MM therms	205 GWh, 35 MW, 5.9 MM therms
	Agriculture	49 GWh, 11 MW, 0.5 MM therms	52 GWh, 11 MW, 0.5 MM therms	54 GWh, 12 MW, 0.5 MM therms
	Industrial	79 GWh, 9 MW, 5 MM therms	75 GWh, 8 MW, 4.8 MM therms	73 GWh, 8 MW, 4.7 MM therms
	Public	62 GWh, 7 MW, 2.9 MM therms	65 GWh, 10 MW, 3.8 MM therms	66 GWh, 11 MW, 4.3 MM therms
	C&S	1,190 GWh, 307 MW, 18 MM therms	875 GWh, 268 MW, 18 MM therms	480 GWh, 164 MW, 10 MM therms
Increase operational efficiency ($/kWh, $/therm saved)	Residential Commercial Public Agriculture	Maintain 2015 baseline during transition to 60% third party portfolio	10% lower than baseline	TBD
Increase # of energy management technologies (EMTs)	Residential Commercial	TBD, pending Assembly Bill 793 advice letter	TBD	TBD
Increase participation in EE programs	Industrial	Maintain 2.5% annual participation across electric/gas	3% annual participation	4% annual participation
	Agriculture	2% electric (1.6% baseline) 16% gas (15.7% baseline)	4% electric 17% gas	8% electric 18% gas

Annual Budgets: 2016-2025

Cost Category	2016	2017	2018	2019	2020-2025 Annual Budget
Residential	$82.8M	$83.8M	$81.0M	$78.7M	$77.6M
Commercial	$133.3M	$105.5M	$98.7M	$95.5M	$93.8M
Agriculture	$27.0M	$31.9M	$32.2M	$32.6M	$32.2M
Industrial	$32.8M	$43.4M	$42.9M	$43.1M	$42.5M
C&S	$15.3M	$17.2M	$17.0M	$16.8M	$16.6M
ET	$6.3M	$8.0M	$7.9M	$7.8M	$7.7M
WE&T	$12.6M	$10.9M	$10.7M	$10.6M	$10.5M
Finance	$5.7M	$4.8M	$4.2M	$4.0M	$3.9M
OBF – Loan Pool	$10.0M	$13.5M	$13.5M	$13.5M	$5.0M
Public	$72.3M	$75.3M	$72.5M	$70.9M	$69.8M
Total Sector Budget	**$398.1M**	**$394.2M**	**$380.8M**	**$373.4M**	**$359.4M**
BayREN	$12.8M	$16.5M	$16.5M	$16.5M	$16.5M
DSM	$715K	$560K	$560K	-	-
EM&V	$17.2M	$17.2M	$17.2M	$17.2M	$17.2M
MCE	$1.2M	$1.6M	$1.6M	$1.6M	$1.6M
Total Portfolio	**$430.1M**	**$430.1M**	**$416.7M**	**$408.8M**	**$394.8M**

Annual Net Market Potential

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Resource Programs										
GWh	464	475	399	404	413	420	436	452	471	471
MW	58	60	50	51	53	55	61	66	70	70
MM Therms	11	11	12	13	13	13	14	15	16	16
Codes & Standards										
GWh	611	506	408	401	381	326	295	254	240	240
MWs	141	105	103	103	101	94	90	84	82	82
MM Therms	6	6	6	6	6	6	6	6	5	5
Portfolio Totals										
GWh	1075	981	807	805	794	746	731	706	711	711
MW	199	165	153	154	154	149	151	150	152	152
MM Therms	17	17	18	19	19	19	20	21	21	21

Source: Navigant Consulting, Inc. "Energy Efficiency Potential and Goals Study for 2015 and Beyond"

Projected Annual Portfolio Cost-Effectiveness (2018-2020)

Sector	TRC	PAC
Residential	1.01	1.21
Commercial	1.50	1.89
Agriculture	1.03	1.42
Industrial	1.35	2.27
Public	0.84	0.94
Program Total	**1.03**	**1.27**
C&S	1.49	46.90
Portfolio Total	**1.27**	**3.26**

Note: Cost-effectiveness projections are based on 2017 updated avoided costs and cost-effectiveness inputs approved in Resolution E-4801. These calculations are directional in nature. PG&E will provide the Commission with updated cost-effectiveness forecasts for each year through the annual Tier 2 advice letter filings.

Key Strategies to Improve Cost-Effectiveness

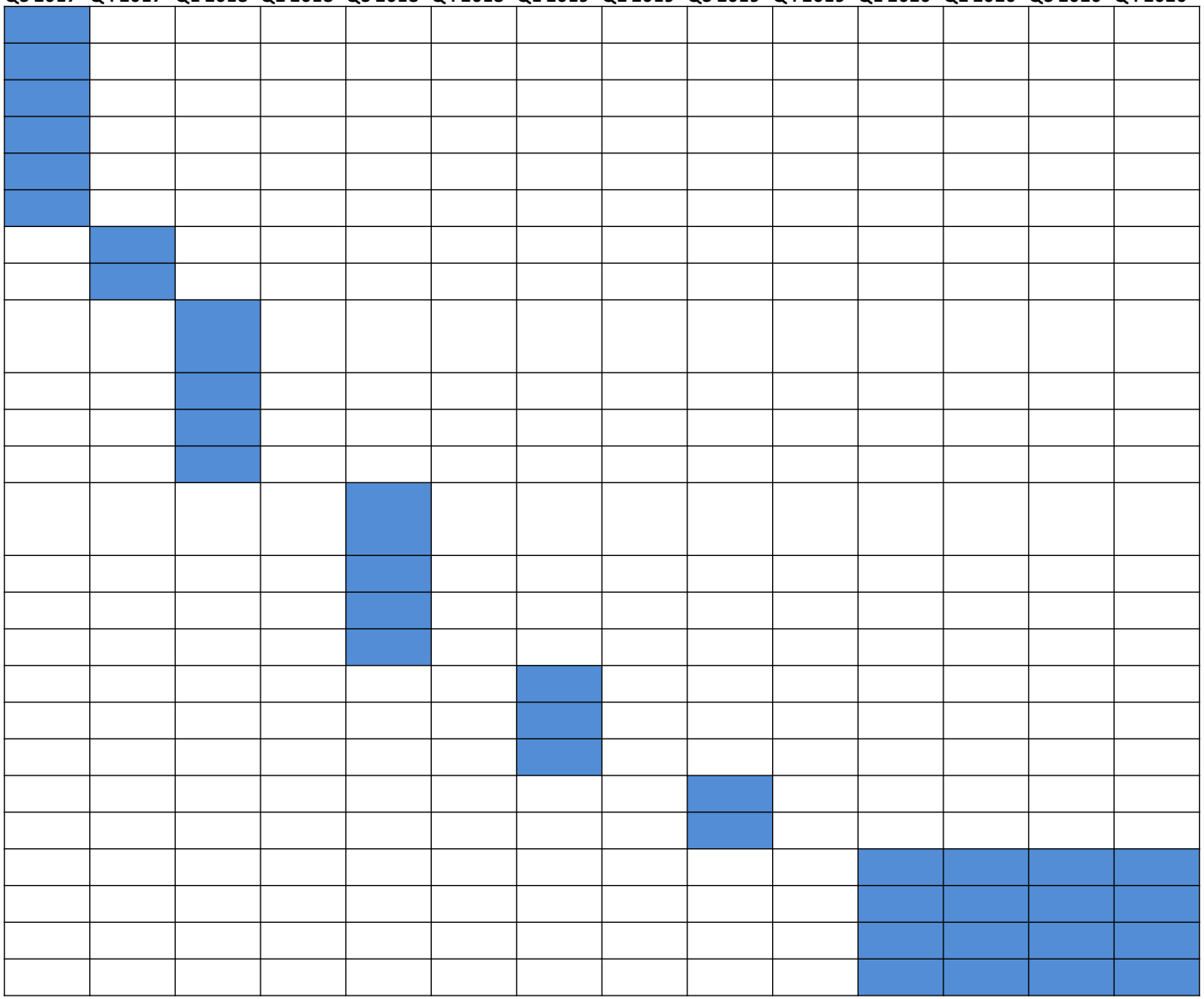
1. Deploy new program models and third-party financial structures that spur deep investment and persistence of savings

2. Target customers with high energy savings potential

3. Focus on technology strategies that promote deeper, more comprehensive, and persistent energy savings for new and existing buildings

4. Make energy efficiency investments easier and more attractive

Solicitation Timeline



Policy updates needed to successfully implement the Business Plan

Cost Effectiveness

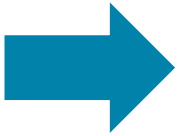
1. Remove participant costs not associated with savings from the Total Resource Cost (TRC) test
2. Update the Database for Energy Efficiency Resources (DEER) calculations to reflect current system peak hours
3. Endorse the IOUs' efforts to redefine behavioral programs

Promote Transition to Business Plan Portfolio

1. Confirm list of statewide (SW) programs is not final until Implementation Plans have been reviewed at the California Energy Efficiency Coordinating Committee (CAEECC)
2. 25% statewide program allocation based on program budget
3. Count SW "functional activities" toward the 25% statewide target
4. Continue to pilot activities "locally" that meet the definition of SW but are not ready for SW treatment
5. Provide flexibility to extend existing third-party contracts until replaced by programs procured through Business Plan process

Statewide Administration

Criteria for SW Administration
1. Natural program bundling
2. Cost-effectiveness
3. Capacity
4. Expertise
5. Relationships
6. Stakeholder feedback



Proposed PG&E SW Assignments
1. Institutional Partnerships— State of California and Department of Corrections
2. New Financing Offerings
3. C&S: Building Codes and Appliance Standards Advocacy
4. WE&T: K-12 Connections
5. WE&T: Career & Workforce Readiness (Downstream Pilot)
6. Indoor Agriculture Program (Downstream Pilot)