



# Role of SB 350 Energy Efficiency Savings in 2017 AAEE

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# Basic Question

- How should the analyses undertaken in the SB 350 energy efficiency target setting process be used in developing AEE projections for use in electricity procurement and procurement planning?



# SB 350 Projections

- SB 350 requires a doubling of projected AAEE electricity and natural gas savings in the 2015 CEDU report and comparable savings from a 2013 POU study
- Programs evaluated:
  - Future ratchets of T24, T20 and federal standards
  - PACE, Prop 39, AB 802 benchmarking, asset rating
  - GGRF programs, and numerous other programs with smaller scale savings



# Divergent Purposes

- SB 350 EE projections were developed to understand how existing and foreseeable EE programs could be scaled up to meet the SB 350 doubling goal by 2030
- AAEE projections modify a baseline demand forecast to develop a managed demand forecast - used by the CAISO for transmission studies and by the CPUC in its IRP process to guide procurement of resource additions



# Interagency Agreements

- CEC, CPUC and CAISO have agreed on the use of various managed demand forecasts (baseline less specific scenarios of AAEE savings) for particular electricity assessments
- SB 350 EE goal setting language has caused the CPUC and CARB to propose various interim projections to be used in their proceedings (1.5x AAEE, 2x AAEE, etc.)
- Initial SB 350 sub-target projections require rethinking these agreements



# The Challenge for SB 350 EE

- Many of the program-specific analyses are based on “what if” assumptions rather than firm program plans with year by year expenditure or standard adoption commitments
- Many program-specific analyses develop 2029 savings estimates and then interpolate to get intermediate year savings values
- Despite attempts to make adjustments, double counting is present



# Challenge, cont'd

- Noresco projections have limitations from a procurement planning perspective:
  - No peak demand savings projections were developed
  - Analyses were prepared only at the statewide level and not at the geographic regions used in customary AAEE projections
  - In some cases programs have no specific end-use savings making preparation of 8760 hourly savings problematic



# Proposal

- Develop a method to review each program and create a factor to scale down savings
- Augment traditional AAEE scenarios with scaled down T24 savings estimates
- Create a new scenario that consists of CPUC potential study PAC scenario augmented by scaled down SB 350 projections
- New scenario would replace sensitivity case assumptions in CPUC IRP studies





# SB 350 Program Evaluation

- Evaluate each program using three criteria:
  - Program Scalability Likelihood
  - Potential for Double Counting
  - Year-Specific Savings Pattern Credibility
- Create a Energy Scaling Factor based on judgment that would reduce published SB 350 savings projections



# California Energy Commission

## Preliminary Implementation

Program Type	SB 350 Savings Level		Evaluating SB 350 Programs for Methodological and Programmatic Limitations			Energy Scaling Factor
	Bldg Sector(s)	2017	2029	SB 350 Scaling Likelihood	Potential for Double Counting	
<b>SB 350 Doubling Goal (GWh)</b>		<b>19,600</b>	<b>82,871</b>			
IOU Programs	Everything	4179	19050			
Utility Rebates	Res, NR	4058	13599 high	low	moderate	1
BROs	Res, NR	0	4865 AB 802 motivates BROs	overlap with price elasticity	CEC assumed 100% replacement	1
Codes & Standards	Res, NR	3059	17843 high	overlap: base fcst, Noresco	moderate	0
Low Income	Res	121	586 high	low	moderate	1
POU Programs	Everything	1790	8540 moderate	adjusted in SB 350 process	High	1
<b>IOU + POU Programs</b>	<b>RES, NR</b>	<b>5969</b>	<b>27590</b>			
Building Standards	RES, NR	158	6638 moderate			
T24 - 2016 and 2019 ratchets	Res, New	21	1184 high	equal to Navigant P&G assessment	low, assumes linear ramp to 2029	1
T24 progressive A&A ratchets	Res, A&A	102	1234 moderate	removes Navigant estimate	low, assumes linear ramp to 2029	0.3
T24 - 2019 to 2028 ratchets	NR, new	11	2842 high	2019 Navigant plus 2022-2028 Noresco	low, assumes linear ramp to 2029	1
T24 progressive A&A ratchets	NR, A&A	24	1378 moderate	removes Navigant estimate	low, assumes linear ramp to 2029	0.3
T20 Appliance Regulations	RES, NR	502	12865 moderate			
>2015 Adopted Appl Stnd	RES, NR	502	3990 certain	100% in 2017 CEDU baseline fcst	fairly high	0
future T20	RES, NR	0	8875 mod, exclude heat pump savings	overlap with P&G emerging tech	acceptable given 10 year guesses	0.8
Federal Appliances	RES, NR	0	3906 low; outlook for fed coop dubious	low	moderate	0.5
Local Government Ordinances	RES, NR	3	19 moderate	low	low, assumes linear ramp to 2029	0.5
Air Quality Districts	RES, NR	11	318 low, assumes full CEQA implem.	high	low, assumes linear ramp to 2029	0
Local Government Challenge	RES, NR	0	38 firm - CEC funded program	acknowledged overlap - fixed?	low	0.25
Proposition 39	NR	448	1357 low, unfunded after 2017	acknowledged overlap - fixed?		0
GGRF: Low Income Weather	RES	133	608 \$75M/yr funding likely	no recog of CPUC Low Income prog	low, single hist yr extrap	0.25
GGRF: Water-Energy Grant	RES, NR	82	374 some funding likely	acknowledged overlap - fixed?	low, single hist yr extrap	0.5
DGS Energy Savings	NR	13	63 assumes decline after 2020	low based on project review	moderate	1
ECAA	RES, NR	0	11 addn'l funding in budget process		attempts to avoid double counting	0.75
PACE	RES, NR	1594	7296 low, assumed 2015 repeated	assumed only 4% overlap with IOU	low, single hist yr extrap	0.3
Electrification	RES, NR	0	-841 low		contradicts T24 requirements	0
Benchmarking	RES, NR	0	1420 low, completely assumptions		low, doublecounting	0.25
BRO's	RES, NR	47	336 low, multiplicity of info programs	large overlap with other programs	low	0.25
Energy Asset Rating	RES, NR	0	551 assumes parallel non-res HERS	high	low	0
Smart Meter and Controls	RES, NR	0	27 low, assumes real time response	TOU and DR shift programs	low	0
Industrial	NR	35	21 low, assumed PAC aggressive	low program, high price response	low	0
Agricultural	NR	23	105 low, assumed PAC aggressive	low program, high price response	low	0



## Summary of Issues

- Divergent purposes require adjustments to SB 350 EE projections for use in AAEE cases
- Quantitative analyses prepared for SB 350 create challenges in developing detailed projections needed for CAISO studies or production simulation modeling
- Staff proposal creates an interim approach that informs procurement and procurement planning until SB 350 analytic improvements are complete



## Scenario Design & Analysis

Component	Quantitative Source	1-2	3	4-5	6
IOU Programs, BROs, and Low Income	Navigant P&G results-excluding savings in baseline fcst	2018 P&G mTRC GHG#1 (with selected modifications)	2018 P&G mTRC GHG#1 (with selected modifications)	2018 P&G mTRC GHG#1 (with selected modifications)	2018 P&G PAC aggressive (with selected modifications)
C & S (in mTRC GHG#1 scenario)	Navigant P&G model (total savings not attributable)	2018 P&G common C&S assumptions	2018 P&G common C&S assumptions	2018 P&G common C&S assumptions	2018 P&G common C&S assumptions
C & S (additional ratchets in SB 350 analyses)	Navigant P&G model using addnl SB 350 assumptions	None	2019 T24 A&A	T20 < 2025 Fed < 2025 2019 T24 A&A T24 NC ratchets	Scaled SB 350 Results *
Other SB 350 Programs	Scaled down savings from SB 350 results	None	None	None	Scaled SB 350 Results *

\* Savings from all SB 350 programs using staff proposed scaling methodology