

# Existing Conditions Baseline

## WHPA Energy Savings and DEER Committee

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# Outline

- Summary of AB 802
- Summary of CPUC Staff Whitepaper on Existing Conditions Baseline
- Summary of Decision on Business Plan Filings (D. 16-08-019)
- Current Working Groups

# AB 802

- Became law in October 2015
- Measure energy usage reductions relative to existing conditions baseline
- Provide programs to bring existing buildings into conformity with or exceed Title 24
- Base savings on reductions in normalized metered energy consumption

# AB 802

- Gave CPUC discretion to determine exceptions to the existing conditions baseline
- Authorized “High Opportunity Projects or Programs” (HOPPs)
- Focus on “buildings”
  - Ag and industrial processes not specifically addressed

# Purpose of AB 802

- Enable the use of interval “Smart Meter” data to measure energy savings
- Capture “stranded potential”
  - Below code savings due to non-compliance
  - Deferred retrofits

# Staff Whitepaper

- CPUC staff issued “whitepaper” outlining issues with existing conditions baseline
- Proposed exceptions to the existing conditions baseline allowed by the legislation

# Customer Bill Savings v. Program Savings

- Customer bill savings look at differences in energy consumption before and after an efficiency project
  - Aligned with the “normalized metered energy consumption” mandate of AB 802
- Efficiency programs are market interventions
  - Program savings are based on difference in energy consumption with and without the intervention
  - The “counterfactual.” What would have happened in the absence of the program?

# Customer Bill Savings v. Program Savings

- Example: HVAC unit replacement
  - Customer bill savings result from difference in efficiency between existing (SEER 10) and new (SEER 17) unit
  - If no program, contractor would likely buy the cheapest (SEER 14) new unit on the market
  - Program provides incentive to purchase more efficient SEER 17 unit
  - Program effect is the difference between code (SEER 14) and program (SEER 17) unit



# Practical Implications of Existing Conditions Baseline

- Gross savings go up
- Effect of code baseline in “what the customer would have done in the absence of the program” is incorporated in the net savings analysis
- Net to gross ratio goes down
- Net savings are about the same

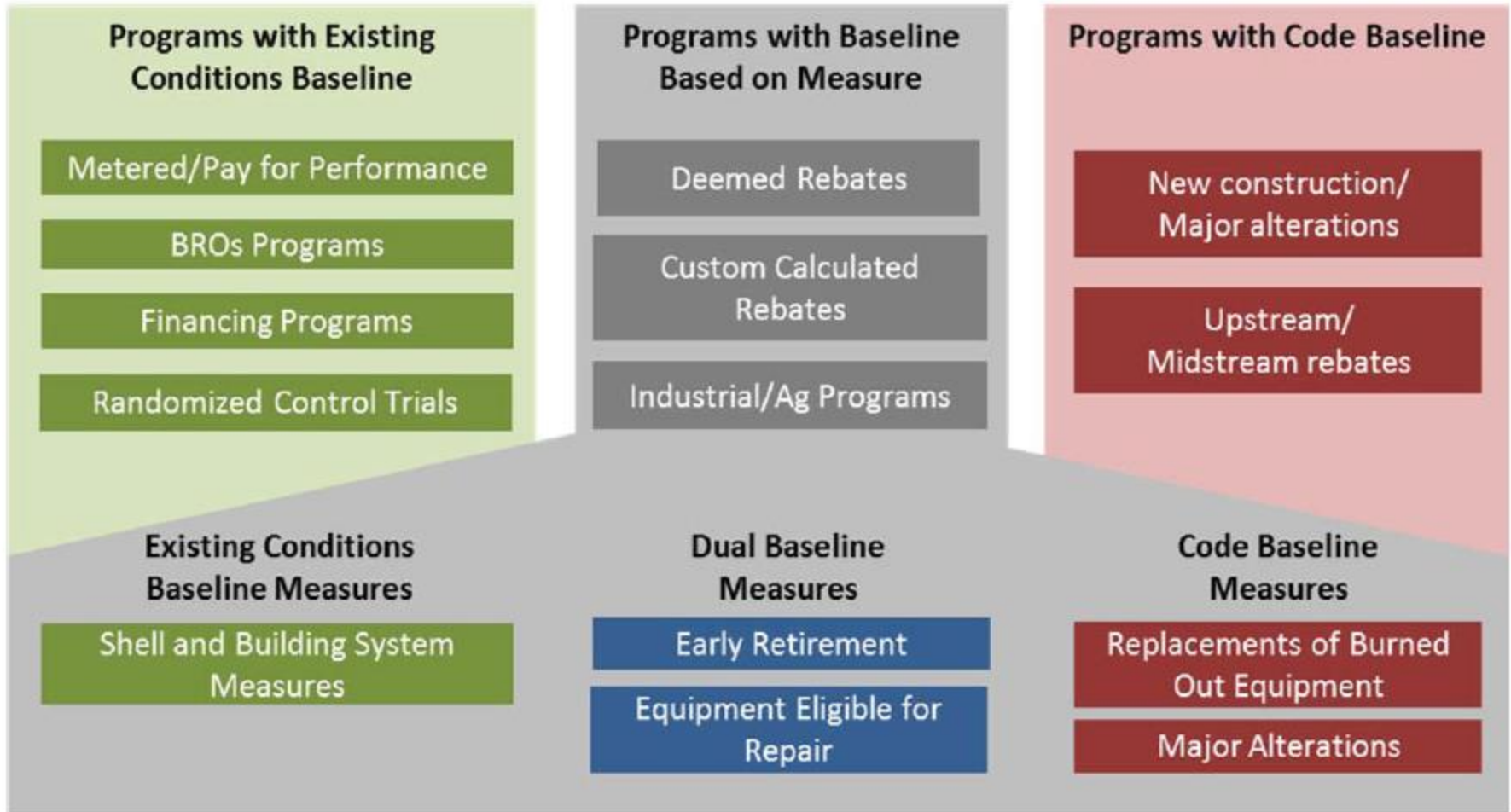
# Normal v. Early Replacement

- Normal replacement (replace on burnout) assumed the minimum available efficiency is a code compliant unit
- Early replacement was an option that used a “dual baseline”
  - Existing equipment baseline for remaining useful life of existing equipment
  - Code baseline for the remaining life of the new equipment

# Normal v. Early Replacement

- RUL = 1/3 of EUL
- Full measure costs for RUL period
- Required “preponderance of evidence” documentation of early replacement claim
- Early replacement claims generally not made due to administrative burden

Figure 3: Proposed Baseline Framework



# Business Plan Guidance Decision

- Establishes existing conditions baseline as the “default” assumption
- Specifies exceptions to the existing equipment baseline
- Sets efficiency goals based on “net savings”

# Adopted Baseline

Alteration Type	Delivery	Savings Determination	Shell & Bldg System and Add- On Equipment	Behavioral, Retro-commissioning, and Operational	Normal replacement	Accelerated replacement and repair eligible
New construction, expansions, added load	Any	Any	Code	N/A	Code	N/A
Existing buildings, including major alterations	Upstream & Midstream	Any	Code	N/A	Code	N/A
		Downstream	Calculated	Existing	Existing	Code
	Deemed		Existing	Existing	Code	Dual
	NMEC		Existing	Existing	Existing, Program Design	Existing
	RCT/ experimental		Existing	Existing	Existing	Existing
Non- building projects, including industrial and agricultural processes	Any	Any	N/A	Existing	Standard Practice	Dual

# Adopted Baseline

- Code baseline for
  - new construction
  - normal replacement (except NMEC)
  - upstream programs
- Existing conditions baseline for
  - shell
  - building system
  - add-on equipment
  - BRO measures

# Adopted Baseline

- Dual baseline for:
  - Accelerated replacement
  - Repair eligible



# Building System

- Equipment that does not burn out, or if it does, the building can function without it.
- Examples:

<b>Measure</b>	<b>End Use</b>	<b>Sector</b>
Insulation	Building Envelope	Res/Com
Window Film	Building Envelope	Res/Com
Duct Sealing/Repair	HVAC	Res/Com
Ventilation	HVAC	Res/Com
HVAC Controls	HVAC	Res/Com
HVAC Quality Maintenance	HVAC	Res/Com
Energy Management Systems	HVAC	Com
Lighting Fixtures*	Indoor/Outdoor Lighting	Res/Com

# Repair Eligible

- Certain types of equipment that are repairable far beyond the EUL
- Examples:

<b>Measure</b>	<b>End Use</b>	<b>Sector</b>
Split/Package Air Conditioner	HVAC	Res/Com
Split/Package Heat Pump	HVAC	Res/Com
Furnace	HVAC	Res/Com
Chillers	Commercial Refrigeration	Com
Boilers	Process/Service Hot water	Com

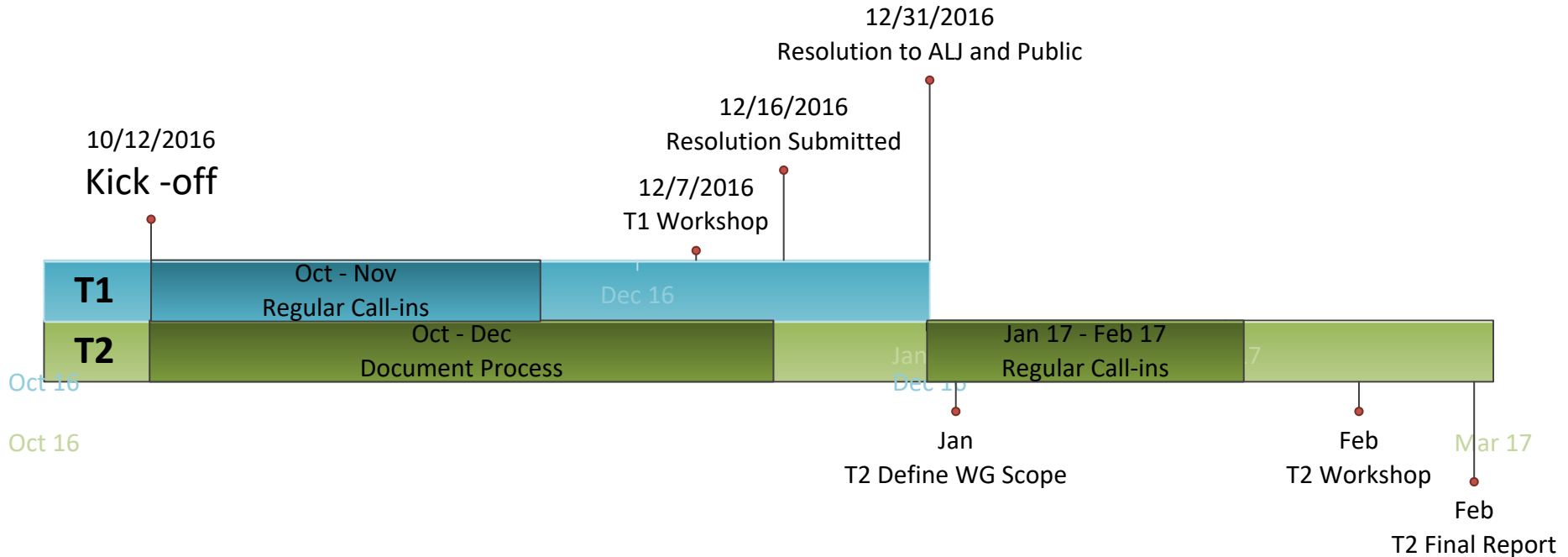
# Working Groups

- Measure level baseline
  - Assign measures to the appropriate categories
    - Shell, building system, add-on, repair eligible etc.
- Preponderance of evidence
  - Define what is needed to meet the preponderance of evidence standard
- Ex-ante review process
- Industry standard practice

# Working Group Plan

- Working groups facilitated by ERS
- Two separate working groups
  - T1: Measure-level assignments and POE
  - T2: ISP and Custom Review process
- Recruiting a core group for each
  - Committed to attending all of the call-ins and providing written commentary weekly
  - Two people maximum per organization
- Call-ins will be open for monitoring by all interested parties
- Send email to: [CPUC@ers-inc.com](mailto:CPUC@ers-inc.com)

# Calendar



- Two separate working groups
  - T1: Measure-level assignments and POE
  - T2: ISP and Custom Review process

# Thank You!

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