

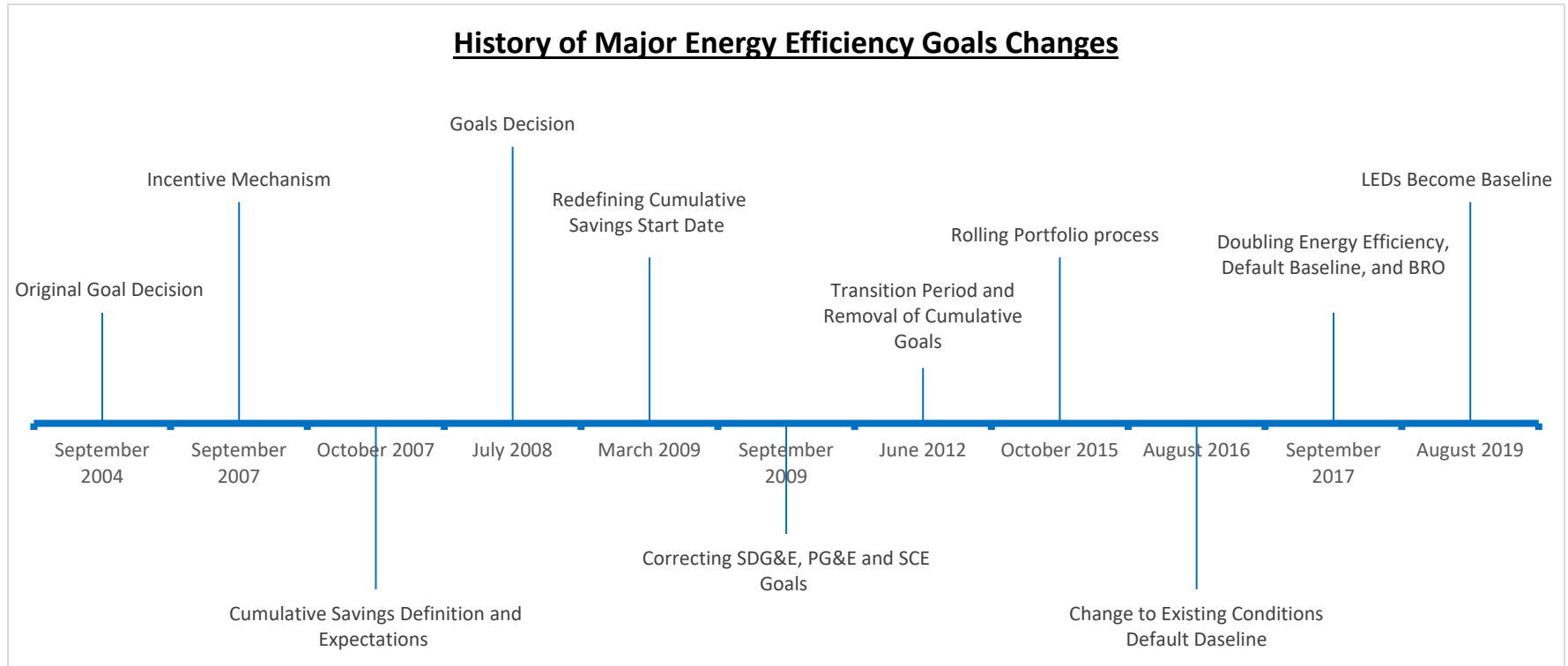
# History of California Public Utility Commission Goals for Energy Efficiency

*Updated: February 2021*

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## 2. Timeline



### 3. Important Decisions

#### A. Original Goals Decision

September 2004 Decision - D. 04-09-060;

The original goals decision established goals for 2004-2013 based on the Secret Surplus potential study. In addition, a Statewide Goals Study prepared by CEC staff was used to identify achievable potential and establish the adopted goals.

*“... today’s adopted savings goals reflect the expectation that energy efficiency efforts in their combined service territories should be able to capture on the order of 70% of the economic potential and 90% of the maximum achievable potential for electric energy savings over the 10-year period based on the most up to date study of that potential. These efforts are projected to meet 55% to 59% of the IOUs’ incremental electric energy needs between 2004 and 2013... For natural gas, our adopted savings goals are designed at this time to capture approximately 40% of the maximum achievable potential identified in the most recent studies of that potential.” p. 2-3*

In the decision the goals are identified as stretch goals, but consistent with the findings of the most currently available potential study. It also established the definition of cumulative savings goals.

*“The cumulative numbers represent the annual savings from energy efficiency program efforts up to and including that program year.” p.10*

The application of the goals for long term planning is also called out in this decision.

*“The energy savings goals adopted in this proceeding shall be reflected in the IOUs’ resource acquisition and procurement plans so that ratepayers do not procure redundant supply-side resources over the short-or long-term. . . . subsequent procurement plan cycles . . . shall incorporate the most recently-adopted energy savings goals into those filings.” p.52-53*

#### B. Incentive Mechanism

September 2007 Decision - D. 07-09-043

The Shareholder Risk/Reward Incentive Mechanism for Energy Efficiency Programs was adopted in D. 07-09-043 and was superimposed upon the administrative structure adopted for the 2006-2008 energy efficiency program cycle. In this decision the “Minimum Performance Standard” (MPS) for utilities to make an earnings claim was based on partial achievement of the goals.

*“The MPS is the minimum level of savings that utilities must achieve relative to their savings goal before accruing any earnings, and is expressed as a percentage of that savings goal.” p.22*

That minimum threshold is 85% of the goals averaged across GWH, MW and Therms AND 80% of any given savings metric. This decision put added emphasis on the numeric goals adopted by the Commission by linking them to earnings.

## C. Cumulative Savings Definition and Expectations

October 2007 Decision - D.07-10-032

This Decision clarified the definition of cumulative savings and recognized three ways the utilities could maintain the equivalent level of additive first year savings.

*“A utility's 2009-2011 portfolio then can reflect one or more options as to how to “maintain” this level of equivalent savings, such as by repeating the equivalent measure delivery and incentive again, promoting measures with much longer expected lives that will endure over many years ahead and not have to be replaced so soon, and/or achieving market transformation strategies that ensure only like-kind efficiency lamps can be purchased in 2009.”pg 80*

The utilities were directed to report in their applications for the 2009-2011 portfolio approvals the expected cumulative savings over the long term. Likewise progress toward cumulative goals are to be included in the required EM&V reports from Energy Division staff.

*“We direct the utilities to report in their applications for 2009-2011 energy efficiency portfolio approvals the expected cumulative savings (as described above) of their portfolio plans over the long-term (i.e., at least 20 years). Using 2004 as the base year, we also expect to see the cumulative effect of these savings across program cycles in their annual reporting, commencing with the 2004-2005 portfolio when we established the cumulative goals. Utilities shall include this information in the Strategic Plan and 2009-2011 portfolio plan applications. Cumulative savings as clarified herein also should be included in Commission staff’s Verification and Performance Earnings Basis reports that are required under our EM&V protocols.” pg. 81-82*

## D. Hybrid Goals Decision

July 2008 Decision - D. 08-07-047

D. 08-07-047, the “Decision Adopting Interim Energy Efficiency Savings Goals For 2012 Through 2020, and Defining Energy Efficiency Savings Goals for 2009 Through 2011” utilized an updated potentials study, and goals study (by Itron) to develop Total Market Gross goals for 2012-2020.

*“In a hybrid goal structure, goals are established for all energy efficiency actions taken across the market within a utility service territory, referred to as Total Market Gross (TMG), and for the savings associated specifically with each utility energy efficiency portfolio (utility program-specific).”(Appendix p 1. D. 08-07-047) The rationale for this goals paradigm was stated in that decision. “Energy Division believes a hybrid goal structure (which incorporates both a total market gross goals and a utility program–specific goal) which measures all savings achievements within IOU service territories begins to solve the crucial interagency need for a metric appropriate to load forecasts, associated emission reduction baselines, and economically efficient procurement plans.” p. 13*

The need for more evaluation and measurement frameworks to measure these savings was also recognized in this decision.

*“Such a definition must be accompanied by a Commission commitment to develop any significant missing evaluation, measurement & verification (EM&V) protocols for attributing savings to utility*

*programs.” p. 13 “Energy Division believes a hybrid goal structure employing “expansive net” as the metric for which IOU program efficacy is measured also encourages utilities to innovate their program delivery through non-traditional channels. The EM&V profession refers to these additional EE effects variously as “participant spillover,” “market effects,” “naturally occurring” savings.” p. 14*

More details regarding this proposal were presented in a Staff White Paper (May 12, 2008.) entitled “2012-2020 Energy Efficiency Goal Setting: Technical and Policy Issues.” Goals for 2008-2020 were proposed, and cited in D. 08-07-047, but were adopted on an interim basis (OP1). They were adopted for use by the California Air Resources Board in its Assembly Bill 32 planning process and again cited to be used in the Commission’s long-term procurement planning process (OP3).

*“3. Energy utilities shall use one hundred percent of the interim Total Market Gross energy savings goals for 2012 through 2020 in future Long-Term Procurement Planning proceedings, until superseded by permanent goals.”*

## E. Redefining Cumulative Savings Start Date

May 2009 decision: D.09-05-037

This decision redefined cumulative savings for the 2009-2012 program cycle to begin in 2006 rather than 2004. It removed the savings for the 2004-2005 period as part of the cumulative goals in the 2009-2011 program period, subsequently removing the obligation of the utilities to make up any shortfall in savings in future cycles. The reasoning for removing 2004-2005 was because the evaluations in this period were not guided by the CPUC and the standard protocols were not in effect.

This decision granted SDG&E and PG&E (dual fuel utilities) reductions in their therm goals of 22% and 26% respectively. This was done to align expectations with the DEER 2008 application of interactive effects primarily for prescriptive lighting measures. Energy Division was directed to do further study on measure decay in preparation for the next program cycle (2012-2015). (OP 2)

*“Energy Division shall study specific assumptions around decay in advance of the 2012-2015 energy efficiency portfolio applications, with opportunities for interested parties and persons to provide input on and comment on the Energy Division recommendations.”*

## F. Correcting SDG&E, PG&E and SCE Goals

September 2009 Decision: D. 09-09-047

D. 09-09-047 granted SDG&E, PG&E and SCE all 5% and 1% decrement to their annual goals for kWh and kW, respectively. The purpose was to align expectations for meeting the goals with the requirement to apply the DEER 2008 ex-ante assumptions to 2006-2008 and 2009-2012 claims.

SDG&E also had a long-standing anomaly in their goals compared to the other utilities; they had been required to achieve a larger portion of electric potential than the other utilities. The correction in the decision resulted in a 25% reduction on their kWh and kW annual goals. This was applied before the 5% and 1% corrections were made. This correction was also applied retroactively to the 2006-2008 period to correct for cumulative savings shortfall. This decision also adopted the D. 04-09-060 goal for 2012

(with the subsequent adjustments); not the D. 08-07-047 goal for 2012. This decision required that the utilities should make up 50% of the savings decay as measures expire, but also for further study.

*“... until EM&V results inform better metrics, utilities may apply a conservative deemed assumption that 50% of savings persist following the expiration of a given measure’s life. This reflects our expectation that our energy efficiency program efforts are in fact resulting in market transformation, changing consumption habits and preferences, while acknowledging that measure uptake in the absence of program support may not be universal.*

*Given the exclusion of 2004-2005 from cumulative savings calculations in D.09-05-037, measure life drop off is expected to have a relatively minor effect on utility goal achievement for the current cycle, hence the appropriateness of a deemed assumption. However, we understand that the scope of this issue will grow over time as cumulative savings obligations increase and a larger swath of measure lives expire. Therefore, this is an important analytical issue critical to our understanding of savings persistence over time, and demands greater attention in our EM&V work. D.09-05-037 directed Energy Division to study specific assumptions around efficiency measure savings “decay” in advance of the 2012-2014 (now 2013-2015) portfolio applications. We intend to take this up for further examination in R.06-04-010, or its successor rulemaking.” p 38-39*

## G. Transition period and removal of cumulative goals

June 2012 Decision - D.12-05-015

This decision marked a shift from the previous 3-year goals cycle for energy efficiency portfolios into a 2-year transition period (2013-2014). The transition period would be followed by the Rolling Portfolio process. During this transition period utilities were directed to begin transitioning from short-lived energy savings to deeper retrofits.

*“The past several energy efficiency portfolios have been approved on a three-year cycle, which has sometimes been followed by a one-year “bridge” year extending the existing programs to allow plans to be made for the next portfolio cycle. In this decision, rather than have a simple one-year “bridge” year extension following the 2010-2012 portfolio, we establish a two-year “transition” period... This decision gives guidance to the utilities on the 2013-2014 energy efficiency programs, with the overall direction that they should begin a transition away from short-lived energy savings and towards deeper retrofits.” p.2*

The decision also removed cumulative goals, adopting only annual goals for the transition period.

*“...based on many comments on the treatment of decay in the cumulative goals provided in the proposed decision, it is evident that there are many challenges associated with accounting for decay that must be addressed prior to including it in utility goals in a meaningful and robust manner. We therefore will adopt only annual goals for the 2013-2014 transition portfolio...” p.95*

## H. Rolling Portfolio process

October 2015 Decision - D. 15-10-028

The Commission adopted the Rolling Portfolio process for reviewing and revising portfolios, which uses a “bus stop” schedule for update deadlines. Any update that is submitted after one of these deadlines will be picked up at the next deadline, or bus stop.

*“Central to the rolling portfolio cycle framework is the schedule. The joint parties prepared a proposed proceeding schedule that was defined by firm “bus stops,” or deadlines for the critical steps in the portfolio updates. The value in the bus stop concept is that it sets a reliable, regular schedule for future updates, so that any new information that “misses a bus” can get on board when the bus rolls around to the stop again the following year.” p.81*

Several stakeholders asked that the Potential and Goals Study change the way its model is calibrated, with some stakeholders asserting that the calibration should stop entirely because it artificially limited future goals. Conversely, a utility also stated that different calibration data should be used because the projections were too optimistic. The Commission determined that the current method of calibration - using data collected after the fact to analyze how accurate the model’s previous predictions were and calibrating the model based on those findings- was the best method available, as it did not unduly limit future goals, and it used verified data used in calibration was the best available.

This decision also adopted the goals for IOUs territories for 2016-2025, with a planned update in 2018.

#### I. Change to existing conditions default baseline

August 2016 Decision – D. 16-08-019

Prior to this decision the Commission’s policy for most energy efficiency projects was to use current building codes and appliance standards as the baseline for a project. So completed projects that showed a lower energy usage than the current codes and standards would have that saving credited towards their energy efficiency goals.

*“...prior to the passage of AB 802, our policy was essentially that the majority of energy efficiency projects given credit towards our energy efficiency goals had their savings estimated by comparing their energy use after project completion to what the customer would have used had they installed equipment that complied with current building codes and/or appliance standards. In other words, our default policy was essentially a baseline determined by the applicable building codes and/or appliance standards.” p.14*

However, AB 802 required the commission to change these default assumptions for most projects to the existing conditions. In other words, the difference in energy usage before and after the project will now be used as the amount credited towards utilities energy efficiency goals.

*“With the language of AB 802 above, the Legislature is requiring this Commission essentially to change the default assumption. Instead of using an existing conditions baseline only by exception, we are now required to use existing conditions baseline as the default assumption, with certain justified exceptions in cases where a baseline determined by codes and standards and/or a dual baseline would be appropriate, as determined by the Commission.” (p14)*

#### J. Doubling energy efficiency, default baseline, and BRO

September 2017 Decision – D.17-09-025

One of the requirements of SB 350 was to set up annual energy efficiency and demand reduction targets that would double the state’s energy efficiency savings for both electricity and natural gas by 2030. That doubling in energy efficiency was to represent the mid-case estimate in the 2015-2025 California Energy Demand Forecast. SB 350 also released the Commission from basing energy efficiency studies on past levels of savings.

*“...SB 350 requires, among other things, that the CEC establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030. SB 350 specifies that these annual targets shall be based on the mid-case estimate of additional achievable energy efficiency in the 2015-2025 California Energy Demand Forecast, to the extent such is cost effective, feasible and will not adversely impact public health and safety.<sup>4</sup> SB 350 also specifies that the Commission set energy efficiency goals based on studies that are not restricted by past levels of savings...” p.4*

This decision reflected the requirement in AB 802 that existing conditions be used as the baseline for determining energy efficiency savings. It also required the use of operational, behavioral and retro-commissioning activities (or “BROs”) to meet energy efficiency goals.

*“AB 802 requires, among other things, that: (i) energy efficiency be achieved not only through equipment installations but also through operational, behavioral and retrocommissioning activities (often referred to as “BROs”); (ii) the Commission use existing conditions as the default baseline for determining energy efficiency savings...” p.3*

The energy savings goals for IOUs’ ratepayer-funded energy efficiency program portfolios for 2018 to 2030 were also adopted in this decision..

## K. Energy Efficiency and Demand Response integration

June 2018 Decision – D. 18-05-041

Under this Decision the Commission ordered staff to begin integrating the demand response (DR) and energy efficiency (EE) potential studies, as well as integrating EE and DR for EE measures in which additional DR savings value could be gleaned for very little additional incremental cost.

## L. LEDs become baseline

August 2019 Decision – D. 19-08-034

Because the baseline for residential and non-residential lighting measures was updated to LEDs, the savings potential identified in the 2017 potential study had to be significantly reduced. This meant that, in spite of increases in potential savings in BRO, as well as codes and standards programs, there was still an overall decrease in energy savings potential in the 2019 potential study.

*“...With respect to energy efficiency potential, the most significant update included in Resolution E-4952 is to update the baseline for non-residential lighting measures to Light Emitting Diodes (LEDs), the effect of which is to significantly reduce savings potential relative to the potential study upon which D.17-09-025 adopted goals (2017 potential study). Also, in response to party comments on the draft potential study, Navigant Consulting, Inc. and its partners (the Navigant team)<sup>4</sup> updated the baseline for*



*residential lighting measures to LEDs, which also significantly reduced savings potential relative to the 2017 potential study...” p.4*

*“As previously stated, relative to the 2017 potential study, the 2019 potential study shows a decrease in potential energy efficiency savings from IOU rebate programs, largely due to savings from many lighting measures transitioning to code or standard practice. While potential savings from BROs programs and codes and standards programs are increasing relative to the 2017 study, there is still an overall decrease in energy savings potential across all scenarios in the 2019 potential study...” p.20*

## M. Incorporating Energy Efficiency into Integrated Resource Planning Process

2018 CPUC Energy Division White Paper

SB 350 requires the CPUC to adopt the Integrated Resource Plan (IRP) optimization process to meet the state’s greenhouse gas (GHG) emissions reduction targets. In the 2017 IRP, energy efficiency (EE) was incorporated through the demand forecast as a load modifier but was not optimized using IRP. The IRP optimization process selects resources by comparing their costs at the measure-level. However, EE programs are assessed at a portfolio-level for its cost effectiveness, rather than at the level of the individuals measures that make up the portfolio. This is because aspects of EE portfolios, such as low-income programs and market transformation programs, may not be cost effective by themselves but are statutory requirements because of the other benefits they provide. Because of these differences it is very difficult to incorporate EE into IRP.

In this white paper, the CPUC staff recommends that the portfolio approach to implementing EE be kept, but that work should focus on integrating the two processes as much as possible, and on coordinating between them to avoid issues such as double counting.