

## DOCKETED

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**Summary of Proposed Changes to the  
Final 2015 Integrated Energy Policy Report  
for Consideration at the February 10, 2016  
California Energy Commission Business Meeting**

***Page numbers refer to the report posted on January 27, 2016 that does not show changes in underline-strikeout (docket number 15-IEPR-01, TN#210036). Added text is shown in underline; ~~deleted text shown in strikeout~~.***

**Executive Summary, page 5:**

The gas well leak at Southern California Gas' storage facility at Aliso Canyon is an example of a large ~~but~~ an unexpected methane leak that is having a ~~very large~~ an impact on California's total short term carbon footprint while also impacting~~disrupting~~ the daily lives of residents in an entire neighborhood.

**Introduction, page 10:**

On April 29, 2015, Governor Edmund G. Brown Jr. established a new statewide greenhouse gas (GHG) emissions reduction goal to reduce emissions 40 percent below 1990 levels by 2030.<sup>1</sup> The Clean Energy and Pollution Reduction Act of 2015 (Senate Bill 350, De León, Chapter 547, Statutes of 2015) (SB 350) requires the adoption of integrated resource plans that achieve greenhouse gas emission reductions of 40 percent from 1990 levels by 2030 and the procurement of 50 percent eligible renewable energy resources by December 31, 2030~~subsequently codified the Governor's 2030 GHG reduction goal for all load serving entities~~. The Governor's executive order and SB 350 strengthen the state's position to meet its 2050 goal of reducing GHG emissions 80 percent below 1990 levels.<sup>2</sup> The 2030 goal also builds on the mandatory target set forward in California's Global Warming Solutions Act of 2006 (Assembly Bill 32, Núñez, Chapter 488, Statutes of 2006) to achieve 1990 emission levels by 2020. The state is well on its way to meeting its 2020 target.<sup>3</sup> Figure 1 plots California's GHG reduction goals against historical GHG emissions. As discussed in more detail below, Governor Brown spearheaded the adoption of similar goals by subnational leaders worldwide.

**Chapter 2, page 62:**

In his January 2015 inaugural speech, Governor Edmund G. Brown Jr. stated that California is "well on its way" to meeting its goal to reduce carbon pollution to 1990 levels by 2020. The Governor went on to state that "now, it is time to establish our next set of objectives for 2030 and beyond." One of the goals he put forward is to "increase from one-third to 50 percent our

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<sup>1</sup> Executive Order B-30-15, <http://gov.ca.gov/news.php?id=18938>.

<sup>2</sup> California's 2050 climate goal was reiterated in B-30-2015 and previously put forward in in Executive Orders S-3-05 <http://gov.ca.gov/news.php?id=1861> and B-16-2012 <http://gov.ca.gov/news.php?id=17472>.

<sup>3</sup> California Air Resources Board, *The First Update to the Climate Change Scoping Plan: Building on the Framework*, May 2014, [http://www.arb.ca.gov/cc/scopingplan/2013\\_update/first\\_update\\_climate\\_change\\_scoping\\_plan.pdf](http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf).

electricity derived from renewable sources” within the next fifteen years.<sup>4</sup> The Clean Energy and Pollution Reduction Act of 2015 (Senate Bill 350, De León, Chapter 547, Statutes of 2015) codifies reducing greenhouse gas (GHG) emissions by 40 percent from all load serving entities by 2030 which will require increasing renewable resources to 50 percent by 2030. requires the adoption of integrated resource plans that achieve GHG emission reductions of 40percent from 1990 levels by 2030 and the procurement of 50percent eligible renewable energy resources by December 31, 2030.

### **Chapter 5, page 169:**

With the passage of Senate Bill 350 (De León, Chapter 547, Statutes of 2015) and Assembly Bill 802 (Williams, Chapter 590, Statutes of 2015) (AB 802), future iterations of the electricity demand forecast will include greater emphasis on detailed, localized, and sector-specific analysis of energy demand trends. This more granular analysis will be needed to support the state’s policy goals including setting, assessing, and advancing energy efficiency goals discussed in Chapter 1 and to help optimize the integration of increasing amounts of renewable energy discussed in Chapter 2. Among other provisions, AB 802 clarifies the Energy Commission’s authority to collect energy usage data needed to support implementation of the various provisions in the bill. As a result, the Energy Commission will build its capabilities to manage and provide rigorous analysis of the data in support of energy demand forecasts.

As part of the 2016 IEPR Update, the Energy Commission will work to forecast hourly loads as opposed to annual loads. For example, incorporating hourly load data into the forecast is needed to better understand the potential impacts of increases in behind-the-meter PV systems and electric vehicle charging on the magnitude and timing of peak demand (peak is shifting to later in the day).

### **Chapter 5, page 188:**

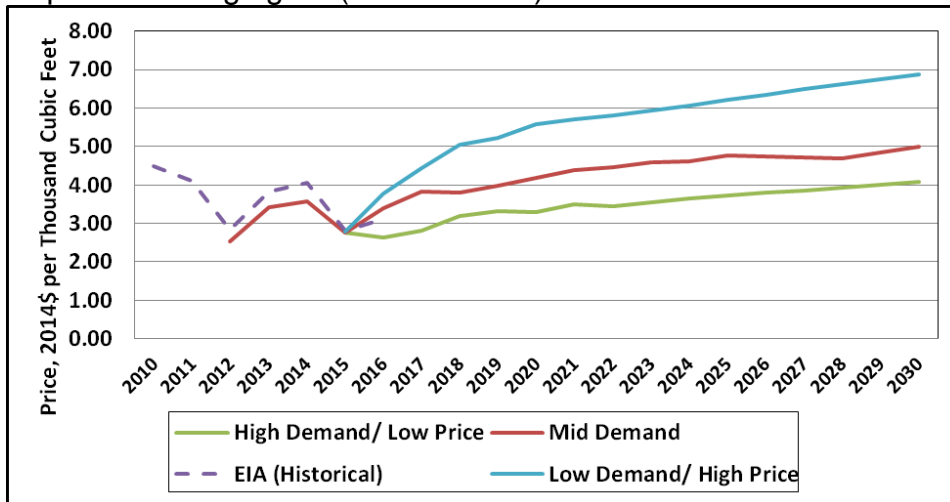
- **Focus efforts in the next year on data needs and methodology improvement.**  
In addition to developing an assessment of data needs and accompanying procurement process, the Energy Commission, CPUC, and the California Independent System Operator ~~three agencies~~, along with the utilities, should cooperate as part of the in 2016 Integrated Energy Policy Report Update to facilitate methodological improvements associated with the demand forecast. This should, including solar photovoltaic and efficiency modeling and potential influences of other load-modifying resources identified in Senate Bill 350, through Demand Analysis Working Group and Joint Agency Steering Committee discussions.

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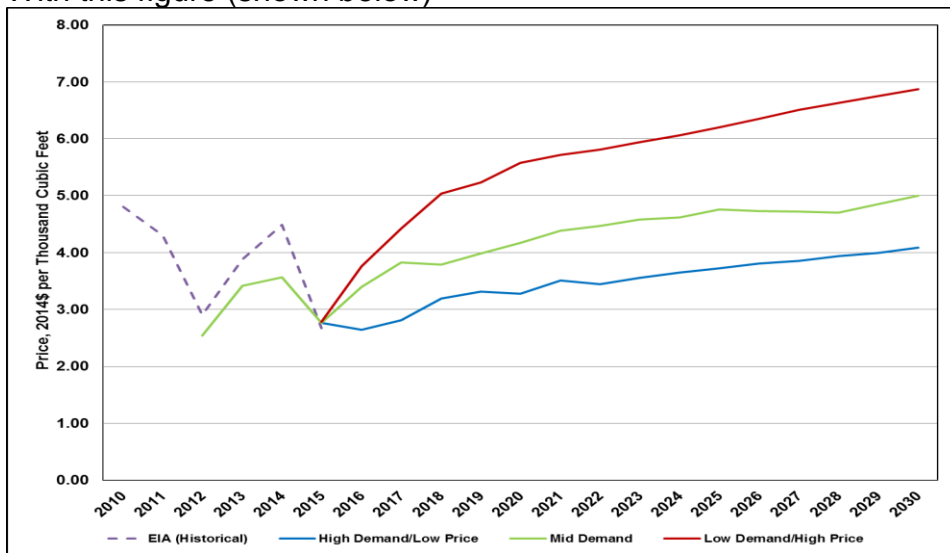
<sup>4</sup> The inaugural address is discussed further in the Introduction. The other two goals the Governor identified were “Reduce today’s petroleum use in cars and trucks by up to 50 percent; Double the efficiency of existing buildings and make heating fuels cleaner” which are discussed in Chapters 4 and 1, respectively.

**Chapter 6, page 211, Figure 48:** Common Case Natural Gas Price Results (Henry Hub Prices)

Replace existing figure (shown below)



With this figure (shown below)



**Chapter 6, page 215, Table 11:** Change Table Title from “Statewide Baseline End-Use Natural Gas Forecast Comparison Demand” to “Statewide End-Use Natural Gas Demand Forecast Comparison With AAEE”

**Chapter 6, page 205, text box****Natural Gas Leak at Aliso Canyon**

On October 23, 2015, a natural gas leak was detected in SoCalGas' Aliso Canyon natural gas storage facility. Initial efforts to plug the leak were unsuccessful and nearby residents complained of noxious odors and physical ailments as a result of the exposure. On November 18, 2015, the California Department of Conservation, Division of Oil, Gas and Geothermal Resources<sup>1</sup> issued an order to SoCalGas that required the operator to provide testing results, data, and written plans to address the leak. SoCalGas indicated that they would construct a relief well to stop the leak and then close or abandon the leaking well permanently. The construction of the relief well is expected to be complete by the end of February 2016. ~~take several months.~~ ~~The Los Angeles County Health Department's Preliminary Health Assessment indicated that the mercaptan odorant in the natural gas posed a health threat to the community, including short-term neurological, gastrointestinal, and respiratory symptoms resulting from irritation. The department found that the methane in the gas posed little direct health threat upon inhalation.~~ On January 15, 2015 the Office of Environmental Health Hazard Assessment announced the appointment of eight physicians and scientists to the independent panel to review public health concerns stemming from the gas leak and evaluate whether additional measures are needed to protect public health beyond those already put in place. ~~However, estimates~~ Estimates of the amount of methane that escaped into the atmosphere also raised concerns about the potential adverse greenhouse gas impacts of the leak.

## Chapter 6, page 215, Table 11:

Replace existing table (shown below)

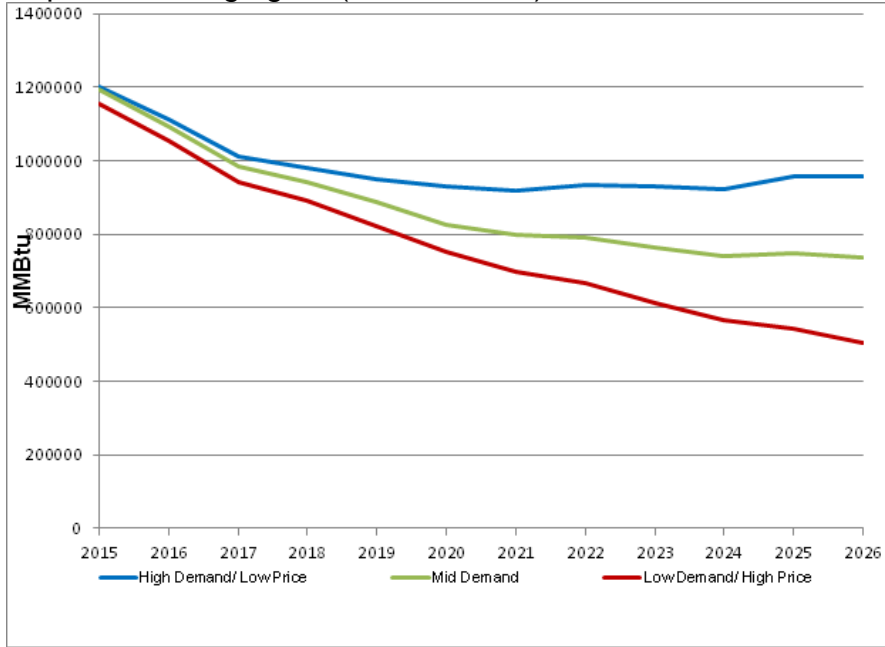
	2013 CED End-Use Natural Gas Mid Demand	2015 CED End-Use Natural Gas High Demand	2015 CED End-Use Natural Gas Mid Demand	2015 CED End-Use Natural Gas Low Demand
1900	12,892	12,892	12,892	12,892
2000	13,913	13,913	13,913	13,913
2013	12,515	13,240	13,240	13,240
2015	12,675	13,351	13,290	13,276
2020	12,728	14,110	13,682	13,487
2024	12,736	14,527	13,914	13,735
<b>Average Annual Growth Rates</b>				
1990-2000	0.76%	0.72%	0.72%	0.72%
2000-2012	-0.71%	-0.70%	-0.70%	-0.70%
2012-2015	-0.21%	1.81%	1.56%	1.41%
2012-2022	0.04%	1.23%	0.86%	0.72%
2012-2024	0.03%	1.16%	0.80%	0.69%
Historical data appear in the shaded cells				

With this table (shown below)

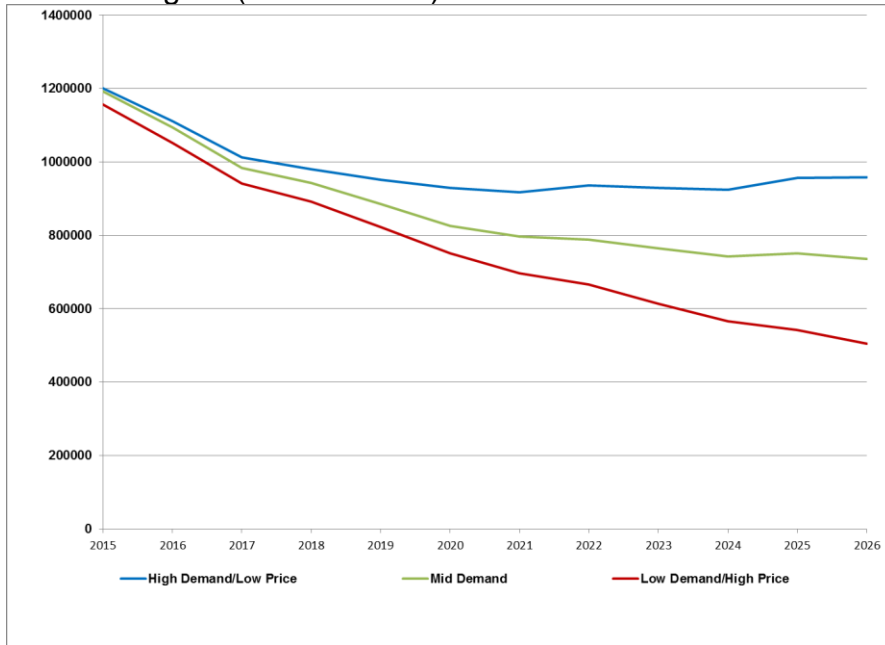
Values are in Million Therms	2013 CED End- Use Natural Gas Mid Demand Case	2015 End-Use Natural Gas High Demand/Low Price Case	2015 End-Use Natural Gas Mid Demand Case	2015 End-Use Natural Gas Low Demand/High Price Case
1990	12,892	12,892	12,892	12,892
2000	13,917	13,913	13,913	13,913
2013	13,042	13,240	13,240	13,240
2015	13,208	13,164	13,103	13,086
2020	13,260	13,545	13,136	12,782
2024	13,271	13,731	13,123	12,673
<b>Average Annual Growth Rates</b>				
1990-2000	0.77%	0.77%	0.77%	0.77%
2000-2013	-0.50%	-0.38%	-0.38%	-0.38%
2013-2015	0.64%	-0.29%	-0.52%	-0.58%
2013-2020	0.24%	0.33%	-0.11%	-0.50%
2013-2024	0.16%	0.33%	-0.08%	-0.40%
Historical data appear in the shaded cells				

**Chapter 6, page 216, Figure 52: Natural Gas Burn for Power Generation in California (000s MMBtu)**

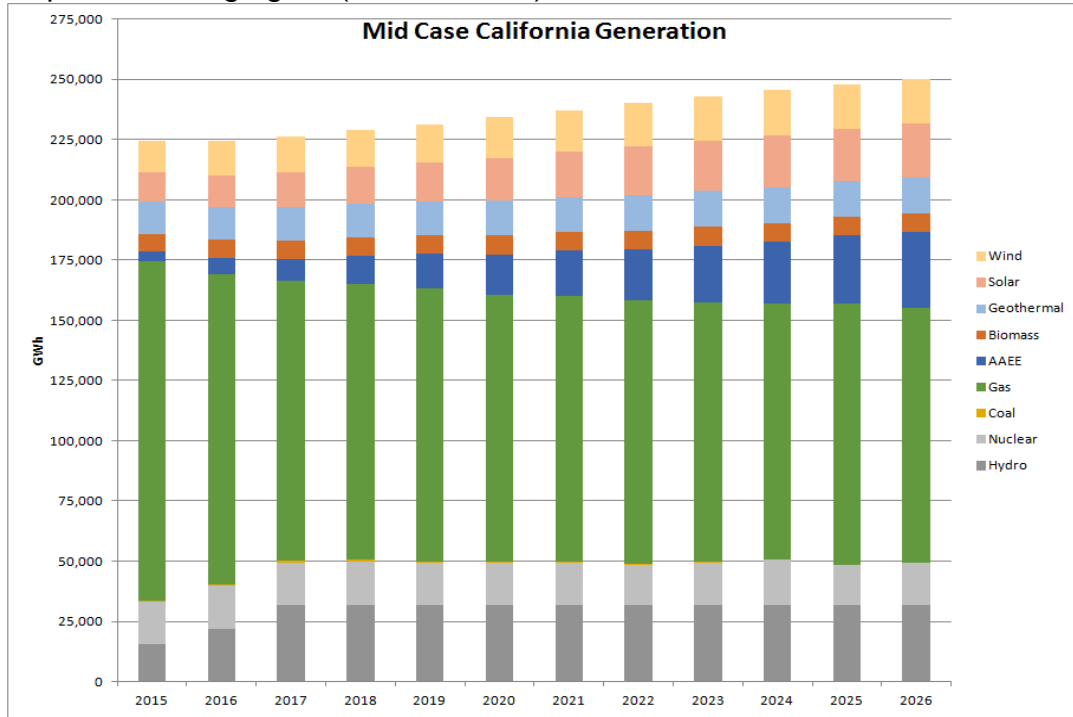
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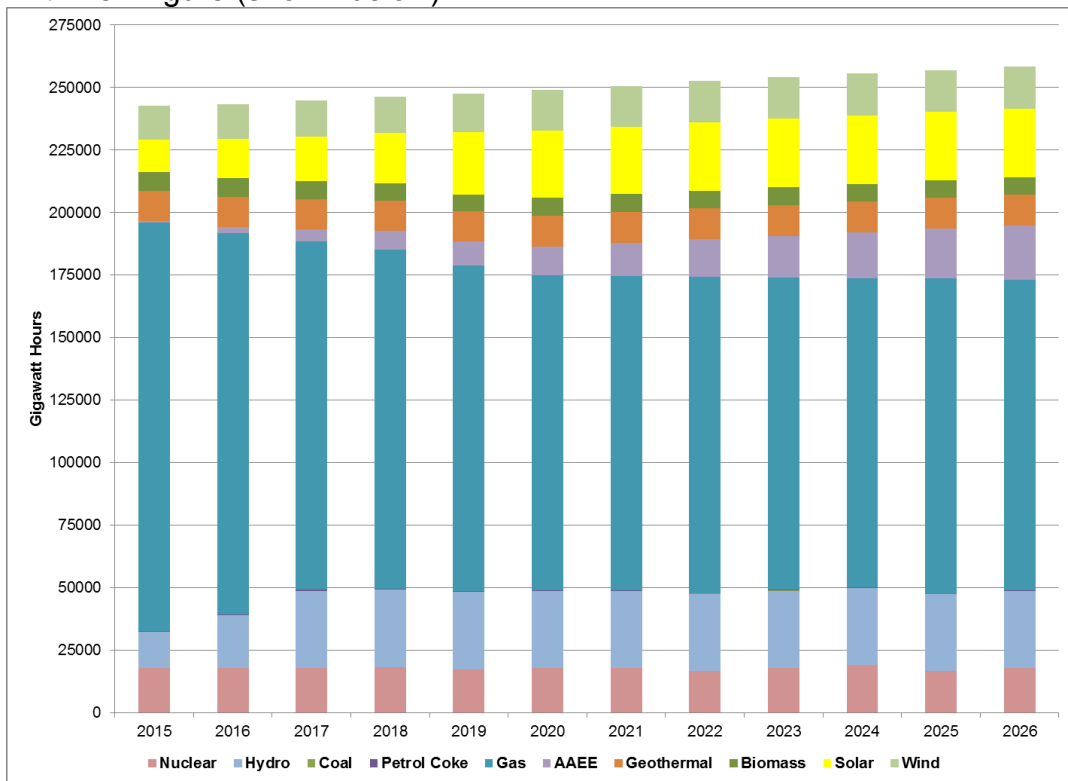
With new figure (shown below)



**Chapter 6, p. 217, Figure 53: Mid Demand Case Generation Fuel Sources 2015-2026**  
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**Chapter 7, page 230, first paragraph:**

During the April 2015 workshop at the Energy Commission on nuclear issues, PG&E indicated that it had not decided whether it will operate Diablo Canyon beyond its current licensed period, (2024 and 2025). PG&E noted several factors that will influence its decision, including whether or how it must comply with the once-through cooling (OTC) policy and any feedback or developments arising from the recently completed seismic studies. (See below for more details on these subjects.) PG&E now also faces the possibility that the California State Lands Commission may require PG&E to complete an environmental impact review as part of its review of a renewal of certain land leases (see the sidebar on the previous page for further details). An additional consideration raised in public comments to the Energy Commission is that the operation of Diablo Canyon supports the local economy by providing high paid technical, scientific, and engineering positions.<sup>5</sup>

**Chapter 7, page 245 new paragraph**

A study completed by Energy+Environmental Economics, the *Pathways Study*, shows that Diablo Canyon is not needed to meet California's GHG goals. The study examined various pathways to reduce GHG levels in 2030 to achieve the 2050 GHG reduction goal. The study assumed in the reference case and several other scenarios that Diablo Canyon would not be relicensed and would cease operations after 2025. The study showed that natural gas-fired generation would increase in the years after Diablo Canyon ceases to operate, and this generation would not be GHG emissions-free. However, the state will still be able to meet its climate goals by relying on other measures to reduce GHG emissions.

Still, the Energy Commission recognizes that Diablo Canyon is a low GHG source of electricity that can help meet the state's energy requirements at a time when the focus is increasingly on reducing GHG emissions. In response to public comments in support of Diablo Canyon for its GHG benefits, and because of the multifaceted issues surrounding nuclear energy in California, the Energy Commission plans to hold a public workshop on nuclear power as part of the 2016 IEPR Update.<sup>6</sup>

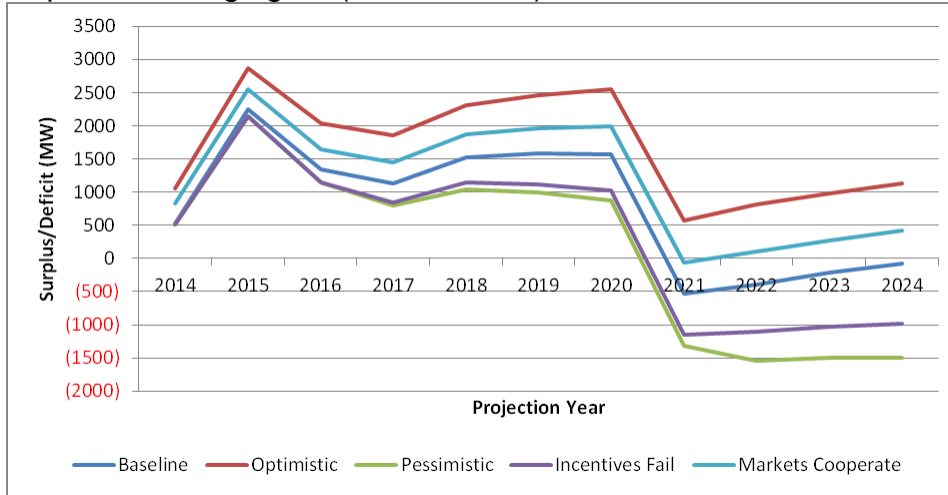
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<sup>5</sup> Docket number 15-IEPR-12, TN Number: 210179, Docket number 15-IEPR-12, TN Number: 210179, Francis Kowalik, *Diablo Canyon*, February 5, 2016, [http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-12/TN210179\\_20160205T110320\\_Francis\\_Kowalik\\_Comments\\_Diablo\\_Canyon.pdf](http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-12/TN210179_20160205T110320_Francis_Kowalik_Comments_Diablo_Canyon.pdf), and TN Number 210175, Michael Shellenberger, January 29, 2016, [http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-12/TN210175\\_20160205T104629\\_2416\\_Email\\_Response\\_from\\_Chair\\_Weisenmiller\\_to\\_Kirk\\_Gothier\\_R\\_E.pdf](http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-12/TN210175_20160205T104629_2416_Email_Response_from_Chair_Weisenmiller_to_Kirk_Gothier_R_E.pdf).

<sup>6</sup> For a listing of public comments received on the October 2015 final draft 2015 IEPR, see [http://www.energy.ca.gov/2015\\_energypolicy/documents/#02102016](http://www.energy.ca.gov/2015_energypolicy/documents/#02102016).

**Chapter 7, page 255, Figure 58:** Baseline and Alternative Scenario Results Showing Local Capacity Surpluses/Deficits for the Los Angeles Basin Local Capacity Area

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