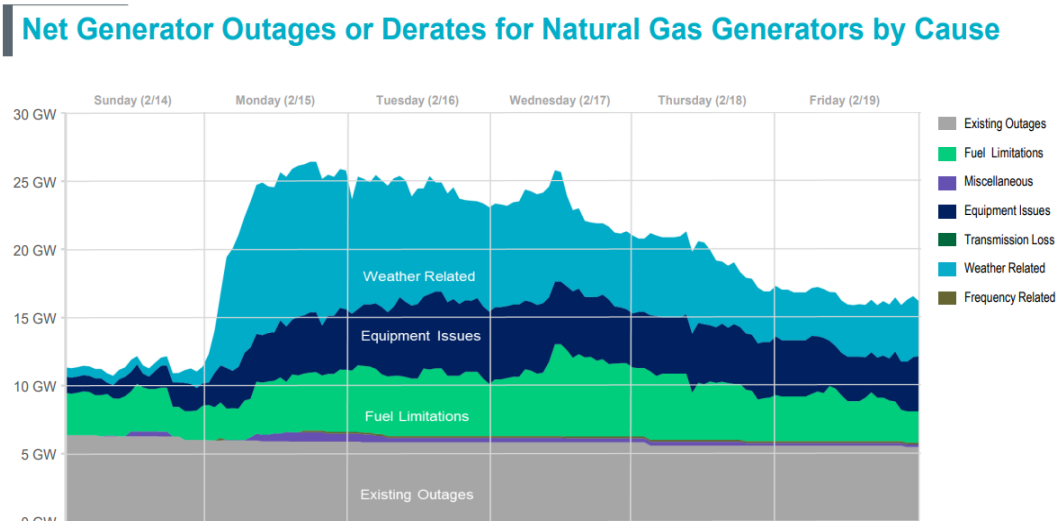
58. The Financial Analysis finds that owning generation like coal or gas can be an important hedge during extreme weather conditions. Nevertheless, in 2021, we had exactly the opposite occur - CPS Energy owned fossil generation like STP and Calaveras which did not operate as expected, resulting in exposure to volatile market prices. Does the analysis assume that all existing plants and future plants (i.e. Spruce Converted to Gas) would actually operate in extreme weather conditions? Did the study take into account the extra weatherization costs?

- The Extreme Weather scenario is designed to test the performance of CPS Energy's portfolios if conditions similar to the 2021 Winter Storm Uri and 2011 Extreme Heat events were to be observed in 2030. Following Storm Uri, the Texas Legislature passed Senate Bill 3 requiring power generation companies to weatherize their assets to better prepare their generation facilities against extreme weather. It was assumed that by 2030:

  i. For gas-fired power plants, it was assumed that Senate Bill 3 will reduce the likelihood of outages due to weather-related and equipment issues. However, weatherization actions may not fully address fuel availability issues, as the Bill does not apply to the entire natural gas production and transportation system. Therefore, when modeling the Extreme Weather sensitivity, it was assumed that weather and equipment issues would be mitigated by CPS Energy's weatherization program, while fuel unavailability will still pose some risk.

  The chart below shows actual gas generation outages during the 2021 Winter Storm Uri by cause. The total capacity outage due to fuel unavailability (green area) across ERCOT was approximately 4 GW on average during the storm. There were 56 GW of installed gas capacity in 2021, meaning that approximately 7% of ERCOT installed capacity was out due to fuel availability issues. Therefore, in the Extreme Weather sensitivity, it was assumed that CPS Energy's natural gas capacity would be reduced by 7 percentage points to account for potential fuel unavailability risk.



Source:
https://www.ercot.com/files/docs/2021/04/28/ERCOT_Winter_Storm_Generator_Outages_By_Cause_Updated_Report_4.27.21.pdf

  ii. For wind turbines, the adoption of cold weather packages was assumed to be more widespread for the Extreme Weather sensitivity, such that outages due to frozen wind turbines would be lower than they were in the 2021 Winter Story Uri. It was assumed that by 2030 the outage rates for wind turbines during the modeled 2030 winter storm

event would be reduced by one-third relative to the outage rates observed during the 2021 Winter Storm Uri.

iii. For solar PV, no adjustments were made to the actual hourly capacity factors from the equivalent days during the 2021 Winter Storm Uri. This is because solar outages during the Winter Storm appeared to be largely due to storm conditions (i.e. snow, ice, and cloud cover) and not due to equipment issues. Therefore, Senate Bill 3 was assumed to have minimal impact on the performance of solar PV during a winter storm.

- CPS Energy has and will continue to undertake actions to weatherize plants and related equipment, and these costs are either "sunk" (already spent) or incorporated in base budget estimates. Baseline weatherization packages are expected to be part of the new build costs for new gas or wind additions, likely making such new projects more reliable than older retiring assets.

59. The backup financial materials include estimated costs for fuel for the 9 different scenarios. Please explain why the table entitled "Fuel Costs Revenue Requirements ($) including City Payment (CP) (excluding STEP and URI) for each portfolio for the Reference scenario by calendar year". On page 5 from the additional financial detail from the November 19th meeting assumed that Reference Case P3 would begin to be more expensive once the Spruce 1 and Spruce 2 units would be retired? If the plan is to replace the coal units with additional renewable investments – which have a marginal fuel cost of $0 (assuming wind and solar), why would fuel costs go up for this scenario rather than down?

- Fuel expenses consist of the following items:
    i. fuel for fossil and nuclear generation,
    ii. the costs of purchasing power from the market,
    iii. costs from Power Purchase Agreements (PPA), and
    iv. costs for carbon emissions where applicable
- In Portfolio P3, prior to 2030, the only new resource additions that are allowed to replace the Spruce 1 & Spruce 2 coal units (and other units that are shut down) are wind, solar, and short-duration storage. The new wind, solar, and short-duration storage resources are assumed to be acquired through PPAs, and the PPA expenses are included in the Fuel Expense category.

60. The analysis seems to take into account the availability of PTC and ITC tax credits from passage of the IRA for investments in storage, renewables, geothermal and other technologies. At slide 14, however, the asterisk under the "Technology Cost" column, bottom row, could be read to suggest that the IRA applies only to that "Volatile Market" scenario. Please confirm that the IRA costs are incorporated under all scenarios.

- The generation planning modeling has two major stages: (i) ERCOT-level market modeling and (ii) CPS Energy portfolio modeling. In the first stage, CRA modeled the future capacity mix, generation mix, and electricity market prices *across all of ERCOT* under the four scenarios. The purpose of the first stage is to develop internally consistent future views of the ERCOT market within which CPS Energy operates. In the second stage, CRA developed nine optimized CPS Energy resource portfolios using the Reference Scenario assumptions and then evaluated the performance of the nine portfolios against the four external ERCOT scenarios (plus sensitivities).

- For the purpose of modeling the wider ERCOT market, CRA performed the core analysis over the summer, while the IRA was still being debated in Congress. As such, the IRA provisions were only explicitly included in the Net Zero Economy and Volatile Market scenarios, allowing for a range of potential outcomes across the ERCOT-level modeling. For ease of Reference, slide 14 is re-produced below, noting that the IRA tax credits were incorporated at the ERCOT level in the NZE and VMA scenarios.

Scenario Parameters

ERCOT Market Scenarios

CRA developed 4 ERCOT Market scenarios, which are designed to reflect diverse but possible future states of the world. Each scenario comprises a combination of five input variables whose levels vary across the scenarios, as shown below.

ERCOT Scenario	Natural Gas Prices	Carbon Policies	Technology Costs	Demand Growth	ERCOT Market Design Change
Reference Scenario (REF)	Baseline	Baseline carbon price	Baseline	Baseline	Confirmed changes only
Carbon-Based Economy (CBE)	Lowest due to production increases	No carbon price	Baseline	High demand driven by low fuel and carbon prices	Confirmed changes only
Net Zero Carbon Economy (NZE)	Low due to electrification drive	High carbon price	Faster decline + Inflation Reduction Act Tax Credits*	Highest demand driven by electrification	Capacity market launched & seasonal reserve margins
Volatile Market (VMA)	High	No carbon price to alleviate inflation pressure	Slower decline + Inflation Reduction Act Tax Credits*	Low demand due to high natural gas prices	Confirmed changes only

*Note that all CPS Energy portfolio analysis incorporates IRA tax credit provisions.

14

CRA Charles River Associates

- All CPS Energy portfolio modeling was performed after the passage of the IRA, and CRA incorporated the impact of the IRA on CPS Energy renewable costs when developing the nine optimized CPS Energy resource portfolios, *and* for evaluating the performance of the nine portfolios across *all* the four scenarios (this was noted in the footnote on Slide 14 above). In other words, the affordability metrics in the scorecard account for the lower cost of CPS Energy renewable technologies due to the IRA provisions across *all* scenarios.

61. Does the analysis incorporate the available adders for resources sited in "energy communities," such as at the Calaveras facility or in the same census tract? Or the adder for generation resources constructed with domestic materials?

- As noted in the response to Question #60, Inflation Reduction Act (IRA) tax credits (or federal subsidies) were incorporated in all modeling of CPS Energy portfolios, which means that the costs of solar, wind, geothermal, hydrogen, and storage technologies in all scenarios were adjusted for the benefits associated with the provisions in the IRA.

- For background, the IRA has extended or expanded a number of clean energy tax credits to broaden the list of eligible technologies, extend the period of eligibility into the 2030s, and allow municipal utilities like CPS Energy to receive benefits even without a tax liability through a "direct pay" provision (CPS Energy can still realize benefits through power

purchase agreements (PPAs) with developers that monetize the tax credits and pass the savings on to CPS Energy).[1] Relevant tax credit provisions include:

- The Production Tax Credit (PTC), which provides a subsidy for every MWh of clean energy produced over a ten-year period.
- The Clean Hydrogen Tax Credit, which provides a subsidy for every kilogram (kg) of clean hydrogen produced over a ten-year period.
- The Investment Tax Credit (ITC), which provides an upfront subsidy equivalent to a percentage of the capital costs of a qualifying technology.

The IRA has introduced a tiered structure of tax credit levels, with various bonuses available if certain conditions are met:

- Baseline credits (subsidies) are available for all qualifying projects.
- A "*5 times*" bonus can be achieved if prevailing wage thresholds are met for a project's workforce and if apprenticeship programs are put in place. For example, the 6% base ITC can expand to a 30% ITC if such conditions are met.
- An additional 10% bonus is available if projects are sourced with domestically-produced content (for example, solar panels made in the U.S. instead of imported from overseas).
- An additional 10% bonus is available if a project is sited in a region that qualifies as an "energy community" by being in one of the following geographic areas:
  - Coal-retirement census tracts: Areas near retired coal mine or power plant infrastructure.
  - Fossil fuel employment statistical areas: Regions with historical employment in fossil fuel industries and where unemployment is high relative to the national average.
  - Brownfield sites: Properties with the potential presence of hazardous substances.

The table below provides a summary of tax credits that were incorporated in the CPS Energy portfolio analysis. In the table, green means that the IRA provision is included. Orange means that the provision is not included. N/A means that the provision does not apply.

Tax Credit	Value	Solar	Wind	Geo-thermal	H_2	Storage
Clean Electricity Production Tax Credit						
Baseline Production Tax Credit	$5/MWh				N/A	N/A
Prevailing Wage and Apprenticeship	$20/MWh				N/A	N/A
Domestic Content	$2.5/MWh				N/A	N/A
Energy Community	$2.5/MWh				N/A	N/A
Clean Hydrogen Production Tax Credit						
Baseline Production Tax Credit	$0.6/KG	N/A	N/A	N/A		N/A
Prevailing Wage and Apprenticeship	$2.4/KG	N/A	N/A	N/A		N/A
Clean Electricity Investment Tax Credit						
Baseline Investment Tax Credit	6% of CAPEX	N/A	N/A	N/A	N/A	
Prevailing Wage and Apprenticeship	24% of CAPEX	N/A	N/A	N/A	N/A	
Domestic Content	10% of CAPEX	N/A	N/A	N/A	N/A	
Energy Community	10% of CAPEX	N/A	N/A	N/A	N/A	

[1] Note that for modeling purposes, it has been assumed that CPS Energy would enter into a power purchase agreement with solar, wind, and storage developers, and that the developers would pass on the tax benefits to CPS Energy via a lower PPA price. For geothermal and hydrogen projects, it has been assumed that CPS Energy would build and own these projects and receive a direct payment equivalent to the value of the tax credits.

- In the absence of project-specific details for renewable projects, CRA assumed that the developers of solar, wind, geothermal, hydrogen, nuclear, and storage projects would receive the baseline tax credit level ***and*** the bonus for meeting the prevailing wage and apprenticeship requirements. The bonuses for domestic content and energy community requirements were ***not*** incorporated in the analysis. These IRA bonuses are project-specific, and eligibility can only be determined at a later time based on the choices of suppliers and project locations.
    - There is currently a very limited domestic supply chain for renewable project components, so it is too early to assess whether the domestic content bonus will be readily achievable for any projects in the next few years. Furthermore, the bonus is designed to offset the potential cost premiums associated with onshoring supply chains, and the likely higher cost associated with domestic-made materials has not been modeled.
    - The Energy Community provision will introduce opportunities in Texas for the 10% bonus, but CPS Energy will need to secure projects in qualifying geographies to realize the extra value. Furthermore, much of the state of Texas could be eligible under the employment clause, but eligibility is dependent on the relevant locality having an unemployment rate higher than the national average at the time of project development. Thus, qualification will vary year-to-year and cannot be guaranteed without knowledge of the specific project. Furthermore, the U.S. Treasury department has yet to publish rules and guidelines that will determine project eligibility.
- Although the modeling did not explicitly incorporate these bonus credit/subsidy opportunities, the renewable costs across scenarios provides a wide range of potential cost outcomes for CPS Energy. The table below shows the impact of adding the Energy Community bonus credits to the prices of solar, wind, 4-hour storage, 20-hour storage, and geothermal projects. (Note that hydrogen is not shown here as the Energy Community bonus does not apply).

  Including the Energy Community bonus reduces the prices of wind and solar by approximately 6%, storage by 14%, and geothermal by approximately 2% relative to the prices assumed for the Reference scenario in 2030. Meanwhile, the prices assumed for renewables in the Net Zero Economy scenario are significantly lower than the prices assumed in the Reference Scenario even when the Energy Community bonus credits are included.

	2030 Prices ($Nominal)				
	$/MWh		$/kW-year		$/MWh
Scenario	**Solar**	**Wind**	**4-Hour Storage**	**20-Hour Storage**	**Geo thermal**
Reference (REF)	33	34	97	193	109
REF + Energy Community Bonus	31	32	83	165	106
Net Zero Economy (NZE)	25	25	73	148	41

62. There are studies forecasting that increased renewable penetration as a result of the IRA could reduce energy market prices by 5-7% or more. At slide 59, the presentation indicates that, under the Volatile ERCOT Market Scenario, energy market prices are suppressed due to IRA-induced RE

growth. But the IRA is going to be effective, and should therefore result in a reduction of overall market prices, in all scenarios. Please explain why the IRA impacts to the energy market are not included in all scenarios.

- Please see response to Question #60 above.

63. Does the analysis consider direct grants that could be available to CPS Energy for a variety of investments or whether the additional tax credits available for locating in low-income or in energy corridors like Calaveras itself were considered? Did the analysis consider additional financial advantages that CPS Energy could take advantage of through use of provisions in the IRA? If so, please explain.

    - Please see response to Question #61 for a detailed review of the various IRA tax credits that were modeled. As noted in this response, the applicability of direct grants and additional tax credits to new renewable projects will be project-specific and depend on future procurement decisions and project locations. Furthermore, the renewable project costs in the Net Zero Economy scenario more than cover the likely range of additional bonus credit benefits and could be considered a proxy for evaluating the impact of overall lower renewable costs due to more generous subsidies or other federal benefits.
    - With regard to the Low-Income Community Bonus Credit, this is only available for wind and solar projects less than 5 MW in size, with an allocation of up to 1,800 MW nationwide for 2023 and 2024. While some small opportunities may be available under this provision, CPS Energy's capacity needs are at a far greater scale.

64. Did the analysis consider the direct grants and loans available through the IRA and IIJA to reduce demand and how that could be another strategy to reduce the need for meeting additional load and peak load? As an example, the IRA could have up to $174 million in weatherization and $650 million in rebates for energy efficiency rebates available for Texas in the next few years, a portion of which is expected to come to San Antonio, in addition to GHG reduction grants. Could CRA or CPS Energy create an additional sensitivity of how this could be used to reduce the need for either building additional capacity or running existing power plants?

    - The load forecast includes the impact of certain energy efficiency policies and their associated impacts on customer demand. IIJA impacts were incorporated in the load forecast, as the legislation was in effect at the time the load forecast was completed. The IRA was passed after the load forecast was completed and therefore its impact was not explicitly included. There are also uncertainties over the type of energy efficiency programs that would be available in Texas and San Antonio.
    - Note that the results of the enhanced STEP sensitivity may be considered as a reasonable proxy for the impact of additional energy efficiency on new capacity requirements. An Enhanced STEP program is shown to be cost beneficial for both P4 and P6.

65. The analysis includes an additional factor - a more aggressive STEP program as a factor to consider. However, CRA only applied this factor to P4 and P6 as two bookends. Can CRA provide an analysis for several other portfolios under consideration such as P3 and P9?

    - P4 and P6 were chosen for the STEP sensitivities as they represent two bookends of portfolio capacity generation mix. Therefore, the results from these two portfolios can be seen as upper and lower bounds within which the results for other portfolios would fall.
        - P4 retains coal, and the marginal capacity and energy to meet peak demand is a gas-fired power plant.

  - In P6 shuts down all coal by 2028, shuts down all gas units by 2035, and adds mainly renewables and battery storage resources. The marginal capacity and energy to meet peak demand is through battery storage.

- The STEP sensitivities show that an Enhanced STEP program could reduce the present value of revenue requirements by between $442 million and $526 million between 2023 and 2047 in P4 and P6, respectively. Given the relatively small range in revenue requirement impact (~$100 million in total impact over 25 years) between the two portfolios, additional runs are unlikely to provide meaningfully different impacts, and the results from P6 could reasonably be applied to other renewable portfolios (such as P3 and P9) for comparison purposes.

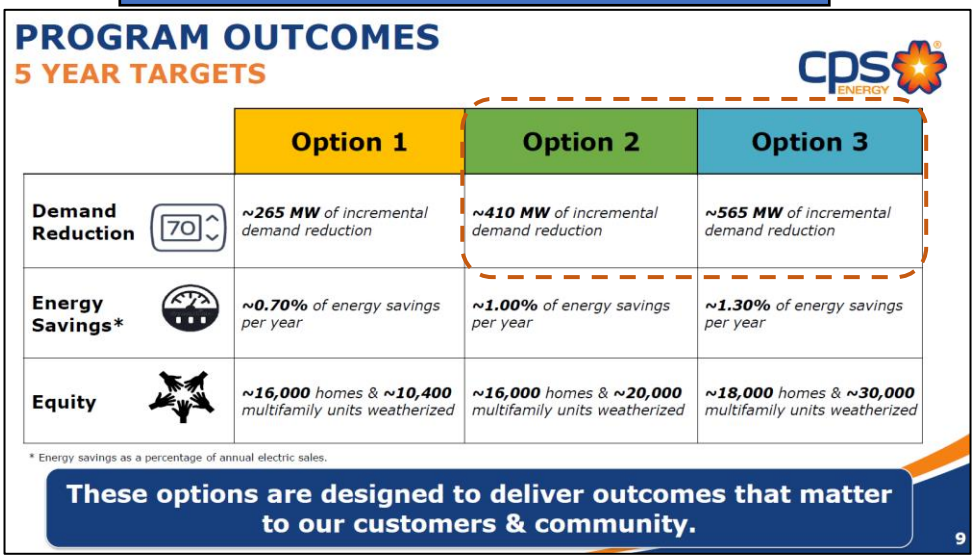
66. The analysis (at page 9, for example) includes a consideration of workforce impacts, both at Spruce and then local economic impacts. Does the local economic impact metric include expected economic growth likely to occur if CPS Energy takes advantage of the IRA's direct payment for building renewables and storage at or near Spruce. In other words, does the model add more RE and storage at Spruce taking advantage of the 10% adder for "energy communities" (for a total of at least 40% reduction in cost), and does the local economic impact metric factor that in?

    - The local economic impact metric only includes the amount of capital expenditures (capex) that could be expected to be spent within the Greater San Antonio area. It does not include the impact of the IRA, as the capex spent would be the same with or without the tax credits/subsidies. The IRA simply changes the allocation of the cost burden between local customers and the federal government.
    - It is assumed that CPS Energy would build (instead of entering into a PPA contract) new gas-fired power plants, hydrogen power plants, and geothermal power plants. This allows CPS Energy's control over the location of these plants, and therefore it is assumed that these new plants would be located within the Greater San Antonio area.
    - New wind, solar, and storage projects are assumed to be procured through power purchase agreements. As a result, CPS Energy would have less control over the project location. Therefore, capex associated with wind, solar, and storage are not included in the local economic impact metric. The local economic impact could be higher to the extent that project developers decide to locate their projects within the Greater San Antonio area or if CPS Energy were to acquire projects in the local area.

67. Please explain the apparent discrepancy of the impact of STEP sensitivities on capacity. The November RAC presentation, slide 38, shows that the STEP sensitivities have only 404 MW impact on P4, but CPS Energy's May 17, 2022 RAC Energy Efficiency & Conservation Program presentation, slide 9 is showing 410 MW STEP goal impact.

- Slide 9 from the May 17th RAC presentation is provided for reference, showing the 410 MW of incremental demand reduction in Option 2. Slide 38 from the November RAC presentation is also provided for reference, showing the 404 MW of capacity reduction in portfolio P4.

Slide 9 – May 17th RAC STEP Meeting



PROGRAM OUTCOMES
5 YEAR TARGETS

CPS ENERGY

	Option 1	Option 2	Option 3
Demand Reduction	***~265 MW*** *of incremental demand reduction*	***~410 MW*** *of incremental demand reduction*	***~565 MW*** *of incremental demand reduction*
Energy Savings*	***~0.70%*** *of energy savings per year*	***~1.00%*** *of energy savings per year*	***~1.30%*** *of energy savings per year*
Equity	***~16,000*** *homes &* ***~10,400*** *multifamily units weatherized*	***~16,000*** *homes &* ***~20,000*** *multifamily units weatherized*	***~18,000*** *homes &* ***~30,000*** *multifamily units weatherized*

* Energy savings as a percentage of annual electric sales.

These options are designed to deliver outcomes that matter to our customers & community.

9

Slide 38 – November RAC Gen Plan Meeting

Change in Portfolio Capacity Additions Relative to Reference Scenario

		RICE Unit	H_2 Unit	8-Hour Storage	20-Hr Storage
Enhanced STEP	P4	-404 MW (2029/37)	N/A	N/A	N/A
	P6	N/A	-240 MW (2034)	-100 MW (2028)	-100 MW (2038)
Reduced STEP	P4	+404 MW (2029/37)	N/A	N/A	N/A
	P6	N/A	N/A	N/A	+430 MW (2030/33/39)

- There is no discrepancy with the capacity values used in the STEP sensitivity analysis. The way to use Slide 9 and Slide 38 is as follows:

i. Slide 9: Option 2, with 410 MW of non-coincident[2] peak demand reduction (over a 5-year period), is the baseline STEP program included in all portfolios and extrapolated over the full 25-year analysis.

ii. Slide 9: Option 3, with 565 MW of non-coincident peak demand reduction (over a 5-year period), was leveraged in the Enhanced STEP sensitivity analysis.

iii. Slide 9: Comparing Option 2 and Option 3 (565 MW minus 410 MW), results in a 155 MW additional non-coincident peak demand reduction (over a five-year period), or approximately 31 MW additional non-coincident peak demand reduction per year, with an associated additional spend of approximately $30 million per year.

iv. Coincident peak is used in portfolio capacity planning analysis. To assess the impact of lower demand on portfolio P4 (i.e. Enhanced STEP), the 31 MW per year of additional non-coincident peak demand reduction must be converted to a coincident peak demand reduction, which is approximately 20 MW per year.

v. In the Enhanced STEP sensitivity analysis, the approximate 20 MW per year additional coincident peak demand reduction is applied in the last 20 years of the analysis[3], resulting in an approximate 400 MW of cumulative reduction in peak generating capacity needs.

vi. Slide 38: The 404 MW reduction shown in the November RAC presentation, slide 38, is the reduction in peak generating capacity needs to address the 400 MW of Enhanced STEP coincident peak demand reduction. The 404 MW does not exactly match the 400 MW of demand reduction because the portfolio modeling is limited by the types of capacity additions and the block sizes of the different generation technologies. In portfolio P4, each gas peaking unit is 202 MW in size, one is removed in 2029, and one is removed in 2037, resulting in 404 MW of reduction in peak generating capacity needs.

[2] Non-coincident peak is the maximum amount of demand reduction regardless of the system peak hour. Coincident peak is the amount of demand reduction at the system peak hour, typically the summer peak hour. Coincident peak is used in portfolio capacity planning analysis.

[3] "Baseline" STEP reductions are assumed in the first 5 years of all portfolios which aligns with the approved STEP program.