Puerto Rico Avoided Cost Modeling Technical Conference

Puerto Rico Energy Bureau

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Agenda

- Welcome
- Background / Project Overview
- Modeling Framework
- Data Inputs
- Results
- Discussion Questions
- Next Steps

Welcome

Welcome

Objectives:

1. Review study progress to date and draft results with stakeholders
2. Discussion of stakeholder questions and comments
3. Synapse to pose additional discussion questions and requests for information towards the end of the presentation
4. Further opportunity for written comments and questions after the workshop

Participation: Active participation is invited and welcomed. We will pause after each major section to ask if there are questions. Please hold your questions until these points in the presentation.

Background / Project Overview

Background

- Cost-effective energy efficiency programs could enable Puerto Rico to meet its goal of a 30 percent increase in energy efficiency (EE) by 2040 and potentially result in savings of over $1.6 billion.
- The Puerto Rico Energy Bureau (PREB) requires information on the cost-effectiveness of EE programs to meet both electric grid and customer needs.
- Determining the cost-effectiveness of these EE programs requires a two-step process:
    1. A cost-effectiveness screening test (the “Puerto Rico Test”) to define what costs and benefits to include in the evaluation of EE cost-effectiveness
    2. Quantitative values to populate the Puerto Rico Test. Central among these are the “avoided costs”

Project Overview

- Synapse is taking an “avoided cost” approach to estimate the benefits of EE in reducing required capital investments, system operating costs, and environmental impacts.
- The avoided cost evaluation will provide estimates of three types of avoided costs:
  - Avoided Energy
  - Avoided Capacity
  - Avoided Greenhouse Gas (GHG) Emissions
- There will be other avoided costs in the Puerto Rico Test, but these three likely comprise most of the avoided cost impacts, on a $ basis.
- Today, we will focus on the avoided energy cost methodology and results.

Modeling Framework

Modeling Overview

- **Model Framework:** Synapse used information from the IRP analysis conducted by PREPA and Siemens in 2019, as well as the Synapse Storage Study conducted for PREB, as the framework for the energy efficiency avoided cost study.
- **Model:** Synapse used the EnCompass Power Planning Software to model the avoided energy costs.
- **Scenario:** Synapse used the IRP's Scenario 3 Strategy 2 (S3S2) No Energy Efficiency with New Eco PPOA to align with the most recent PREB IRP Order.
  - Note: IRP based on Full EE scenario, but we are only using No EE scenario
- **Modeling Period:** 2021-2038
- **Topology and Transmission:** Modeled at a PREPA system-wide level and assumed unlimited transmission across regions.

EnCompass Model

- Developed by Anchor Power Solutions, EnCompass is a production cost and capacity expansion optimization model for the electric sector.
- EnCompass covers all facets of power system planning, including:
  - Short-term scheduling, including detailed unit commitment and economic dispatch, with modeling of load shaping and shifting capabilities
  - Long-term integrated resource planning, including capital project optimization, economic generating unit retirements, and environmental compliance
  - Market price forecasting for energy, ancillary services, capacity, and environmental programs

Method: Avoided Energy

- **Avoided Energy Costs**: EnCompass dispatch model generates forecasted hourly marginal energy costs for each year of the planning horizon given system-wide capacity, demand, generation retirements and expansions, unit heat rates and other attributes, and fuel prices.
- We include marginal transmission and distribution technical losses in the forecast of avoided energy costs because efficiency reduces losses between generation and end use.
- The marginal energy costs produced by EnCompass represent the clearing price for energy production in each hour and are weighted by hourly generation to reflect variation in the amount of energy paid for in each hour.

Data Inputs

EnCompass Data Inputs

- **Resource Mix and Retirements**
- **Load**
- **Fuel Prices**
- Technology Costs
- Renewable Portfolio Standard
- Ancillary Services

Resource Mix in 2021

PREPA's existing resource capacity is heavily dominated by oil, as the combination of RFO and diesel-based plants comprise 48% of existing capacity. However, natural gas and coal are used to serve a majority (64%) of the system's load.

Fuel	Max Capacity (MW)	Proportion of Total System Capacity
Coal	454	9%
Natural Gas	1,689	35%
Diesel	871	18%
RFO	1,463	30%
Renewable	346	7%
Total	**4,823**	**100%**

Table 1: Resource Max Capacity by Fuel

Sources: Horizon's National Database calibrated to the Siemens 2018 IRP

Resource Type	Capacity (MW)
Conventional Coal	454
Combined Cycle	1,413
Combustion Turbine	365
Steam Turbine	2,245
Hydroelectric	93
Solar PV	147
Wind	101
Landfill Gas	5

Table 2: Resource Max Capacity by Technology

Pre-2021 Retirements

We assumed that a portion of PREPA's diesel fleet is retired before the start of the modeling period.

Fuel	Resource	Max Capacity (MW)	Retirement Year
Diesel	Aguirre GT 21 & 22	42	2020
	Costa Sur GT 11 & 12	42	2020
	Daguao GT 11 & 12	42	2019
	Jobos GT 11 & 12	42	2019
	Palo Seco CT 11-31 (3 units)	126	2019
	Vega Baja	42	2019
	Yabucoa GT 11 & 12	42	2019

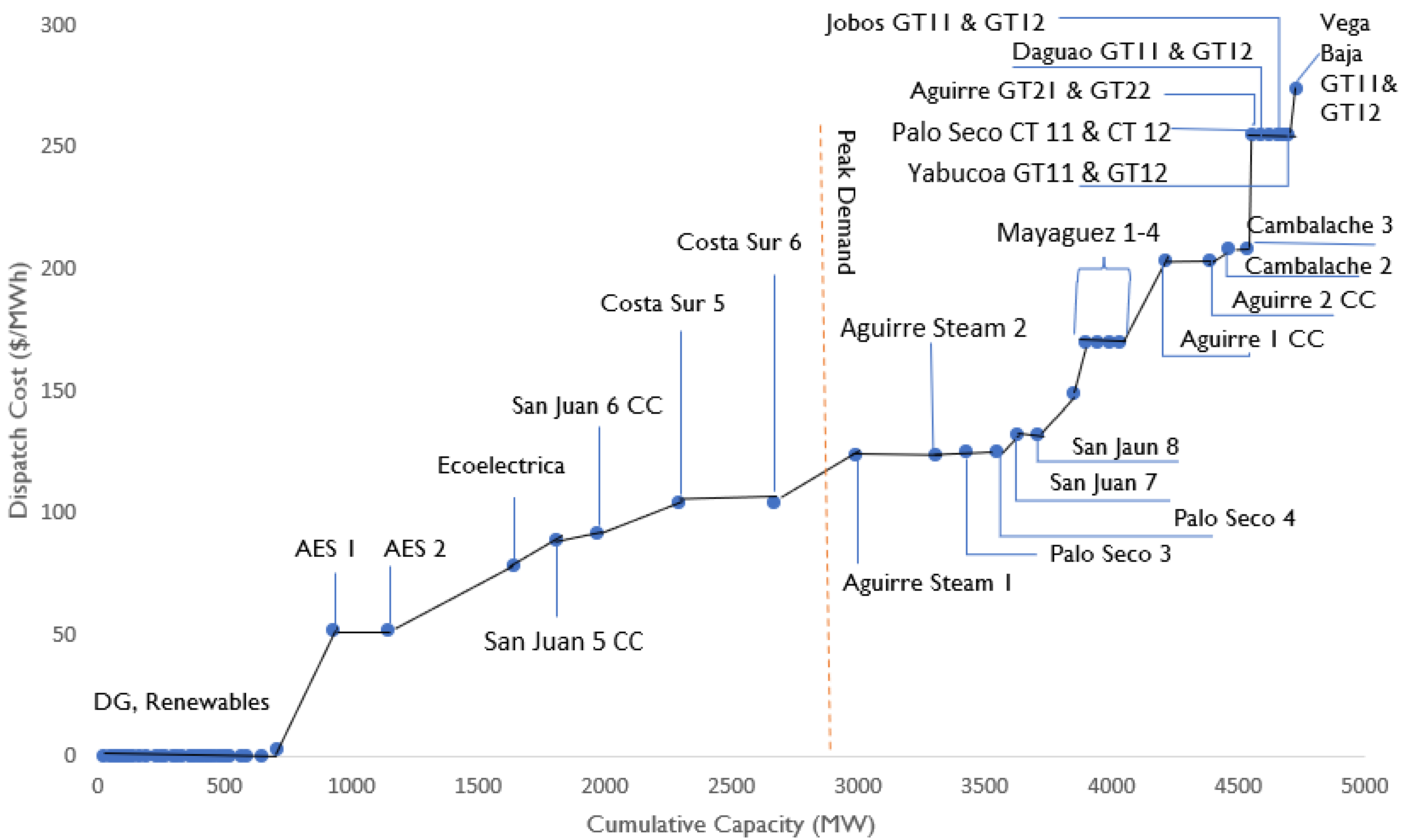
Source: 10.25.19 PREPA Frame 5000 Availability and Major Outage Remaining Life

Post-2021 Retirements

- **Synapse assumes that all fossil resources can retire, if economic, beginning in 2023.**
- AES Coal retires by 2027, reflecting the end to the Power Purchase Agreement (PPA) and assumptions on coal generation bans in Puerto Rico.
- RFO-based plants are forced to retire by 2025, if not already retired due to economic reasons.
- Natural gas fired plants are hardcoded to retire by 2040, except for EcoElectrica.

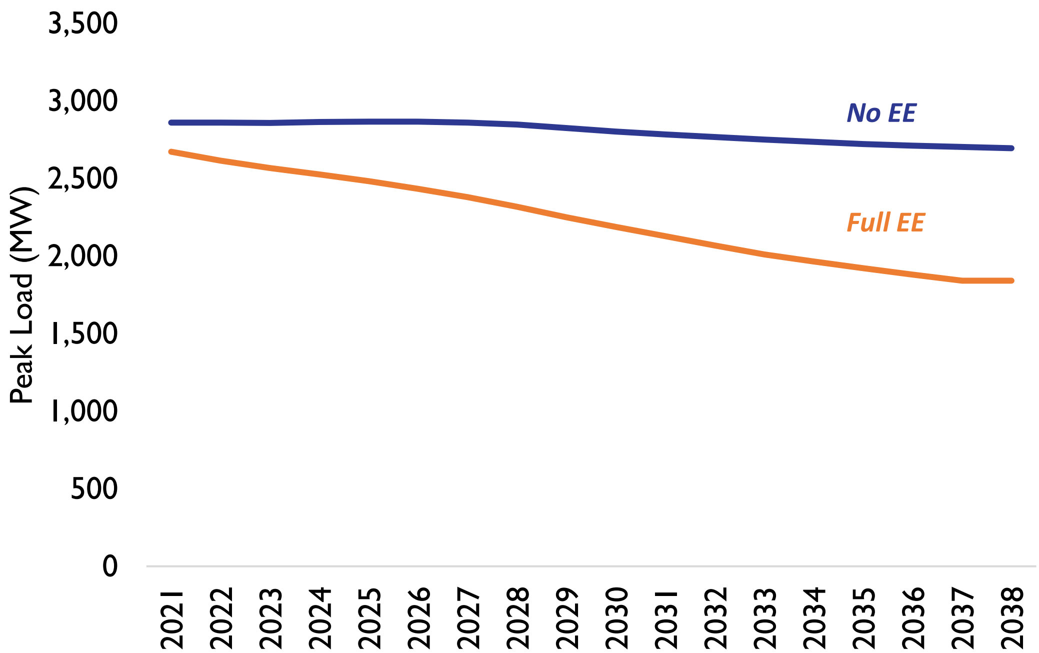
Fuel	Resource	Fixed Retirement Date
Coal	AES	2027
Diesel	Aguirre Combined Cycle 1 & 2	2025
RFO	Aguirre Steam 1 & 2	2025
	Palo Seco 3 & 4	2025
	San Juan 7 & 8	2025
Natural Gas	EcoElectrica	2032
	Costa Sur 5 & 6	2040
	San Juan 5 & 6	2040
Diesel	Mayaguez GT 1- 4	2040

Illustrative Generation Fleet Dispatch Stack



PREPA System Peak Demand – No EE vs. Full EE

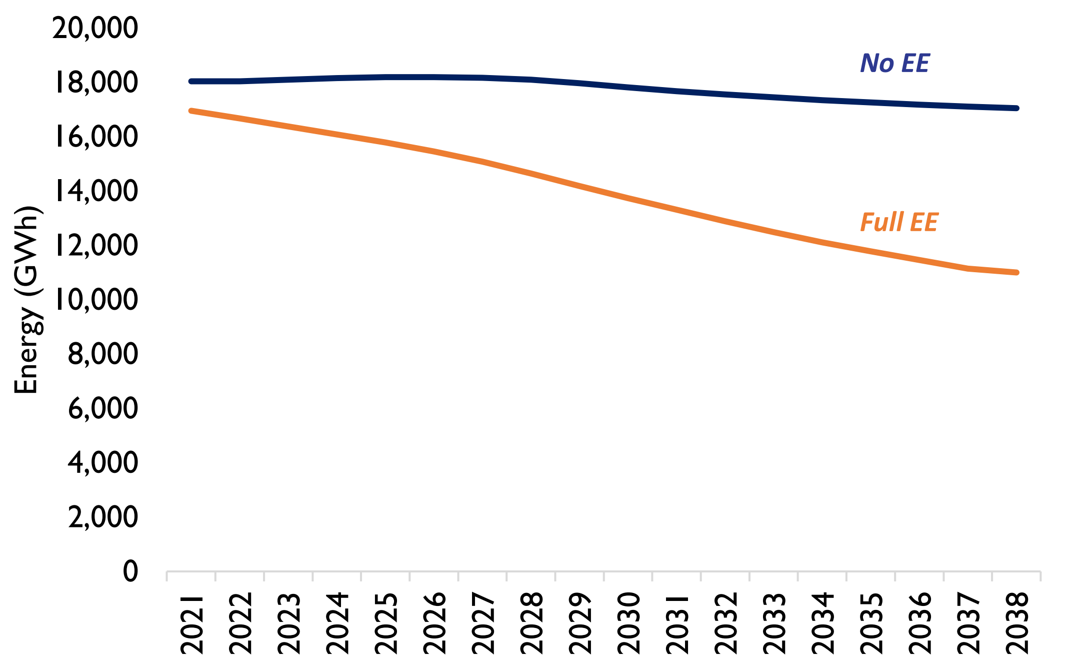
Period	No EE Annual Peak Load (MW)	Full EE Peak Load (MW)
2021	2,861	2,672
2022	2,861	2,615
2023	2,858	2,568
2024	2,864	2,526
2025	2,867	2,483
2026	2,867	2,434
2027	2,860	2,380
2028	2,848	2,318
2029	2,826	2,251
2030	2,803	2,188
2031	2,784	2,127
2032	2,767	2,068
2033	2,750	2,011
2034	2,736	1,965
2035	2,723	1,922
2036	2,712	1,880
2037	2,703	1,840
2038	2,695	1,842



Sources:
PREPA 2018 IRP LTCE RESULT - Scenario 3 Strategy 2 no EE with Eco New Contract
PREPA 2018 IRP LTCE RESULT - Scenario 3 Strategy 2 Base Load with Eco New Contract

PREPA System Load – No EE vs. Full EE

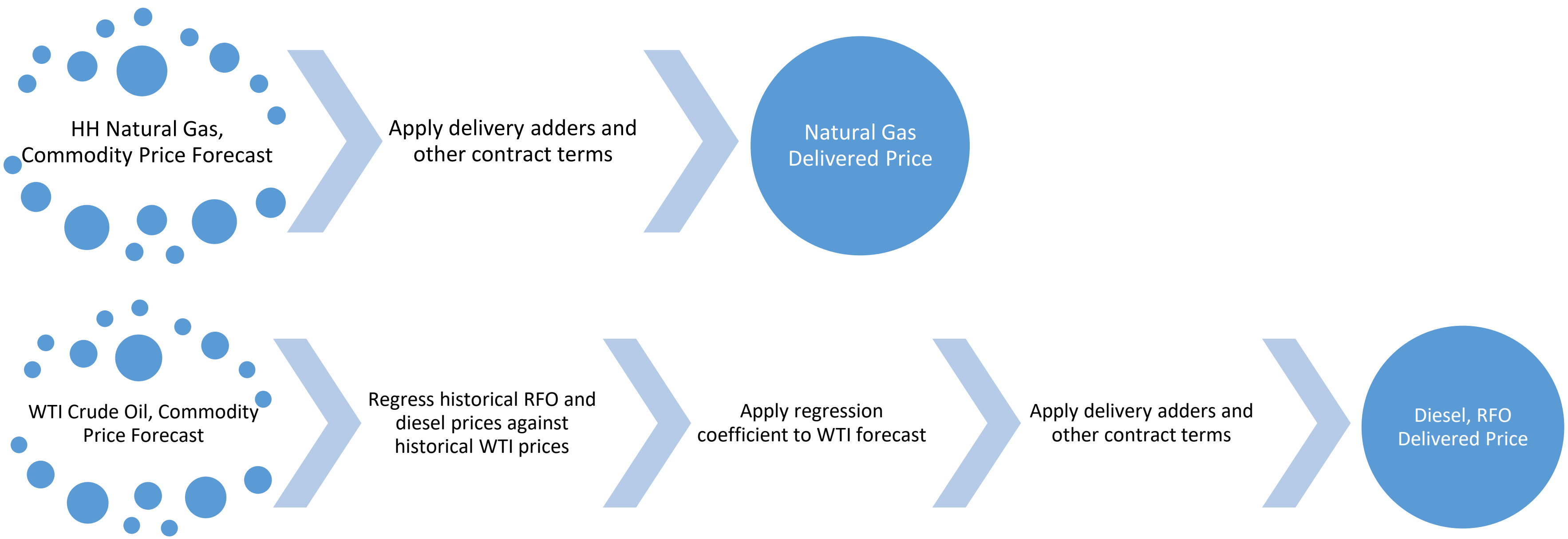
Period	No EE Annual Energy (GWh)	Full EE Annual Energy (GWh)
2021	18,033	16,955
2022	18,033	16,673
2023	18,101	16,377
2024	18,157	16,083
2025	18,190	15,787
2026	18,197	15,454
2027	18,169	15,080
2028	18,100	14,647
2029	17,972	14,180
2030	17,812	13,739
2031	17,678	13,312
2032	17,557	12,891
2033	17,445	12,482
2034	17,344	12,111
2035	17,255	11,780
2036	17,175	11,461
2037	17,107	11,149
2038	17,049	11,001



Sources:
PREPA 2018 IRP LTCE RESULT - Scenario 3 Strategy 2 no EE with Eco New Contract
PREPA 2018 IRP LTCE RESULT - Scenario 3 Strategy 2 Base Load with Eco New Contract

Fuel Prices: Overview

- Synapse used the same general methodology to forecast fuel prices as outlined by Siemens in its IRP analysis, and subsequently accepted by PREB. Synapse updated key inputs to these models, where applicable, to get more current forecasts.
- Below, is an illustration of the step-by-step approach of estimating fuel prices for natural gas, and oil products. More detail is given in the next few slides.



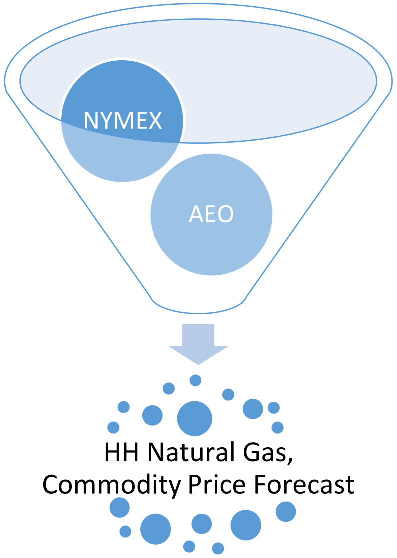
Fuel Prices: Natural Gas

The base Henry Hub natural gas price forecast is primarily made up of the:

(1) New York Mercantile Exchange (NYMEX) futures prices (forwards), which reflect near-term market sentiment and expectations regarding prices, and

(2) the 2021 Annual Energy Outlook (AEO), which reflects the long-term assessment by the U.S. Energy Information Administration of the outlook for energy markets through 2050.

- For the purposes of the forecast, the *Reference Case* is used, which reflects the best assessment of how U.S. and world energy markets will operate through 2050, based on key assumptions intended to provide a baseline for exploring long-term trends.



Year	Source
2021	Historical EIA
2022-2023	NYMEX Forwards
2024	Blended NYMEX Forwards and AEO
2025-2038	2021 AEO

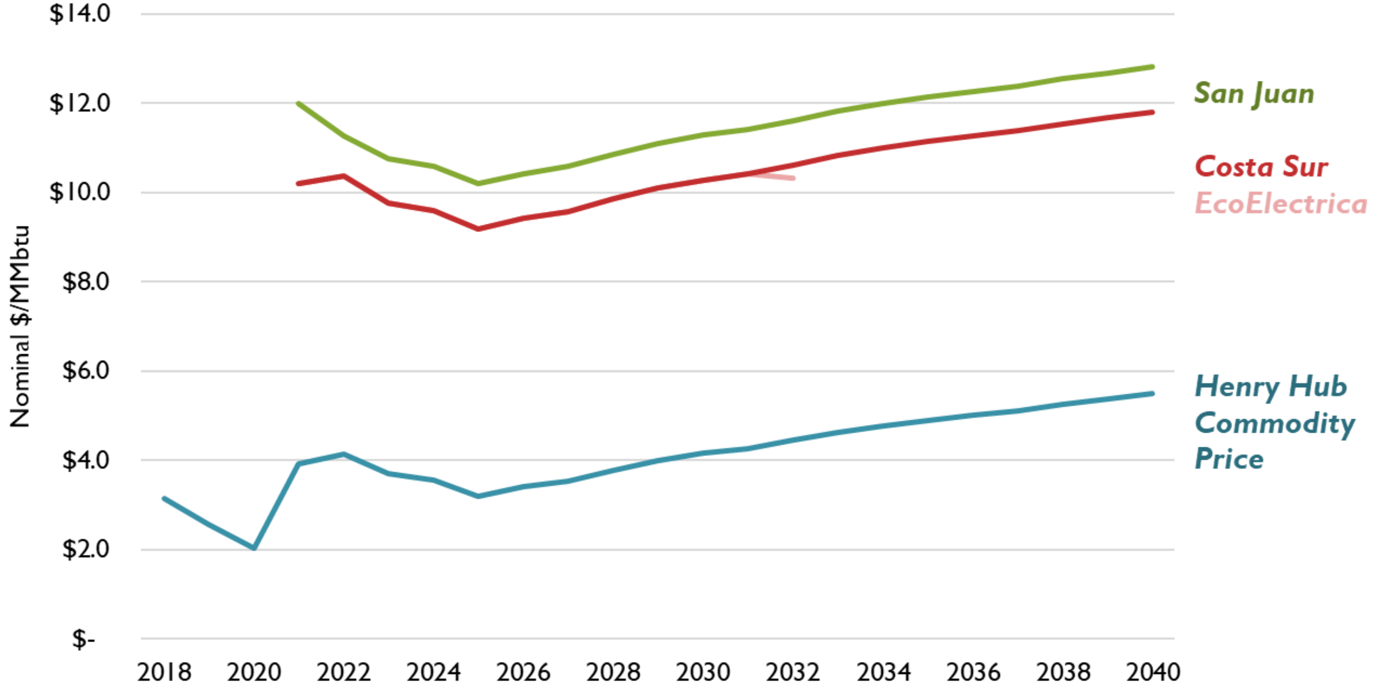
Fuel Prices: Natural Gas

- After deriving the base Henry Hub Natural Gas prices, Synapse used the pricing terms and conditions listed in the respective fuel price contracts to get the delivered fuel prices for each plant.
- Depicted below are the plants using natural gas, along with their primary fuel supplier and contract end date. For years after the contract end year, Synapse assumed that the pricing terms of the last contract year end date applied.

Power Plant	Supplier	Contract End Year
EcoEléctrica	Naturgy Approvisionamientos S.A	2032
Costa Sur 5	Naturgy Approvisionamientos S.A	2032
Costa Sur 6	Naturgy Approvisionamientos S.A	2032
San Juan 5	New Fortress Energia	2025
San Juan 6	New Fortress Energia	2025

Fuel Prices: Natural Gas

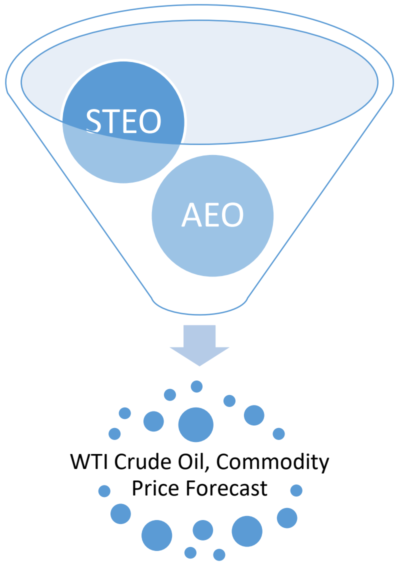
- Delivered prices for natural gas rise in the first 2 years, then decline from 2023 to 2025. Prices in later years follow a stable, long-term rising trend.
- San Juan delivered prices track higher than both Costa Sur and EcoElectrica, due to more expensive supplier pricing terms from New Fortress Energy.



Fuel Prices: Oil

The West Texas Intermediate crude oil price forecast is primarily made up of the:

- EIA Short Term Energy Outlook (STEO) which provides the U.S. Energy Information Administration's (EIA) near-term perspective on energy markets for the first two years (2022-2023)
- 2021 Annual Energy Outlook (AEO), which reflects the long-term assessment by the U.S. Energy Information Administration of the outlook for energy markets through 2050.
  - For the purposes of the forecast, the *Reference Case* is used, which reflects best assessment of how U.S. and world energy markets will operate through 2050, based on key assumptions intended to provide a baseline for exploring long-term trends.



Year	Source
2021	Historical EIA
2022-2023	Short Term Energy Outlook (STEO)
2024	Blended STEO and AEO
2025-2038	2021 AEO

Fuel Prices: Oil

WTI Crude Oil, Commodity Price Forecast

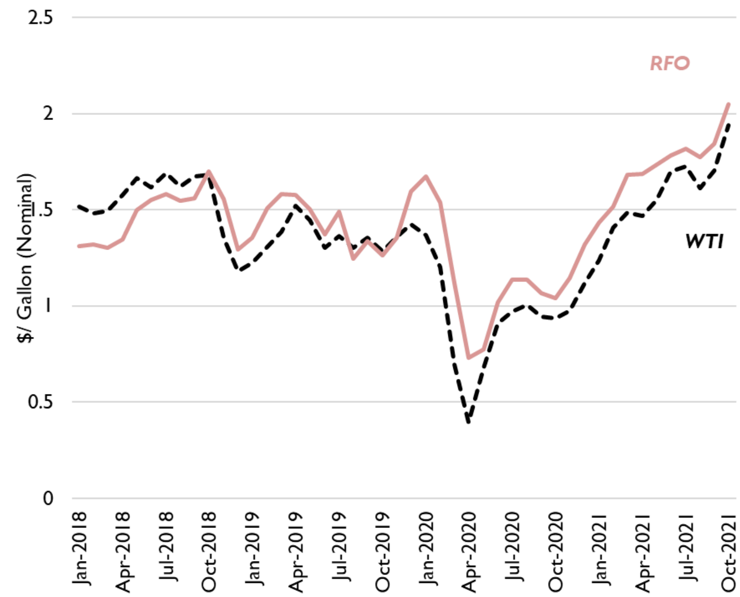
Regress historical RFO and diesel prices against historical WTI prices

Apply regression coefficient to WTI forecast to get long-term diesel and RFO prices

Apply delivery adders and other contract terms

Diesel, RFO Delivered Price

- Unlike natural gas, the crude oil must further be processed to create RFO and diesel. However, long-term projections for AEO are only available for WTI Crude Oil resulting in the need for two additional steps.
- Assuming a strong correlation between the oil derivatives and the crude oil, two regressions (RFO, WTI) and (diesel, WTI) are performed using historical data. The resulting coefficients are then used to estimate a long-term diesel and RFO prices tied to the base AEO forecast.

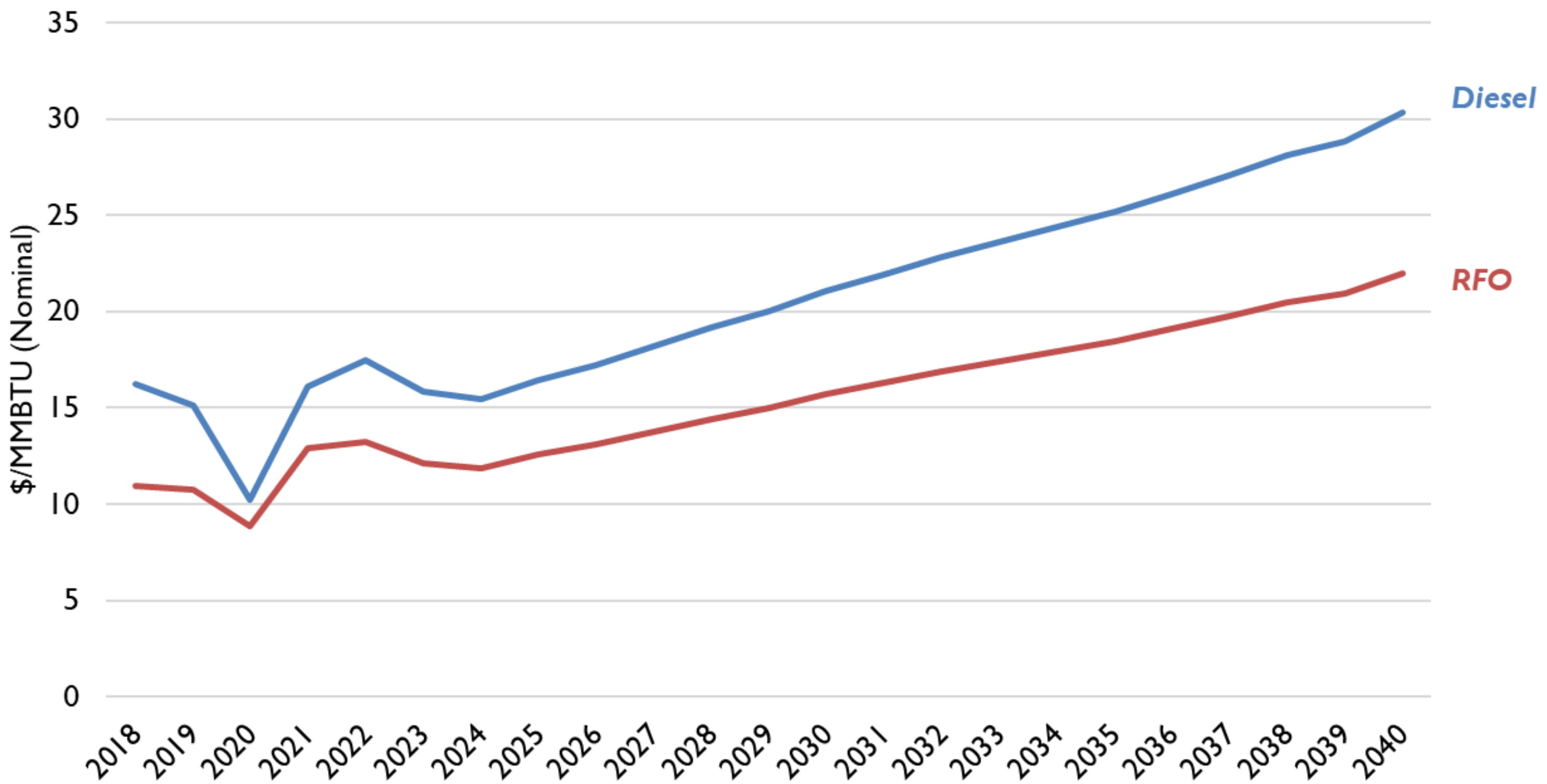


Fuel Prices: Oil

- After prices are determined for RFO and diesel, contractual pricing terms are applied to the forecast to estimate actual delivered prices.
- Existing known supplier contracts include:
  - Novum Trading Inc. to supply diesel for a period of 1 year beginning in 2022.
  - Puma Energy Caribe LLC to supply RFO for a period of 1 year.
- However, contracts for the supply of diesel and RFO have much shorter timeframes as opposed to natural gas contracts, making long-term forecasts susceptible to a high degree of uncertainty.

Fuel Prices: Oil

Synapse adopted the same approach as Siemens in modeling this uncertainty by including a fixed adder, meant to serve as a generic delivery adder for forecasting purposes.



Fuel Prices: Coal

- Synapse estimated delivered coal prices using data collected from a data request to LUMA (although the data came from PREPA). Synapse received a projection, which is considered confidential, of annual coal prices from PREPA from 2021 through the life of the AES contract.
- To translate annual values to monthly values, Synapse derived monthly modifiers using historical data on Illinois Basin coal prices from EIA, following the approach in the IRP, and applied these monthly modifiers to the annual values.
- Synapse notes that coal resources are not on the margin in the analysis, and as such will not impact the analysis.

Fuel Prices: Calibration

- After deriving fuel prices, Synapse used fuel receipts obtained from the Puerto Rico Energy Bureau to assess the relative accuracy of the forecasts in prior months.
- Comparing data from January of 2021 to May of 2021, we found that:
  - Estimated delivered natural gas prices were on average 3% less than what was reported in the fuel receipts.
  - Estimated delivered diesel and RFO prices were on average 4% greater than what was reported in the fuel receipts.

Technology Capital Costs

Units: 2020 $/kW

Year	Grid-Scale Solar (Single-Axis Tracking)	Grid-Scale Battery (2-hour)	Grid-Scale Battery (4-hour)	Grid-Scale Battery (6-hour)	Onshore Wind	CCGT (GE S107F.04)	CCGT (GE LM6000)	CCGT (GE LM2500)	CCGT (GE LM2500+)
2021	1329	787	1322	1857	1332	873	1473	1789	1598
2022	1294	754	1263	1772	1314	885	1496	1819	1624
2023	1256	719	1201	1682	1295	899	1519	1849	1650
2024	1218	683	1135	1589	1274	911	1542	1879	1677
2025	1176	644	1068	1491	1253	925	1567	1910	1704
2026	1133	637	1050	1462	1230	939	1591	1940	1730
2027	1087	630	1030	1431	1205	952	1616	1972	1757
2028	1039	622	1010	1399	1179	967	1641	2005	1786
2029	988	614	990	1365	1151	980	1666	2038	1814
2030	936	605	967	1329	1123	995	1692	2071	1843
2031	946	610	974	1337	1133	1008	1718	2105	1873
2032	956	616	980	1346	1144	1023	1745	2138	1901
2033	966	621	987	1354	1155	1037	1772	2173	1931
2034	978	626	994	1362	1166	1053	1800	2209	1962
2035	988	632	1000	1369	1178	1069	1826	2245	1993
2036	998	637	1008	1377	1187	1083	1855	2282	2025
2037	1008	642	1014	1384	1199	1099	1883	2319	2057
2038	1018	647	1020	1391	1210	1114	1912	2355	2088

Source: NREL 2021 ATB, Siemens

Renewable Portfolio Standard

- The RPS is 40% in 2025, 60% in 2040, and 100% in 2050. We extrapolated between these years to obtain the No EE RPS schedule below.

Year	RPS (%)
2025	40
2040	60
2050	100

Source: Mitigation, Adaptation and Resilience to Climate Change (Act 17-2019)

Period	RPS (MWh)	RPS (%)
2021	0	0%
2022	1,810,068	10%
2023	3,631,323	20%
2024	5,456,927	30%
2025	7,278,970	40%
2026	7,503,596	41%
2027	7,710,487	42%
2028	7,889,641	44%
2029	8,050,808	45%
2030	8,220,241	46%
2031	8,392,310	47%
2032	8,565,610	49%
2033	8,741,291	50%
2034	8,920,579	51%
2035	9,102,886	53%
2036	9,289,287	54%
2037	9,478,999	55%
2038	9,688,249	57%

Ancillary Services

- Spinning reserve requirement are the reserves required to replace the loss of the largest generator on the system.
- Actual reserve requirements will change from hour to hour depending on which units are online and their rated capacity during those hours.

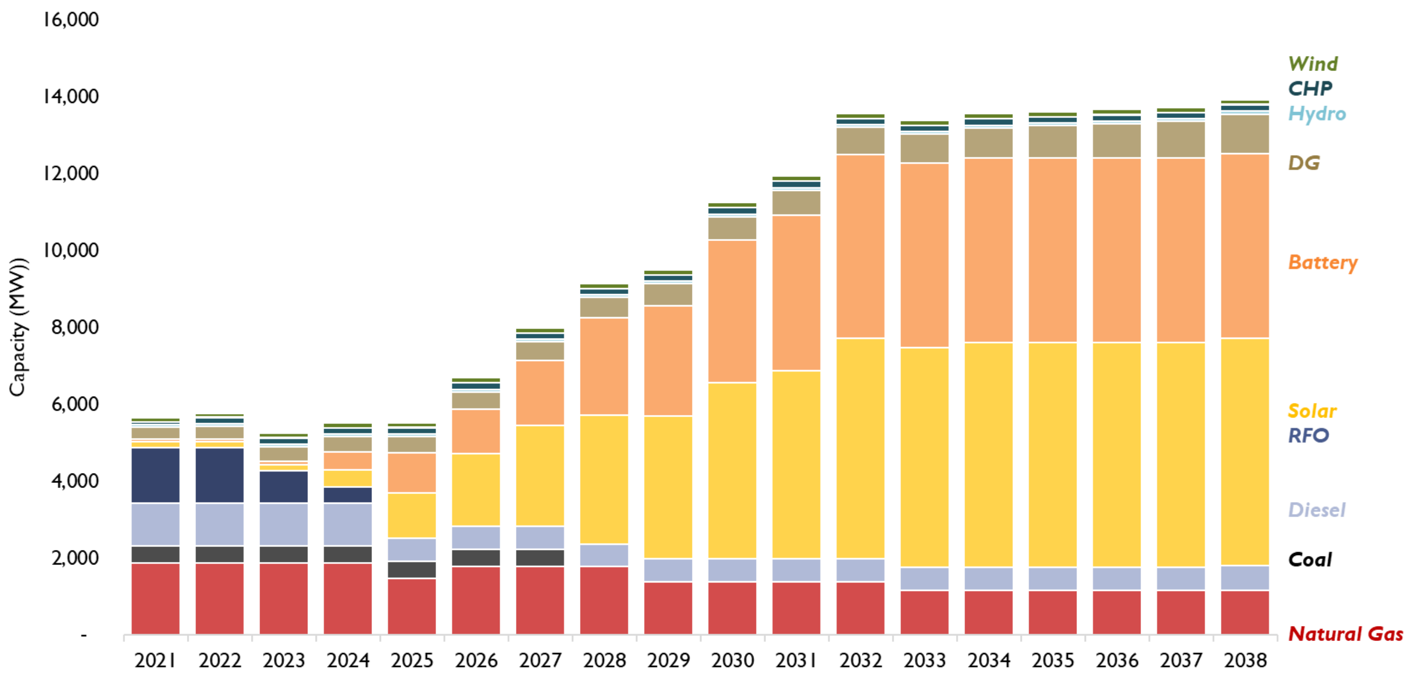
System Parameters	Value
Reserve Margin	50% until end of 2024, 30% onwards
Operating Reserves	Confidential
Spinning Reserves	Confidential
Non-Spinning Reserves	Confidential
Regulation Up/Down	60 MW until end of 2025, then 80 MW onwards

Source: LUMA, Case No. NEPR-MI-2021-0001

Results

Modeling Results: Capacity

- Coal retires by 2027 due to the required closure the AES coal plant (fixed in the model).
- Steam capacity (gas and oil) declines gradually through 2023 and 2024, then more rapidly in 2025. The model chooses to economically retire both Palo Seco Units in 2023, then San Juan 7 & 8 in 2024. In 2025, Costa Sur 5 also retires albeit as a fixed model input.
- Solar and battery builds grow rapidly beginning in 2024.



Modeling Results: No EE Capacity Comparison

- Synapse compared the resource capacity from the EnCompass model with Siemens' No EE scenario, while considering procurement delays. Synapse's modeling shows an addition of a peaker gas plant and a combined cycle plant in this counterfactual high-load case.
- However, Synapse's results show a greater battery build when calibrating solar builds to be similar to Siemens.

Resource	2021	2025	2030	2035	2038
Gas Turbine (147 MW)	147	147	147	147	147
Gas Combined Cycle (302 MW)			302	605	605
Utility Solar (30 MW)		1,020	4,380	5,640	5,640
Utility Wind (30 MW)		30	30	30	30
2HR Battery	60	80	720	720	720
4HR Battery		620	1,980	2,240	2,240
6HR Battery		340	1,020	1,840	1,840

Modeling Results: Capacity Calibration

Synapse

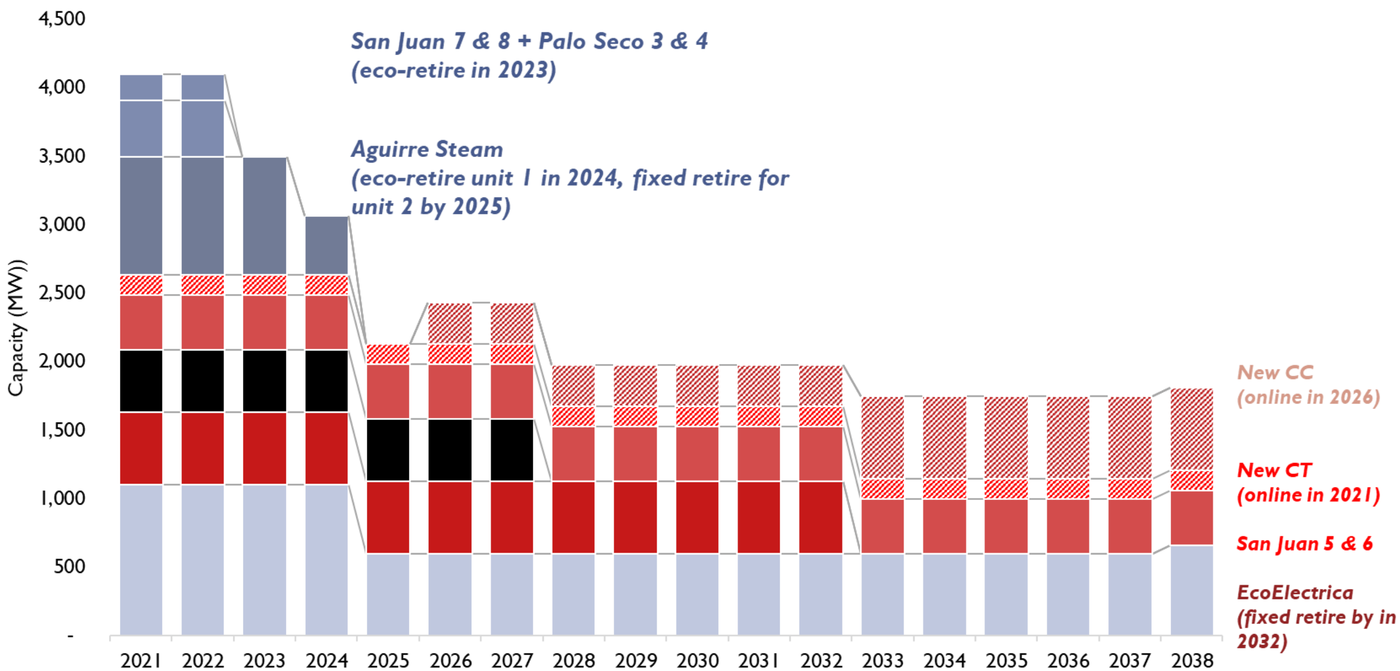
Resource	2021	2025	2030	2035	2038
Gas Turbine (147 MW)	147	147	147	147	147
Gas Combined Cycle (302 MW)			302	605	605
Utility Solar (30 MW)		1,020	4,380	5,640	5,640
Utility Wind (30 MW)		30	30	30	30
2HR Battery	60	80	720	720	720
4HR Battery		620	1,980	2,240	2,240
6HR Battery		340	1,020	1,840	1,840

Siemens No EE

Resource	2021	2025	2030	2035	2038
Peaker Gas		394	394	394	394
Gas Combined Cycle				369	369
Utility Solar	1,020	3,900	5,580	5,580	5,580
Utility Wind	90	90	90	90	90
2HR Battery (not an option)					
4HR Battery	800	1,120	1,120	1,400	1,520
6HR Battery	40	400	1,320	1,480	1,520

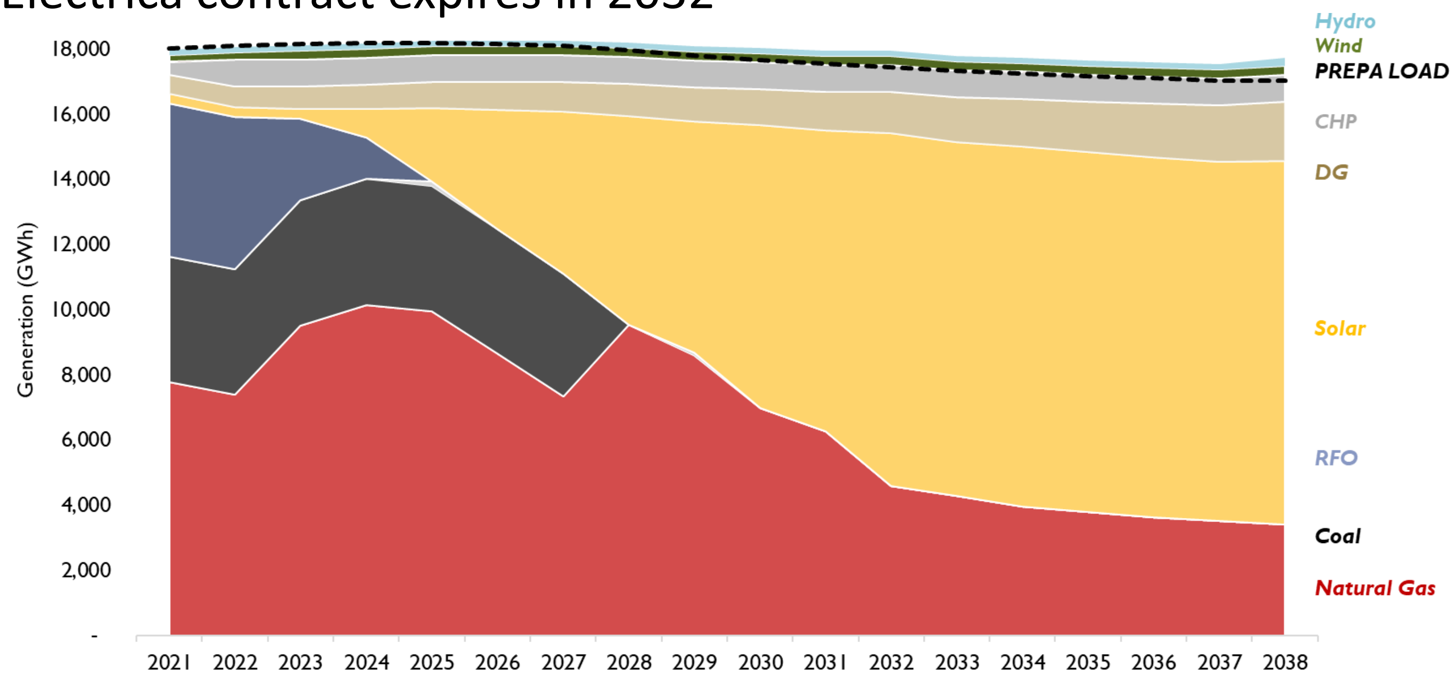
Modeling Results: Gas/Oil Capacity

- Model immediately builds one 147 MW gas-fired CT in 2021, and then one 302 MW gas-fired CC in 2026
- Model configured to retire all heavy oil units by 2025: San Juan 7 & 8, Palo Seco 3 & 4, and Aguirre Steam
- Model was allowed to retire any fossil unit if economical (excluding AES and EcoElectrica) after 2023



Modeling Results: Generation

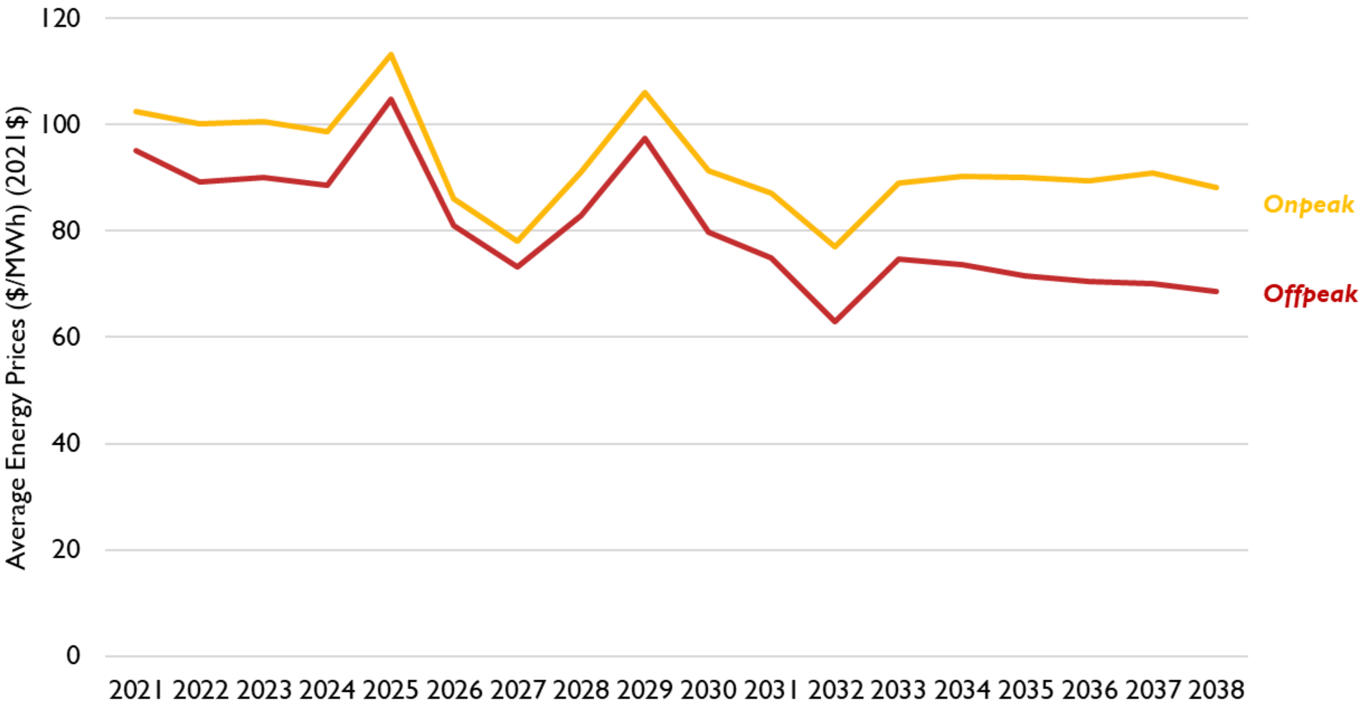
- In 2021, most load is met by natural gas fired units, coal, and RFO
- RFO generation gradually phases out by 2025, resulting in a near-term increase in natural gas generation
- Solar generation substantially increases from 2025-2033
- EcoElectrica contract expires in 2032



Note: Modeling results for the year 2021 are not supposed to provide actual representations of capacity and generation in this year.

Modeling Results: Avoided Energy Costs

- Both on-peak and off-peak energy prices are on a long-term declining trend from 2021-2032 driven by solar and battery growth.
- Spikes in prices occur due to retirements of plants i.e., RFO plants (2025), Costa Sur (2029) and EcoElectrica (2032), which put more costly thermal/peaker resources on the margins.



- On-peak period: Hours of 9:00 a.m. to 10:00 p.m. during weekdays (Monday-Friday), excluding certain holidays.
- Off-peak period: Hours of 10:00 p.m. to 9:00 a.m. during the weekdays (Monday-Friday), all weekend hours, and all hours during certain holidays.

Source: Tariff Book - Electric Service Rates and Riders, Puerto Rico Electric Power Authority.

Modeling Results: Avoided Energy Costs

Heat maps of Puerto Rico avoided energy costs can be used to identify the month/hour combinations associated with high/low energy costs for purposes of determining peak/off-peak hours and TOU rates.

2025 Load Weighted Price (2020 $/MWh)

	Hour Ending																							
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
January	88	88	88	87	87	87	87	82	79	79	79	79	79	79	80	82	88	88	88	88	88	88	88	88
February	92	82	82	82	82	82	82	76	73	73	73	73	73	74	74	78	83	83	83	83	83	83	83	83
March	90	90	89	89	89	90	86	75	75	75	75	75	75	75	75	83	90	90	90	90	90	90	90	90
April	107	98	98	98	98	98	85	80	80	80	80	80	80	80	82	94	97	97	97	97	97	97	97	106
May	111	111	111	110	110	111	99	96	96	96	96	96	97	96	98	109	110	110	110	110	110	110	110	110
June	120	120	120	119	120	119	104	100	101	101	100	100	100	101	101	117	120	120	120	120	120	120	120	120
July	117	117	117	117	117	117	101	96	96	96	96	96	96	96	97	113	116	116	116	116	116	116	116	116
August	120	119	119	119	119	119	111	94	94	94	94	94	94	94	94	112	119	119	119	119	119	119	119	119
September	121	121	120	120	120	120	114	98	98	98	98	98	98	98	99	115	121	122	122	122	122	122	122	122
October	119	119	119	119	119	119	116	101	101	101	101	100	101	101	101	111	119	119	119	119	119	119	119	119
November	125	125	125	124	124	125	122	108	108	107	107	107	107	107	107	108	125	125	125	125	125	125	125	125
December	116	116	116	115	115	116	114	103	102	102	102	102	102	102	102	102	116	116	116	116	116	116	116	116

Modeling Results: Avoided Energy Costs

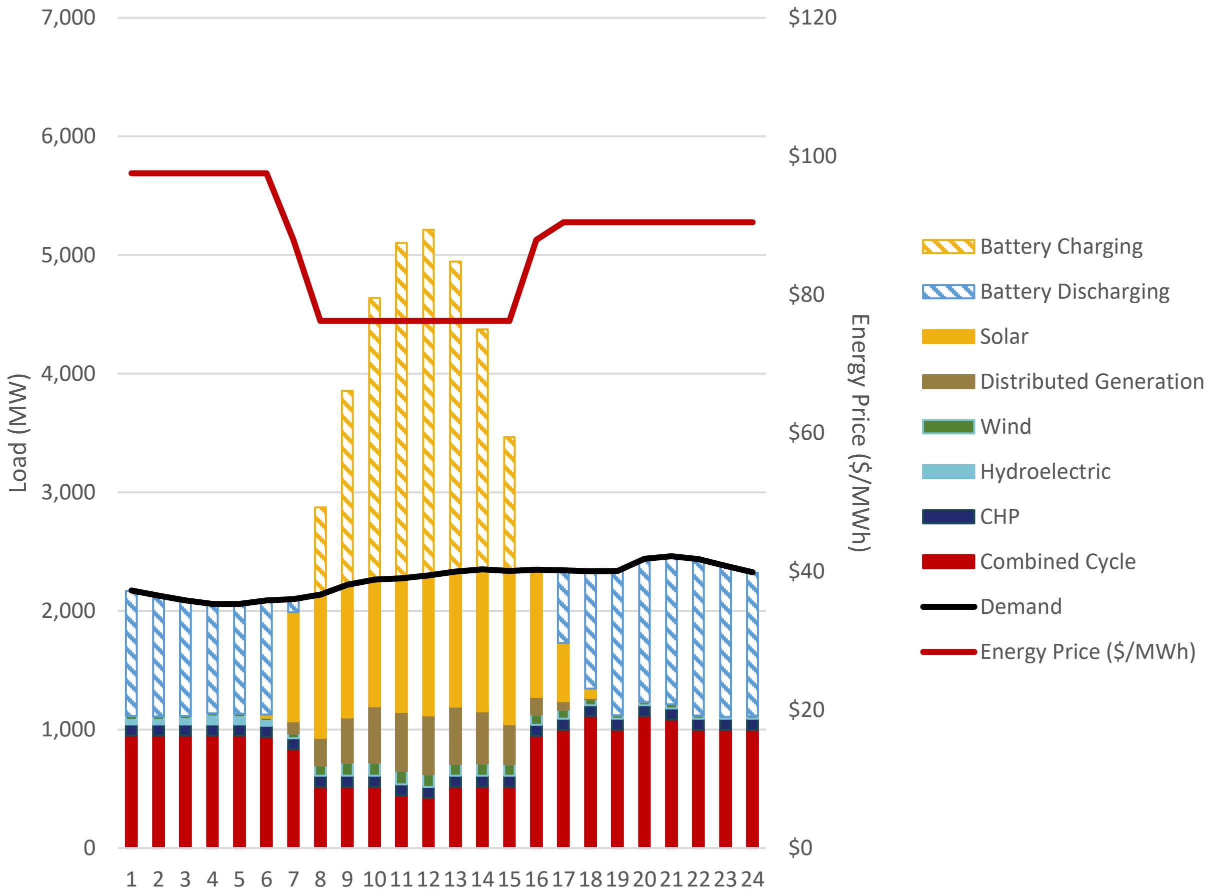
By 2038, the avoided energy costs drop substantially

2038 Load Weighted Price (2020 $/MWh)

	Hour Ending																							
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
January	66	66	66	66	66	66	66	56	55	55	55	55	55	55	55	55	65	65	65	65	65	65	65	65
February	61	61	61	61	61	61	61	42	39	39	39	39	39	39	39	40	61	61	61	61	61	61	61	61
March	61	61	61	61	61	61	60	25	25	25	25	25	25	25	25	41	61	61	61	61	61	61	61	61
April	64	64	64	64	64	64	63	34	35	34	34	34	34	34	35	61	64	64	64	64	64	64	64	64
May	95	88	88	88	88	88	70	60	60	60	60	60	60	60	61	73	74	74	74	74	74	74	74	74
June	94	94	94	94	94	94	82	73	71	71	71	71	71	71	71	79	87	87	87	87	87	87	87	87
July	69	69	69	69	69	69	60	56	55	55	55	55	55	55	55	62	63	63	63	63	63	63	63	63
August	84	84	84	84	84	84	75	58	57	58	58	58	58	58	57	67	76	76	76	76	76	76	76	76
September	80	80	80	80	80	80	78	60	60	60	60	60	60	60	60	68	73	73	73	73	73	73	73	73
October	71	71	71	71	71	71	71	63	62	62	62	62	62	62	62	66	72	72	72	72	72	72	72	72
November	79	79	79	79	79	79	79	69	68	68	68	68	68	68	68	68	77	77	77	77	77	77	77	77
December	72	72	72	72	72	72	72	66	64	64	64	64	64	64	64	64	72	72	72	72	72	72	72	72

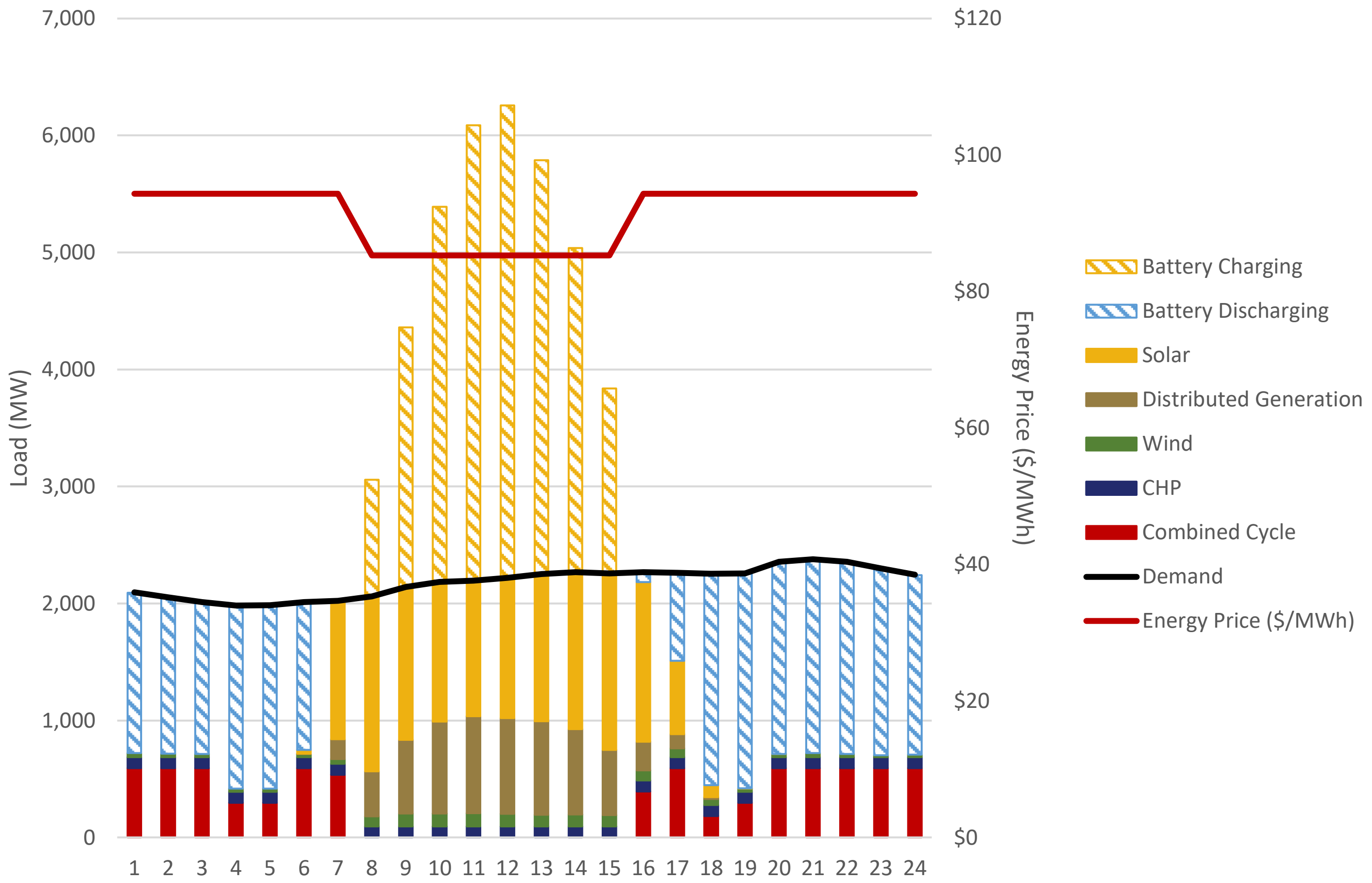
Modeling Results: Peak Day in 2030

- Solar PV dispatch ramps up during midday, charging the batteries, and causing the energy prices to decrease.
- Batteries discharge during the early morning and evening hours when solar is unavailable.



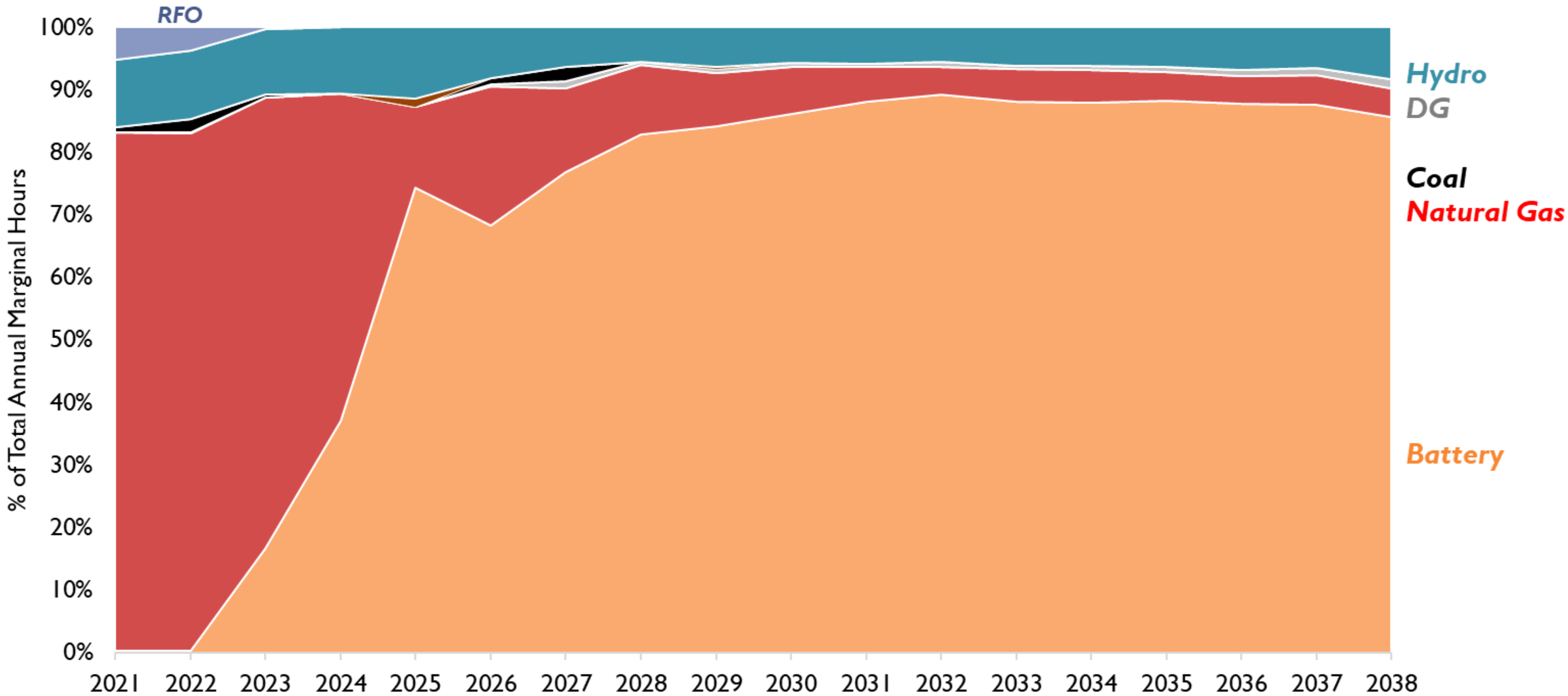
Modeling Results: Peak Day in 2038

Batteries contribute more to load in 2038 than in 2030



Modeling Results: Marginal Hours

- Battery storage is primarily on the margin. For marginal energy price calculation, the model knows the cost of the power that was used to charge the battery, and accounts for losses.



Marginal hours: number of hours that a resource will be used to generate the next additional kW of power that is required. Some factors that determine whether a resource is on the margin are unit heat rates, fixed and variable O&M costs, technical constraints, and environmental regulations.

Discussion Questions

Discussion Questions

1. Are the fuel cost projections reasonable? Are there better data available to inform the projections?
2. How should the study reflect uncertainty regarding the (counterfactual) resource mix and procurement schedule?
3. What is the best approach for calculating avoided costs beyond 2038 (e.g., extrapolating model results)?

Next Steps

Next Steps

- Stakeholders may provide written comments and questions by 2/22
- Updated avoided energy cost results will be available for public review by 3/15
  - Updated results to consider comments received today and in writing
  - Results will include an updated presentation, Excel workbook featuring avoided cost tables, and a written response to comments and questions

Next Steps

- PREB may schedule a technical conference to discuss avoided capacity and greenhouse gas emissions methods and results
- A report covering avoided energy, capacity, and GHG results will be available in April
- Initial use of these three key inputs will be to evaluate the cost-effectiveness of scenarios associated with the EE potential study this summer
- After this summer, other costs and benefits may be developed for inclusion in the Puerto Rico Test in the future (stay tuned for updates)