

Cell Color Scheme

Yellow cells are inputs that can be changed by the user (only in the Dashboard and Custom Profiles tabs)
Orange cells contain drop down menus that allow the user to input custom values
Grey cells are intermediate calculations or results (should NOT be changed)
Green cells are final outputs

Tab Color Scheme

Light Orange tabs are where the user can input values
Blue tab contains LSE-specific data
Gray tab documents data sources
Yellow tabs are read-only tabs

INPUTS

Notes:

Input values (yellow cells) shown here are placeholders. Users should replace all inputs with values specific to their system.

Inputs and results are included for the 2018, 2022, 2026, and 2030 modeling years. Any intermediate years should be interpolated outside of this tool.

General Inputs

Metric	Unit	2018	2022	2026	2030
Owned or contracted non-dispatchable GHG-emitting resources	MW	-	-	-	-
Emission Factor - Owned or contracted non-dispatchable GHG-emitting resources	tCO2/MWh	0.35	0.35	0.35	0.35
Fraction of EV owners that can charge at work	%	6%	14%	22%	30%

Demand Inputs

Assigned Load Forecast for IRP (i.e., Managed Retail Sales Forecast)	GWh	2,370	3,452	3,389	3,331
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Default Demand Inputs (based on sales-weighted share of total from IEPR)	Units	2018	2022	2026	2030
Baseline net energy for load (no BTM PV, EV, electrification, energy efficiency)	GWh	2,713	4,182	4,340	4,477
Electric Vehicle Load - Home Charging Only	GWh	19	70	111	140
Electric Vehicle Load - Home + Work Charging	GWh	1	11	31	60
Other Electrification	GWh	1	5	9	11
Building Electrification	GWh	-	-	-	-
Energy Efficiency	GWh	(26)	(187)	(352)	(500)
BTM PV	GWh	(150)	(357)	(484)	(597)

Custom Demand Inputs (OPTIONAL; overwrites Assigned Load Forecast for IRP)	Use Custom?	Units	2018	2022	2026	2030
Baseline net energy for load (no BTM PV, EV, electrification, energy efficiency)	No	GWh				
Electric Vehicle Load - Home Charging Only	No	GWh				
Electric Vehicle Load - Home + Work Charging	No	GWh				
Other Electrification	No	GWh				
Building Electrification	No	GWh				
Energy Efficiency	No	GWh				
BTM PV	No	GWh				

Active Demand Inputs	Source	Units	2018	2022	2026	2030
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Baseline net energy for load (no BTM PV, EV, electrification, energy efficiency)	IEPR	GWh	2,713	4,182	4,340	4,477
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Electric Vehicle Load - Home + Work Charging	IEPR	GWh	1	11	31	60
Other Electrification	IEPR	GWh	1	5	9	11
Building Electrification	IEPR	GWh	-	-	-	-
Energy Efficiency	IEPR	GWh	(26)	(187)	(352)	(500)
BTM PV	IEPR	GWh	(150)	(357)	(484)	(597)

Capacity Inputs (MW)

Candidate Resource	Type	2018	2022	2026	2030
Battery Storage	Storage	-	83	98	98
Pumped Storage	Storage	-	-	-	-
Large Hydro	Large Hydro	626	541	625	607
Nuclear	Nuclear	-	-	-	-
CAISO_Wind_for_CAISO	Wind	139	-	-	-
SW_Wind_for_CAISO	Wind	-	-	-	-
Contracted_NW_Wind	Wind	-	-	-	-
Northern_California_Wind	Wind	-	-	-	-
Solano_Wind	Wind	-	-	-	-
Central_Valley_North_Los_Banos_Wind	Wind	-	-	-	-
Greater_Carrizo_Wind	Wind	-	-	-	-
Tehachapi_Wind	Wind	-	-	-	-
Kramer_Inyokern_Wind	Wind	-	-	-	-
Southern_California_Desert_Wind	Wind	-	-	-	-
Riverside_East_Palm_Springs_Wind	Wind	-	-	-	-
Greater_Imperial_Wind	Wind	-	-	-	-
Distributed_Wind	Wind	-	-	-	-
Baja_California_Wind	Wind	-	-	-	-
Pacific_Northwest_Wind	Wind	-	-	-	-
NW_Ext_Tx_Wind	Wind	-	-	-	-
Idaho_Wind	Wind	-	-	-	-
Utah_Wind	Wind	-	-	-	-
Wyoming_Wind	Wind	-	-	-	-
Southern_Nevada_Northwest_Arizona_Wind	Wind	-	-	-	-
Arizona_Wind	Wind	-	-	-	-
New_Mexico_Wind	Wind	-	203	246	246
SW_Ext_Tx_Wind	Wind	-	-	-	-
BTM_Distributed_PV	Solar	74	177	240	296
CAISO_Solar_for_CAISO	Solar	133	-	-	-
SW_Solar_for_CAISO	Solar	-	-	-	-

IID_Solar_for_CAISO	<i>Solar</i>	-	-	-	-
Northern_California_Solar	<i>Solar</i>	-	-	-	-
Solano_Solar	<i>Solar</i>	-	-	-	-
Central_Valley_North_Los_Banos_Solar	<i>Solar</i>	-	-	-	-
Westlands_Solar	<i>Solar</i>	-	209	257	257
Greater_Carrizo_Solar	<i>Solar</i>	-	-	-	-
Tehachapi_Solar	<i>Solar</i>	-	55	55	55
Kramer_Inyokern_Solar	<i>Solar</i>	-	-	-	-
Mountain_Pass_El_Dorado_Solar	<i>Solar</i>	-	-	-	-
Southern_California_Desert_Solar	<i>Solar</i>	-	-	-	-
Riverside_East_Palm_Springs_Solar	<i>Solar</i>	-	-	-	-
Greater_Imperial_Solar	<i>Solar</i>	-	-	-	-
Baja_California_Solar	<i>Solar</i>	-	-	-	-
Utah_Solar	<i>Solar</i>	-	-	-	-
Southern_Nevada_Solar	<i>Solar</i>	-	-	-	-
Arizona_Solar	<i>Solar</i>	-	-	-	-
New_Mexico_Solar	<i>Solar</i>	-	-	-	-
Geothermal	<i>Geothermal</i>	-	-	-	-
Biomass	<i>Biomass</i>	-	-	-	-
Small Hydro	<i>Small Hydro</i>	-	-	-	-

e user inputs values and views results
 data from the 2017 IEPR that the user should input into the "IEPR Managed Retail Sales Forecast" cells on the Dashboard
 ces
 that contain inputs and calculations

RESULTS

Notes
<i>Perfect capacity - 100% CF; e.g. cogeneration</i>
<i>For multiple resources, input weighted average</i>
<i>Values shown are "Mid" from CPUC IRP RESOLVE User Interface</i>

Includes effect of BTM PV, AEE, etc.

Notes
<i>Grossed up for T&D losses; demand met by BTM CHP excluded</i>
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Notes
<i>To overwrite, set "Use Custom" to "Yes" and input forecast. Custom demand values should be grossed up for T&D losses.</i>
<i>User-specified load profiles should be input in the "Custom Profiles" tab.</i>
<i>Energy efficiency and BTM PV subtract from demand and therefore should be entered as negative values.</i>

Notes

Energy Balance	Unit	2018	2022	2026
Energy for Load (excluding BTM PV)	GWh	2,708	4,081	4,139
Owned or contracted non-dispatchable GHG-emitting resources	GWh	-	-	-
Large Hydro	GWh	1,659	1,434	1,657
Nuclear	GWh	-	-	-
Renewable Generation (including BTM PV)	GWh	848	1,817	2,227
User-specified GHG-free Power	GWh	-	-	-
Storage Energy Imbalance	GWh	-	(30)	(36)
Clean Net Short	GWh	200	860	291

Emissions	Unit	2018	2022	2026
Clean Net Short	MMtCO2/yr.	0.1	0.3	0.2
Owned or contracted non-dispatchable GHG-emitting resources	MMtCO2/yr.	-	-	-
Emissions offset for NW hydroelectric imports	MMtCO2/yr.	(0.0)	(0.0)	(0.0)
Total	MMtCO2/yr.	0.0	0.3	0.1
Average emission intensity	tCO2/MWh	0.02	0.07	0.03

Oversupply	Unit	2018	2022	2026
Oversupply	GWh	172	116	357
Oversupply Emission Credits	MMtCO2/yr.	0.1	0.0	0.1

Capacity/Peak	Unit	2018	2022	2026
Profile Peak Load	MW	547	827	841
Owned or contracted non-dispatchable GHG-emitting resources	MW	-	-	-
Large Hydro	MW	626	541	625

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Nuclear	MW	-	-	-
Total Baseload Renewables	MW	-	-	-
Total Variable Renewables	MW	346	644	798
User-specified GHG-free Power	MW	-	-	-
Energy Storage	MW	-	83	98
Maximum Clean Net Short	MW	230	513	510

Notes
<i>Assumes 4-hr battery storage duration</i>
<i>Assumes at least 12-hr pumped storage duration</i>
<i>Assumes average dispatch based on RESOLVE</i>
<i>Perfect capacity - 100% CF</i>
<i>Existing wind located in CAISO</i>
<i>Existing wind located in SW and delivered to CAISO</i>
<i>Existing wind located in NW and delivered to CAISO</i>
<i>Derived from demand inputs, grossed up for T&D losses. DO NOT EDIT</i>
<i>Existing solar located in CAISO</i>
<i>Existing solar located in SW and delivered to CAISO</i>

Existing solar located in IID and delivered to CAISO

perfect capacity - 100% CF
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2030	Notes
4,188	
-	
1,609	
-	
2,340	<i>Includes oversupply</i>
-	
(39)	<i>Due to storage losses and subhourly reserves.</i>
278	

2030	Notes
0.2	<i>Includes oversupply emissions credits</i>
-	
(0.0)	<i>Scaled to LSE load ratio share within CAISO</i>
0.1513	
0.04	

2030	Notes
399	<i>Occurs when hourly supply exceeds hourly load</i>
0.0	

2030	Notes
855	<i>Peak of hourly load profile - not a 1:10 peak</i>
-	
607	

-	
-	
854	<i>Includes BTM PV</i>
-	
98	
500	