Fact Sheet:
Decision Transferring Electric Resource Portfolios to California Independent System Operator (CAISO) For 2021-2022 Transmission Planning Process

Overview of Decision (D.) 21-02-008

On February, 11, 2021, the CPUC adopted its *Decision Transferring Electric Resource Portfolios to California Independent System Operator For 2021-2022 Transmission Planning Process*:

- This decision integrates planning for electricity generation and transmission needs and ensures that infrastructure development helps achieve state greenhouse gas (GHG) reduction goals.
- The decision includes a base case electric resource portfolio for CAISO to plan transmission system upgrades and additions to accommodate approximately 28,000 MW of new clean energy resources, in alignment with the target of reducing GHG emissions from the electricity sector to 46 million metric tons (MMT) per year. This target is consistent with a reduction of economy-wide GHG emissions to 40 percent below 1990 levels by 2030.
- The recommended portfolio includes large amounts of solar and wind generation in California, and additional diverse resources, such as geothermal, pumped hydroelectric storage and out-of-state wind.
- The recommended portfolio includes most of the resources needed to reach a lower GHG emissions target of 38 MMT, which the CPUC will be considering later in the year.
- The amount of new generation capacity included in this portfolio far exceeds the amount in CAISO's current transmission plan. The portfolio also includes 9,000 MW of battery storage capacity mapped to specific locations on the electric grid, in an effort to minimize local air pollutants in Disadvantaged Communities and air quality non-attainment areas.
- This decision also includes two "sensitivity" portfolios: one that allows CAISO to study the transmission needs for a lower GHG emissions target of 38 MMT, and another for obtaining transmission information in areas with significant offshore wind resource potential.

Background on the CPUC Transfer of Integrated Resource Plan (IRP) Resource Portfolios to CAISO's Transmission Planning Process (TPP)

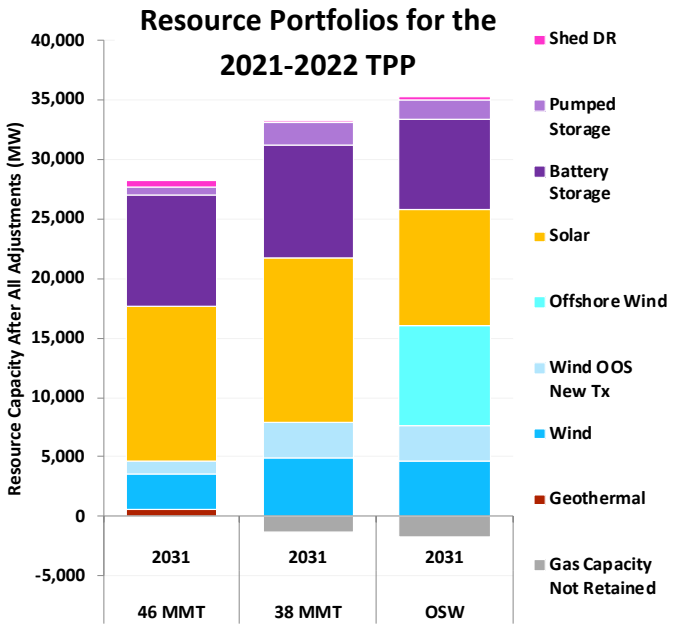
- **Annual Process for TPP portfolio development:** The CPUC's annual process for TPP portfolio development ensures that electricity resources identified within the IRP inform CAISO's transmission system planning and facilitate the build out of a transmission grid ready to accommodate the generation required to meet state goals. A 2010 MOU between the CAISO and the CPUC governs this process in coordination with the California Energy Commission (CEC). Other energy sector modeling inputs and assumptions transferred to CAISO include location of demand response resources as well as assumptions for existing thermal generation.
- **Relationship to IRP Planning**: As part of its ongoing activities within each IRP cycle, CPUC adopts a GHG emission planning target for the electric sector and identifies a portfolio with the optimal mix of electricity resources expected to be needed to meet state policy goals. In March 2020, the CPUC adopted a 46 MMT statewide GHG target and a corresponding electric sector resource portfolio. (See Decision, D.20-03-028, or associated Fact Sheet). The annual process for TPP portfolio development updates the IRP portfolios with current information but does not focus on reevaluating the GHG target for which LSE's are currently planning.
- **Additional Process for this year's TPP portfolio development:** A CPUC-led stakeholder process to allow insight into TPP portfolio development commenced in October 2020. Given the magnitude of the new resources expected to be developed in the next decade, the CPUC process was unprecedented in scope and potential infrastructure impact. Importantly, this decision is the first time that the CPUC has fully adopted TPP portfolios prior to the commencement of the upcoming TPP. The CAISO's TPP is a 15-month

process that begins in January and concludes in March of the following year. The information transferred to the CAISO in February 2021 will inform CAISO infrastructure investment decisions in March 2022.

Details of D.21-02-008

- **46 MMT Reliability and Policy-driven Base Case Portfolio:** This portfolio will allow CAISO to identify and authorize transmission development needed to accommodate new resource capacity expected to be built to meet the 46 MMT GHG target established in D.20-03-028 but with minor updates to include more updated information. This portfolio includes about 18,000 MW of new renewable generation, including 650 MW of new geothermal. The portfolio also contains over 9,000 MW of new battery storage, over 600 MW of new long-duration storage, and over 600 MW of new demand response.
- **38 MMT Policy-driven Sensitivity Portfolio:** This portfolio will allow CAISO to study (but not necessarily authorize) transmission development needed to accommodate a resource planning future that closely reflects the most recent 38 MMT portfolio included as planning guidance for LSEs in D.20-03-028 but again with minor updates. This portfolio includes nearly 22,000 MW of new renewable generation, including 3,000 MW of out of state wind. It also contains over 9,000 MW of new battery storage and 1,800 MW of new long-duration storage. Additionally, the portfolio aligns with the potential transmission upgrades identified in the 46 MMT portfolio, with one additional transmission upgrade likely needed to accommodate out-of-state wind resources. Having CAISO study this sensitivity will allow the CPUC to better understand the transmission infrastructure needed under a lower GHG planning target.
- **Offshore Wind Sensitivity Portfolio:** The offshore wind sensitivity portfolio will allow CAISO to study transmission infrastructure needs, and associated costs, that would be triggered to connect over 8,000 MW of offshore wind generation at various potential locations — information currently lacking. This information could then be used as an input for future IRP analysis and decision-making related to offshore wind resources, including examining tradeoffs between different locations.

The cumulative buildout of new resources in the portfolios is shown below:



		2031		
Resource Category	***Unit***	**46 MMT**	**38 MMT**	**OSW**
Gas	*MW*	-	-	-
Biomass	*MW*	-	-	-
Geothermal	*MW*	651	-	-
Hydro (Small)	*MW*	-	-	-
Wind	*MW*	2,943	4,955	4,689
Wind OOS New Tx	*MW*	1,062	3,000	3,000
Offshore Wind	*MW*	-	-	8,351
Solar	*MW*	13,043	13,816	9,807
Customer Solar	*MW*	-	-	-
Battery Storage	*MW*	9,368	9,447	7,604
Pumped Storage	*MW*	627	1,843	1,613
Shed DR	*MW*	608	222	222
Gas Capacity Not Retained	*MW*	-	(1,319)	(1,718)
In-State Renewables	*MW*	**16,638**	**18,876**	**22,847**
Out-Of-State Renewables	*MW*	**1,062**	**3,000**	**3,000**

CPUC IRP Website: https://www.cpuc.ca.gov/irp/
CPUC Decision: https://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=366426300
All relevant materials can be found here: https://www.cpuc.ca.gov/General.aspx?id=6442466555