California ISO

News Release

For immediate release | **March 11, 2020**

Media Hotline | 888.516.6397

For more information, contact:
Anne Gonzales | agonzales@caiso.com
Vonette Fontaine | vfontaine@caiso.com

ISO tests prove wind can play major role in renewable integration

Study results show wind farms' ability to supply essential grid services

FOLSOM, Calif. – In its continued drive to modernize and clean the electric grid, the California Independent System Operator (ISO) published a report proving that wind power plants can open another door for substantial amounts of renewables to be added to its resource mix while enhancing system reliability.

The ISO, in partnership with Avangrid Renewables, the National Renewable Energy Laboratory (NREL), and General Electric, conducted tests on the energy company's Tule Wind Farm, located in eastern San Diego County, to demonstrate that large, utility-scale wind plants can provide important services to the grid that currently are being supplied by conventional thermal generators.

The results affirm that wind could be a key player in integrating the high amounts of renewable energy needed to meet California's ambitious carbon reduction targets, and to accelerate the international movement toward reliable low-carbon electric grids.

The evidence, published in a California ISO report today, can be used to shape future policy to unlock the capability of wind power to stabilize electric grids and create economic opportunities for wind generators.

"This means wind can be another way to inject stability into the grid from renewable sources, and to create commercial paths for incorporating rising amounts onto the grid," said Clyde Loutan, renewable energy adviser and ISO's team lead on the testing. "It's critical to prove that renewable resources can offer diverse services to electrical grids, so power plants and markets can be designed to encourage and incentivize these services, allowing more clean resources to be embraced into the system."

The study will have global implications for all grids working to decarbonize and shift to higher amounts of renewable resources. The results could also lead to further testing of visionary advances such as pairing wind and storage to develop resources that not only offer generation and reliability services, but electricity that can be used on demand and dispatched at the request of power grid operators, according to market needs. Currently, wind and photovoltaic solar sources cannot be controlled by operators.

Over several days in 2019, the team conducted various tests at Avangrid Renewables' Tule Wind Farm, a 131.1-megawatt (MW) plant in the McCain Valley east of San Diego.

Test results showed that a commercial wind plant with a smart inverter-based controller can provide regulation up and down, voltage regulation control, active power control, and frequency response, all important services to maintain grid services. These services are currently being provided by conventional sources, including natural gas plants.

The Tule Wind Farm is part of more than 7,000 MW of total wind power capacity in the ISO portfolio. With some relatively simple operational upgrades and market redesigns, virtually all wind plants could provide the ancillary services and be compensated for them, creating new markets for renewable resources separate from energy.

The wind plant study results echo similar tests conducted in 2018 showing that solar power plants could offer essential reliability services using a smart inverter controller.

View the 2018 solar plant report on caiso.com.

###

California ISO Media Hotline | 888.516.6397

250 Outcropping Way | Folsom, California 95630 | www.caiso.com