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New Study Supports ERCOT's Extra High-Voltage Plan for Texas Grid

AUSTIN — A new study shows that building more powerful electricity lines — called extra high-voltage energy transmission lines (EVH) — could significantly boost the Texas power grid's ability to deliver electricity. This would mean more dependable power and lower energy costs for all Texans.

The study, conducted by Siemens PTI and commissioned by the Texas Energy Buyers Alliance (TEBA) and Google, found that higher capacity 765-kilovolt (kV) electricity systems would significantly outperform the standard 345-kV lines currently in use.

To keep up with growing demand for electricity, the Electric Reliability Council of Texas (ERCOT) has proposed building a new 765-kV system as an alternative to the continued development of the existing 345-kV network. The proposed higher-capacity system costs approximately four percent more to build than the lower-capacity system — an estimated $33.9 billion vs. $32.55 billion.

However, Siemens PTI's analysis shows that by 2034, a 765kV system would more than pay for itself and bring greater value to the ERCOT system and Texas ratepayers.

The 765-kV transmission option delivers up to five times greater benefits per dollar spent compared to the 345-kV alternative and substantially increases reliability. It also saves Texas buyers each year on their energy bills by reducing production and delivery costs. The study also notes that the 765-kV design improved West-to-East transmission transfer capability by more than 1 gigawatt (GW) — significantly enhancing operational flexibility.

"Texas is a leader in every kind of energy generation, but that power has to get to the consumers who need it," said Bryn Baker, Senior Director of Policy for TEBA. "This study is further validation that by investing in extra high-voltage transmission lines, Texas can build a more robust grid to serve energy-intensive industries that will drive

the 21st century economy — enabling job growth, investment, and greater energy and economic leadership in Texas."

The study projects the energy demand on the ERCOT grid could grow from less than 90 GW of peak load today to 109–144 GW by 2034, due to the increasing load of manufacturers, data centers, oil and gas industry electrification, and population growth. Google and TEBA commissioned this study to identify the most cost-efficient mechanisms for delivering power from regions where new power plants are coming online to support fast-growing population centers where demand is booming.

"ERCOT's transmission system is at capacity, and the state's rapid economic growth is outpacing its ability to build new infrastructure," said Chris Matos, Energy Market Lead, Google. "These proposed extra high-voltage lines recognize the need to not only meet current load, but serve the future needs of the Texas economy."

In April, the Public Utility Commission of Texas approved the first phase of these high-capacity lines for the Permian Basin. This decision sets a strong precedent for Texas to continue using these powerful EVH transmission lines for future grid upgrades.

For more information, please contact:
Steve Scheibal, Texas Energy Buyers Alliance: 512-762-8808, steve@newwestcomms.com