

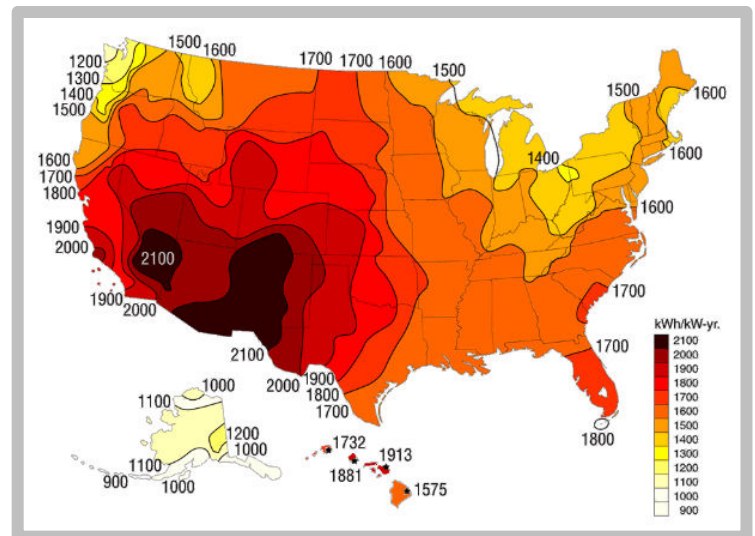
Solar Works in Texas

Solar is a natural resource to meet Texas's resource adequacy needs

Overview

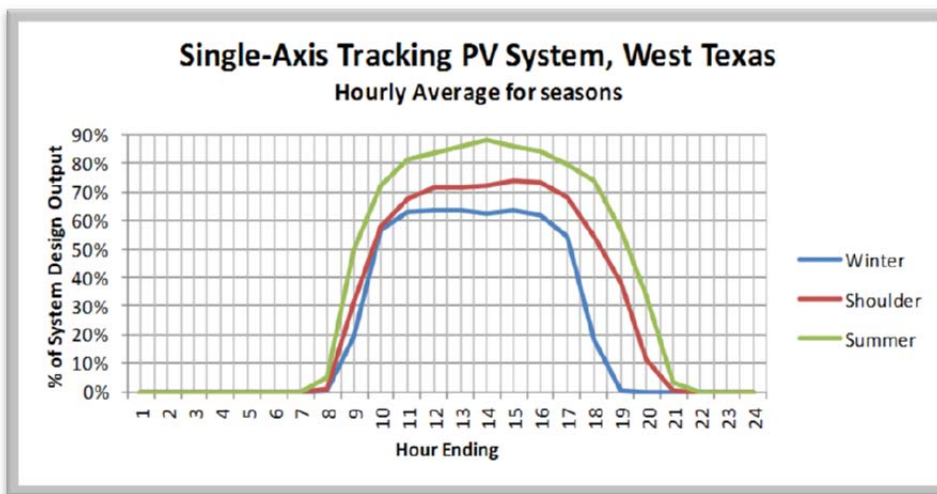
As the Texas economy continues to grow, electricity consumption has correspondingly increased. Environmental regulations and various market pressures have forced a significant amount of generation to exit the market in recent years while older generation sources continue to be retired. At the same time, Texas's electric demand has risen, with new peak demand records driven by the combination of strong, economic growth and hot summer months. As a result, since 2010, the state's reserve margin has declined precipitously. Thus, new generation capacity is required to meet the Texas market's demand. Texas's potential for solar combined with solar energy's characteristics make it a natural resource for Texas's current and long-term planning efforts.

In fact, Texas has the highest potential for solar in the nation, accounting for roughly 14% (38,993 TWh) of the entire estimated U.S. technical potential for utility-scale PV and 20% (22,786 TWh) for utility-scale concentrating solar power.ⁱ As a generating resource, solar has a high effective peak capacity value, is quick to market, can be located in a geographically targeted manner, is highly modular and scalable, uses little to no water, has minimal operating and maintenance costs, and has no fuel costs, thereby mitigating exposure to commodity price risks.



Solar energy production coincides with peak demand

Solar energy's peak production is closely aligned with ERCOT's summer system demand. Because of this, solar has a high coincident peak factor and an effective capacity value of 33%.ⁱⁱ Concentrating solar plants with thermal energy storage have capacity values in the range of 90% to 95%, similar to conventional thermal generating plants.ⁱⁱⁱ This coincidence helps reduce the need to run older, expensive peaking units, reduces the risk of emergency events during high demand periods and reduces the need to drop industrial load.





Solar energy is highly scalable and quick to market

Solar energy is unique in that it can be installed at the same rate as load growth, which, when combined with solar's quick development timeline, means solar can go online and meet load faster than any other resource. Unlike almost all other generation resources, solar is scalable and can be effectively deployed at both a residential, commercial and utility scale, which allows solar to provide ancillary services at both transmission and distribution service levels. Due to the modular nature of solar installations, as long as the space exists to expand, solar plants can continue to grow in concert with load growth, rather than having to wait for the sporadic deployment nature of central-station, conventional power plants.

Solar energy can be sited in a targeted geographic region

Solar PV allows for very targeted generation deployment, even down to a precise locations on an identified feeder. Conventional power plants do not have the capability to be installed in such a refined, geo-targeted way.

Solar energy can help maximize the return on investment in the CREZs

In the PUCT-created Competitive Renewable Energy Zones ("CREZs"), solar power plants could be sited especially fast given the transmission resources already in place or under construction and Texas's expeditious siting process. New solar generation in West Texas would contribute to near term resource adequacy needs improving utilization of transmission resources, and provide for a quicker return on investment on the already dedicated construction costs of building transmission in the CREZs.

Solar energy requires little to no water to operate

In general, all solar power technologies use little to no water. In fact, photovoltaic solar plants use no water to generate power since sunlight is converted directly to electricity; water use is limited to semi-annual panel cleaning for some plants.

Solar energy serves as a hedge against volatile conventional fuel costs

Finally, solar energy has minimal operations and maintenance costs, and no fuel costs, which eliminates the risks inherent in commodity prices. For instance, the Austin Energy Study quantified the value of PV as a hedge against volatile fuel to be approximately 50% of the current cost of generation (approximately \$0.03-\$0.05 per kWh).^{iv}

About the Solar Energy Industries Association®

Established in 1974, the Solar Energy Industries Association is the national trade association of the U.S. solar energy industry. Through advocacy and education, SEIA® and its 1,100 member companies are building a strong solar industry to power America. As the voice of the industry, SEIA works to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry and educating the public on the benefits of solar energy.

For more information, please visit www.seia.org.