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RELIABILITY STANDARD FOR THE § **BEFORE THE**
ERCOT MARKET § **PUBLIC UTILITY COMMISSION**
§ **OF TEXAS**
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I have been running ATC (available transmission capability) studies for wind and solar project developers from 1998 to the present. My career with Austin Energy was from 1970 – 1998 running generation, transmission, and distribution planning studies. I am well versed in the loss of load probability mathematics having completed a PhD on the subject: <https://egpreston.com/bookmod.pdf>

Everything the ERCOT engineers are doing with probabilistic models is what is needed to provide for a reliable generation supply. Implicit in ERCOT's analysis is that the transmission system will not significantly degrade the reliability. Normally NERC testing rules provide an amount of reserve transmission capacity similar to the generation reserve needed in probabilistic generation planning.

In running transmission connection studies for my solar clients, I am finding an increasing amount of transmission congestion is getting in the way of siting many new projects. There is not enough transmission in the network cases.

It's hard to justify and build new transmission. Usually there is no best answer, unlike generation planning where there may be an optimum point of reserve capacity, for example. No such process exists for transmission planning. I see insufficient transmission is having an impact on building new power plants.

Currently, the only types of new generation that is growing exponentially are solar plants and small unmanned gas backup generators. For Uri reliability we need reliable energy sources in base load mode combined with gas peakers to keep the lights on during extreme load periods. Unfortunately there is not sufficient transmission to support new base loaded power plants. We can expect an ever increasing number of emergency events due to transmission deficiencies.