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PANC Meeting

DER Integration Challenges

T&D Integrated Planning to study impacts of DER Integration

- Modeling and analysis of balanced and unbalanced systems
- Study the combined impacts on all voltage level

How much DER can the power system handle?

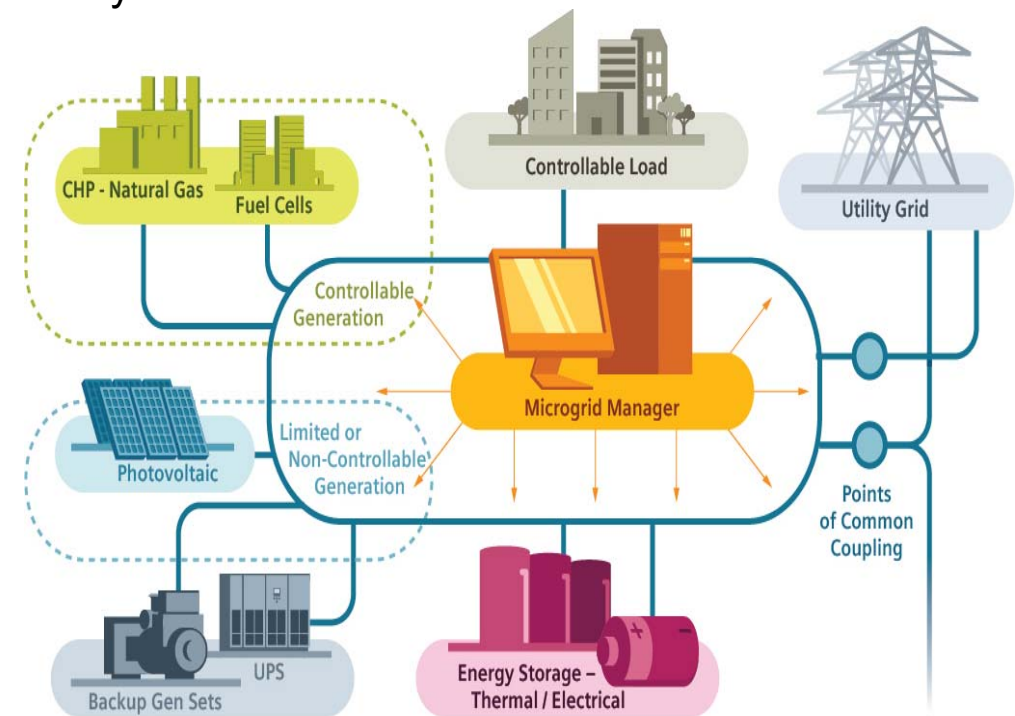
- Reliability Concerns
- Economic Impacts

DER intermittencies and fluctuations

- DER Historical Profile

Extensive DER integration

- Impacts on short circuit calculations
- Impacts on protection coordination
- Increase in harmonic distortions



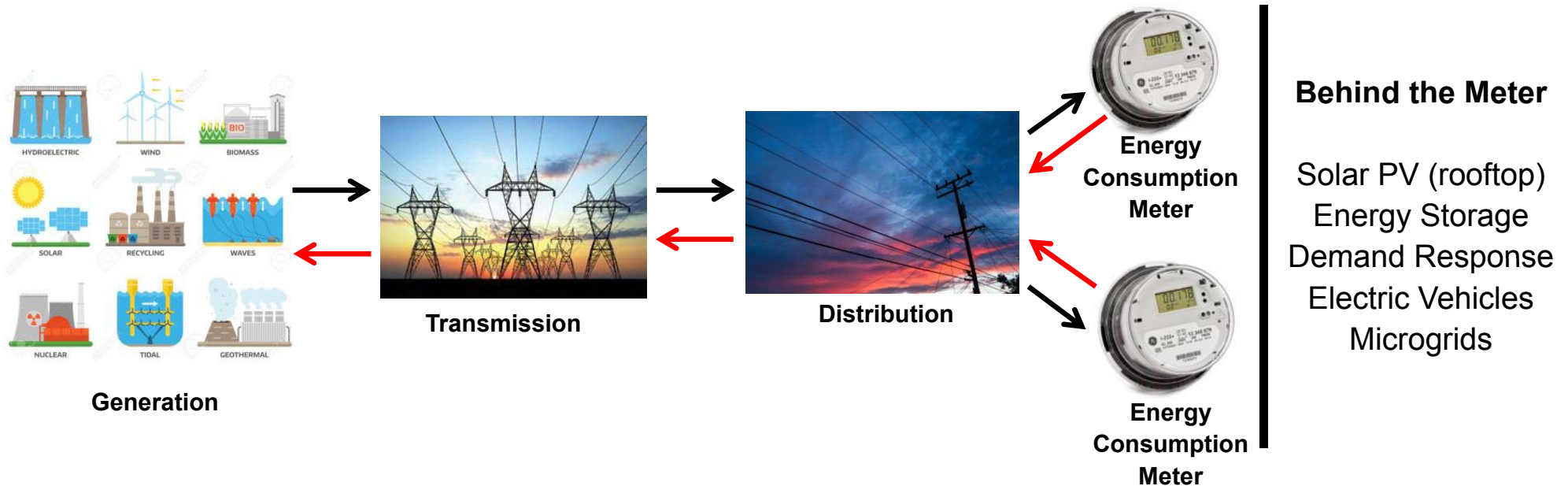
DER integration challenges

Shift in the industry



Smart Grid = Complicated Grid

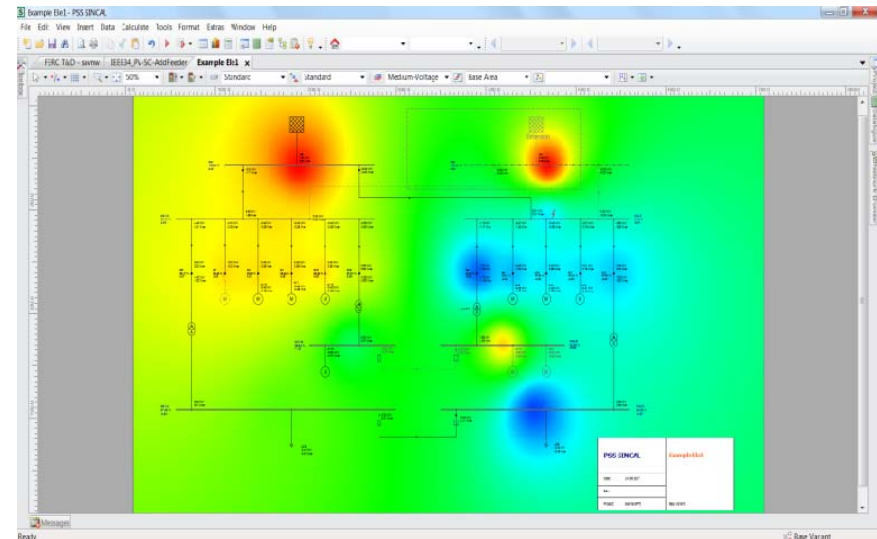
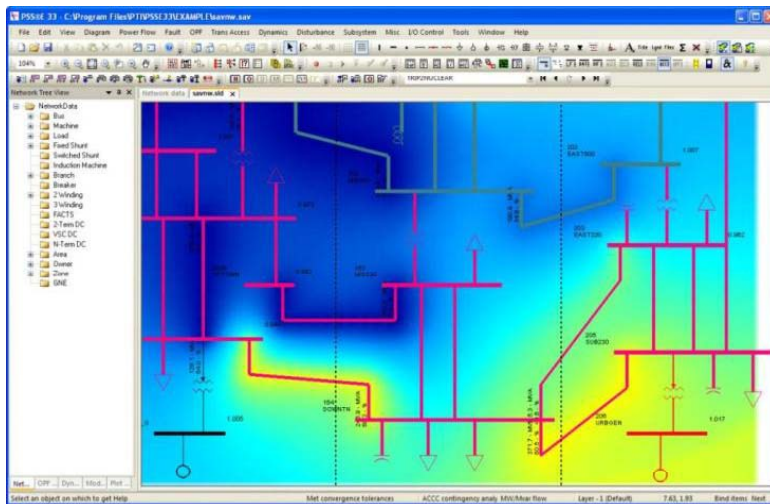
Impacts of extensive DER integrations on the transmission and distribution system.



DER integration challenges Shift in the industry

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Historically, separate tools are used for simulating transmission & distribution analysis.



Current planning software applications treat the other system as a boundary condition.

- Transmission planning software' assume loads are aggregated.
- Distribution software' assume an infinite voltage source at the point of connection.

Any Questions

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