

**"Destroy Your Power Grid as a Service" —
How Novel Grid Analysis Improves Grid Expansion Planning**

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Abstract:

Grid expansion means evolution of an existing architecture within a tight set of constraints. Nowadays, grid operators aim at efficient grid operation, face ever more uncertainty through a necessary increase in renewables, new energy market approaches, and prosumer behavior.

At the same time, grid expansion must now, more than before, consider environmental and sustainability goals, and faces acceptance issues.

Grid expansion is, therefore, not only optimization under constraints, but also under a huge amount of uncertainty, because many aspects of grid operation are increasingly dictated at runtime.

In this keynote, we take a look at modern approaches of grid analysis and resilient control and how these help in strategic grid expansion.