

Transmission - Grains of insight into the grid

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The way growing piles of sand behave -- with bursts of [energy](#) that result in large and small avalanches -- has served as a model for fusion researchers seeking insight into the way magnetically confined plasmas behave in fusion reactors. The same [research](#) into [self-organizing](#) systems has also lent itself to predicting the reaction of electric power grids to increasing power demand or system anomalies.

One year after the northeastern blackout drew attention to their work, Oak Ridge National Laboratory fusion researcher Ben Carreras, David Newman of the University of Alaska and Ian Dobson of Wisconsin University are continuing their power grid modeling research. Instead of being strictly an engineering challenge, the researchers now see the nation's electric power grid infrastructure driven by a complex combination of variables as diverse as rising demand, conflicting subsystems and societal pressures. Without a broader understanding of the interaction of those forces, a sandcastle power grid will be hard pressed to accommodate the rising tide of power demand.

Source: DOE/Oak Ridge National Laboratory

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