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E.ON Energy Research Center

RWTHAACHEN
UNIVERSITY

Prof. Clark Miller
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Friday, 29th June 2012
04:00 pm - 06:00 pm

Rethinking Energy Demand: Reflections from the History of US Electric Utilities

Utilities of tomorrow face a wide range of important challenges, especially as the role of renewables grows in supplying electricity. One particularly significant challenge is that the supply characteristics of renewable energy, and particularly its diurnal availability and intermittence, do not match well with contemporary electricity demand. As solar energy climbs in importance, especially (as it must if we are to address climate change, and as current estimates predict that it will very quickly, perhaps rising to 1 TW of total production by 2025), a major challenge will arise in responding to nighttime demand with long-term, clean-energy solutions. There are a number of potential solutions to this problem, which will be discussed. In particular, however, the talk will focus on the possibility of viewing electricity demand not as an extrinsic input to the electricity grid but rather an intrinsic element to it. US electric utilities used just such an approach during the early 20th century to address the same problem in reverse: how to address a large mismatch in nighttime production and consumption of electricity, albeit with high production and low consumption. Using this history as a guide, the talk will argue that an important new focus for utilities must be on socio-technological innovations that shift electricity demand away from the nighttime to periods of high solar production.



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