

مركــزالملـــك عبــدالله للدراســات والبحوث البتروليـــة King Abdullah Petroleum Studies and Research Center

Climate and Power System Reliability in the Aftermath of the Texas (ERCOT) Blackouts

Frank A. Felder

IAEE Webinar – August 9th, 2021

Agenda

10:00 – 10:05: Welcome and Opening Remarks, Dave Williams, IAEE and Frank A. Felder, KAPSARC

10:05 – 10:20: "Types and Causes of Power Outages and their Implications for Markets and Regulation" *Frank A. Felder, Ph.D., Program Director, Energy Transitions and Electric Power, KAPSARC*

10:20 – 10:35: "In Defense of Energy Only Markets" Rolando Fuentes, Ph.D., Research Professor of Economics and Finance, EGADE Business School

<u>Reference:</u> Climate and Power system Reliability in the Aftermath of the Texas Blackouts, Marie Petitet, Burcin Unel, Rolando Fuentes, and Frank A. Felder, 3rd Quarter 2021, IAEE, https://www.iaee.org/newsletter/issue/109 10:35 – 10:50: "Market designs with adequation and renewable objectives: insights on interactions between capacity market, carbon pricing and renewable portfolio standard" *Marie Petitet, Ph.D., Senior Associate, KAPSARC*

10:50 – 11:05: "Market and Regulatory Policy Design in the Face of Climate Change" Burcin Unel, Ph.D., Energy Policy Director, Institute for Policy Integrity, New York University School of Law

11:05 – 11:25: Questions and Answers *Moderator, Frank A. Felder*



Engineering

- Electricity is physically different from other commodities
 - Near instantaneous balancing required
 - Shortage for one is shortage for all
 - Storage of electricity is expensive
- Independent and dependent failures
- Reliability: security and adequacy & Resiliency

Economics

- Markets do not always clear
- Missing markets
- Centralized operations required
- System operator's principal-agent problem
- System operator may intervene too soon in markets

Political Economy

- Industry has a long history of regulatory overhang
- Electricity is considered by many to be a merit good
- Policymakers may not allow prices to rise sufficiently to clear markets
- Electric sector viewed as a public policy mechanism to achieve other political economic goals besides efficiency

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- 1. Jaffe, Adam B., and Frank A. Felder. "Should electricity markets have a capacity requirement? If so, how should it be priced?." The Electricity Journal 9.10 (1996): 52-60.
 - Felder, Frank A. "Watching the ISO watchman." The Electricity Journal 25.10 (2012): 24-37.
- 3. Felder, Frank A. ""An Island of Technicality in a Sea of Discretion": A Critique of Existing Electric Power Systems Reliability Analysis and Policy." The Electricity Journal 14.3 (2001): 21-31.