

Electricity Market Design Under Long-Term Decarbonisation: **Challenges and Opportunities**

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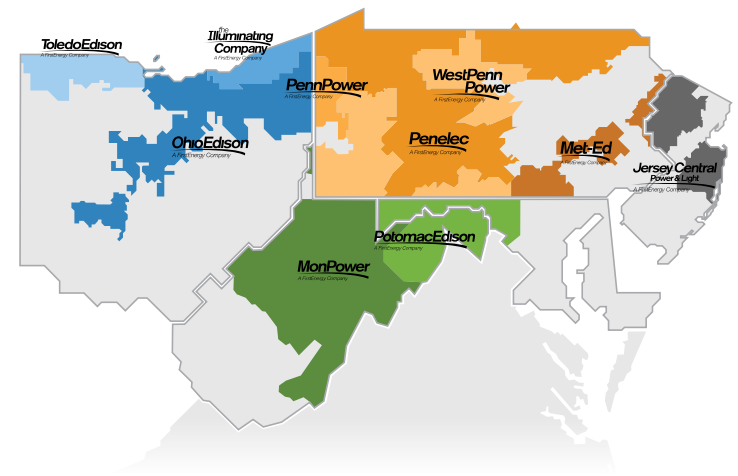
Vice President, Environmental and Technologies

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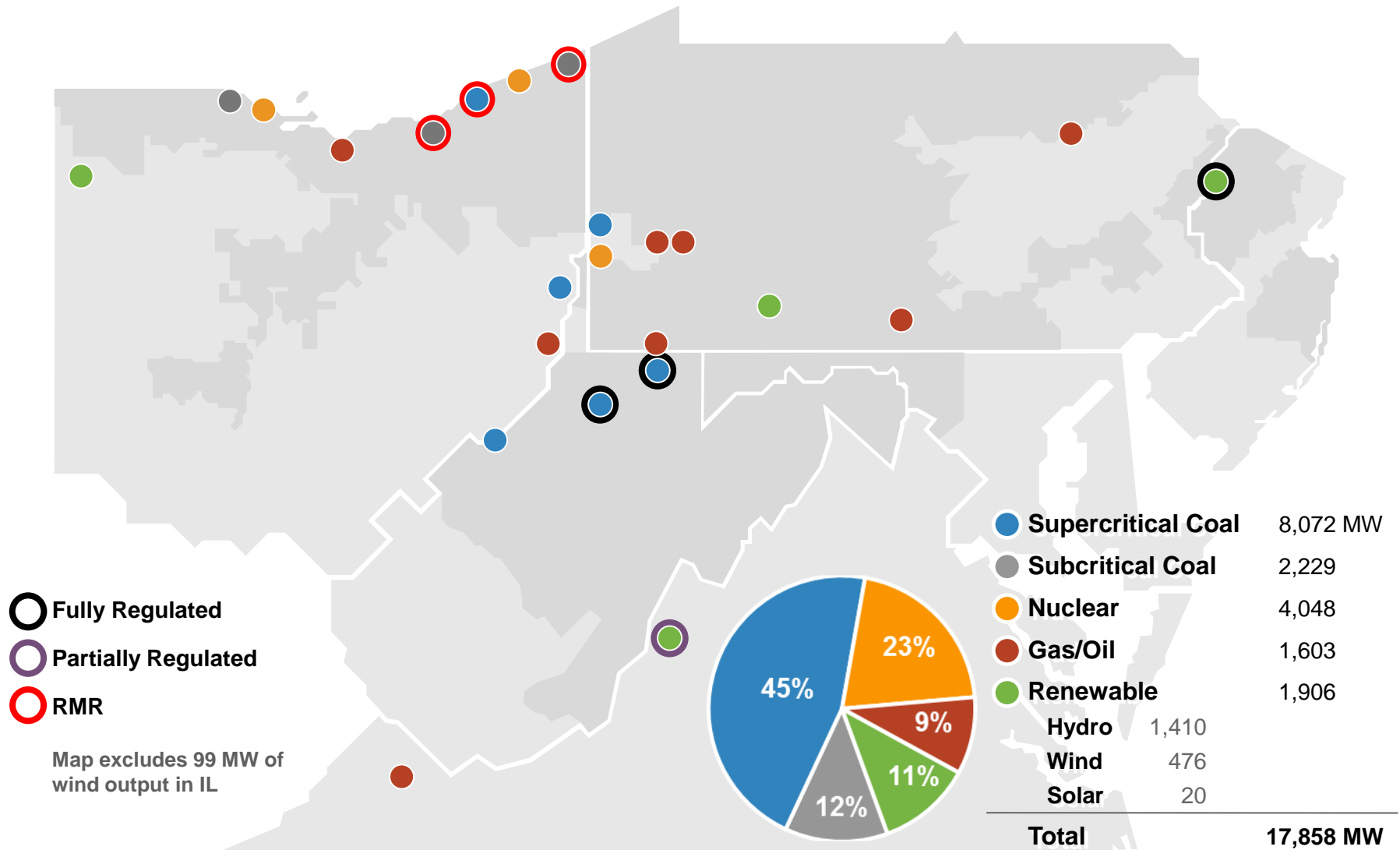


FirstEnergy Overview

- Headquartered in Akron, Ohio
- Operations in six states
- Generating fleet capacity of 18,000 megawatts
- 10 electric distribution companies serving six million customers over a 105,000 square kilometer service territory
- 32,000 kilometers of high-voltage transmission lines
- Leading retail energy supplier serving residential, commercial and industrial customers



FirstEnergy's Diverse Generating Sources



Principles of a World Class Electric System



An Evolving Landscape



- **Depressed wholesale prices**
- **Environmental regulation**
- **Influx of natural gas**
- **Energy efficiency**
- **Demand response**
- **Intermittent renewables**
- **Distributed generation**

Rooftop Solar and the Electric Grid

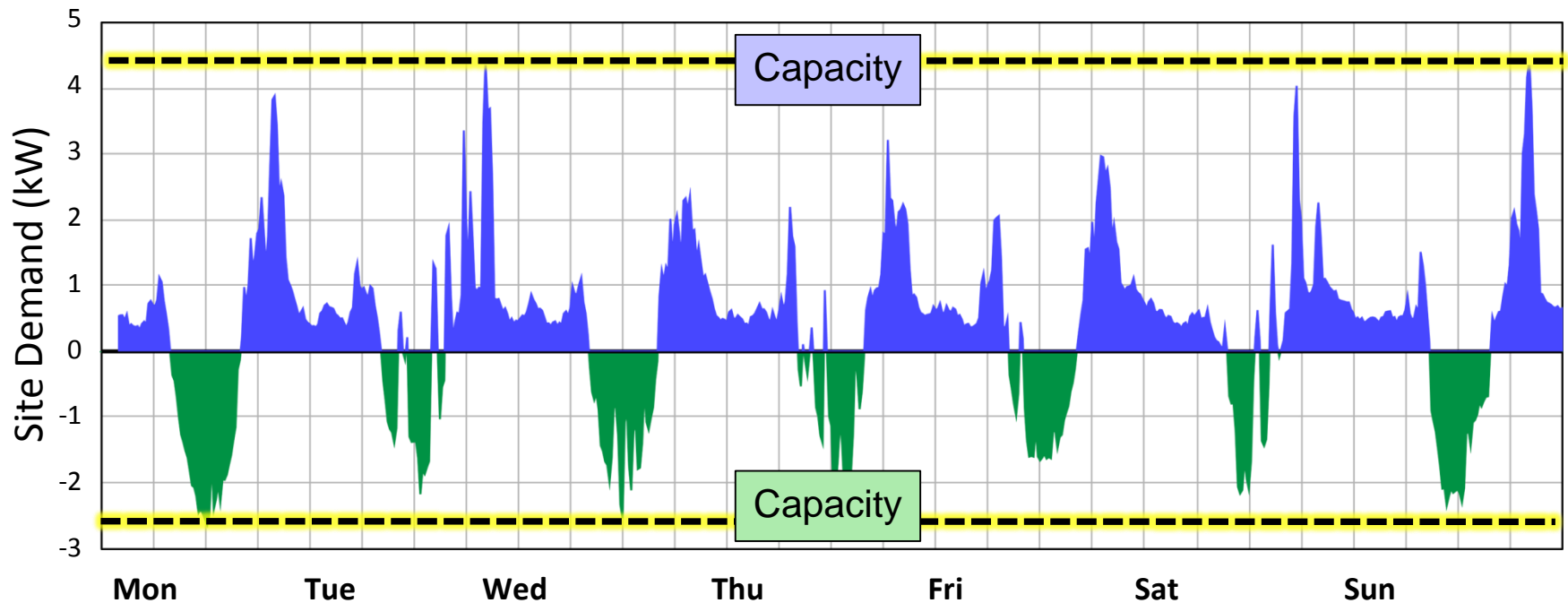


Image courtesy of EPRI

Measured Evolution: The Key to Our Energy Future

- An evolving grid – past, present and future

- All generation is not created equal

- **Coal:** reliable, affordable, well-understood technology, on-site fuel supply, excellent safety record
- **Nuclear:** zero carbon emissions, 90% capacity factor, stable rates, on-site fuel supply

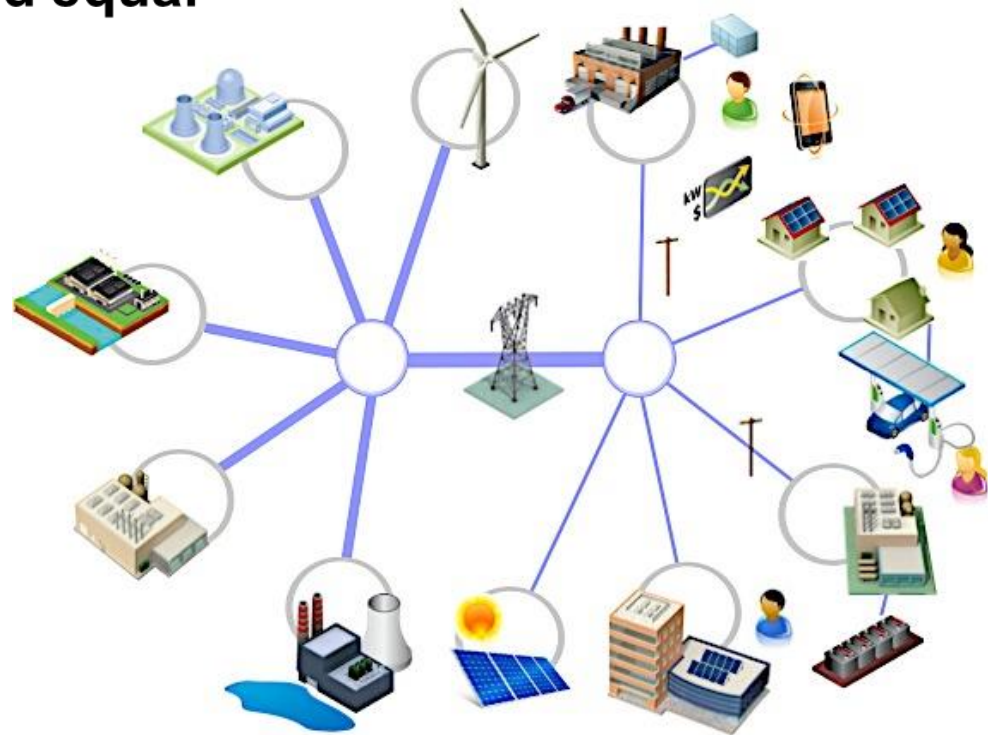


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Changing the Conversation

1

Move beyond consumption-based billing and address issues with net metering

2

Appropriately value different types of generation

3

Drive fair pricing through policy changes

No one-size-fits-all solution