

# Solar and Storage Initiatives

OUC – The *Reliable* One  
Orlando, Florida

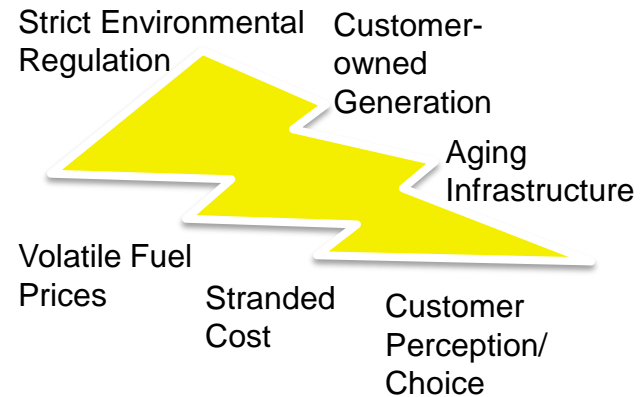


# Transforming OUC to the Utility of the Future

## Traditional Utility

- Centralized – Monopolistic
- Analog - Reactive
- Capital Intensive
- Fossil-fuel Energy
- Conventional Resource Planning
- Traditional Generation & Delivery

## Challenging Factors

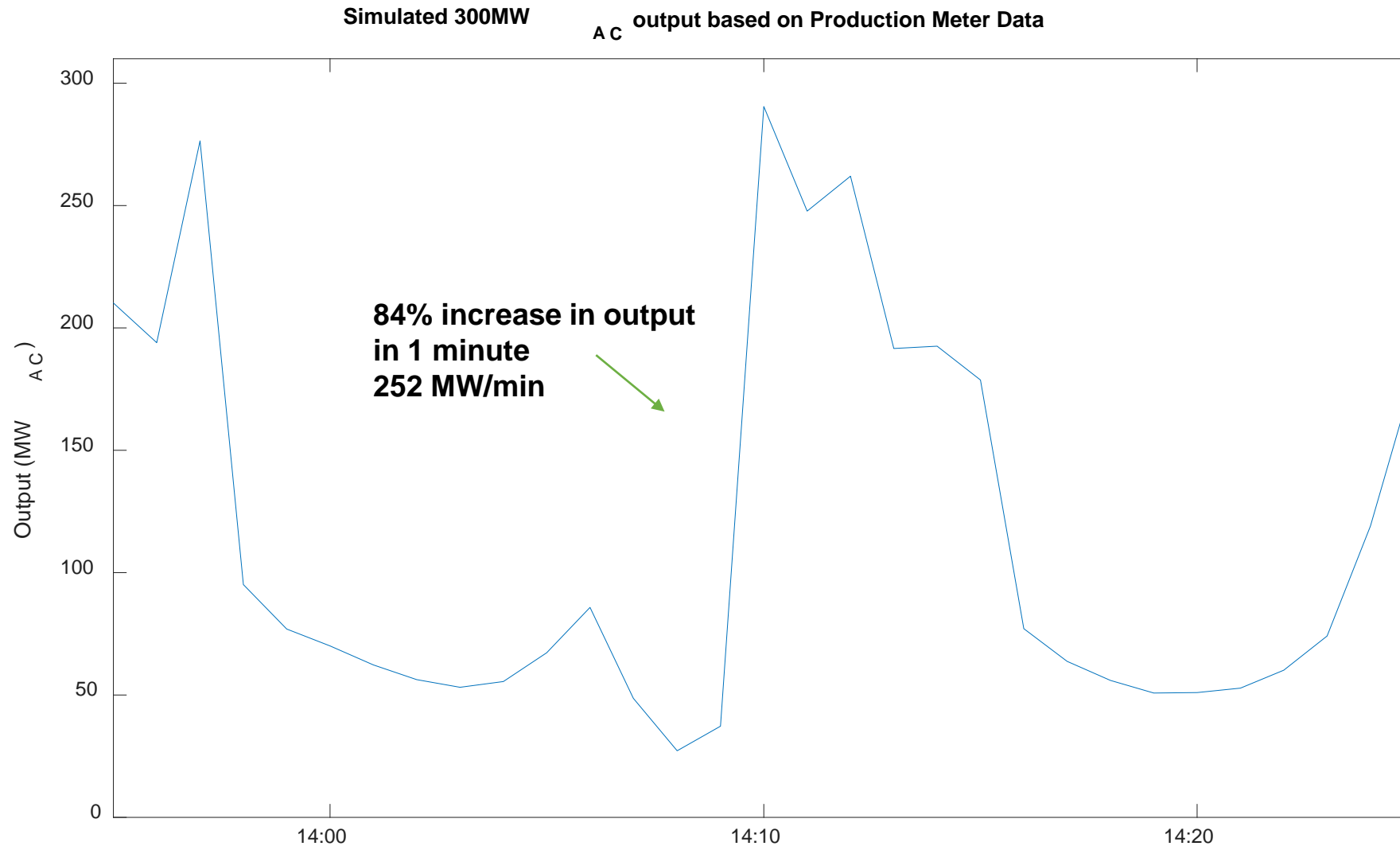


**Emerging Technologies**

## Utility of the Future

- Decentralized
- Digitized - Data-driven/Machine Learning
- Transactional
- Renewable Energy
- Sophisticated Holistic Planning
- New Business Models & Services

# Solar PV Grid Impact



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# PV + Storage Pilots

## Solar Integration

### Floating Solar + Storage

DC-coupled battery storage

Clipped energy harvesting and peak shaving

PV Smoothing

## Flexible Resource

### Grid-Scale Substation Battery

AC-coupled battery storage

Ancillary services (spinning reserve, frequency response)

T&D Investment Deferral



# Nanogrid



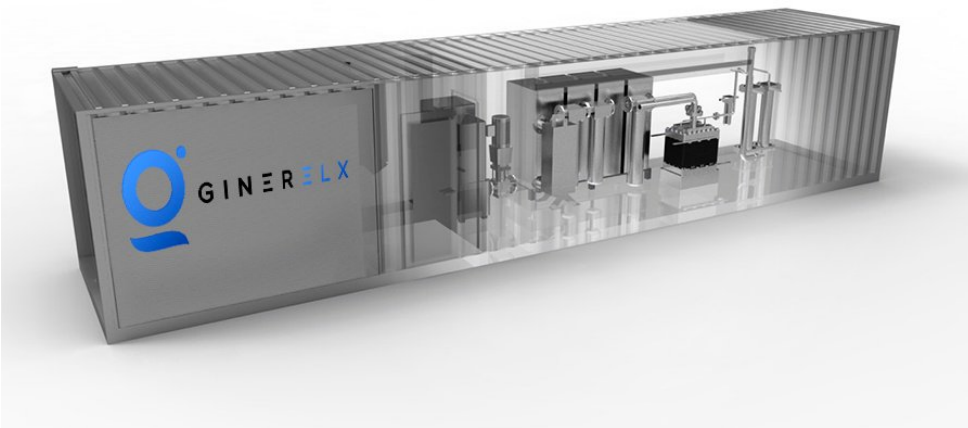
Source: EVgo

# Hydrogen Research

- Strategic fuel/resource for solar integration and electrification
  - Controllable load for hydrogen production
  - Fuel used to generate power back to grid or for transportation fuel
- U.S. DOE grant awarded - \$10 million total value



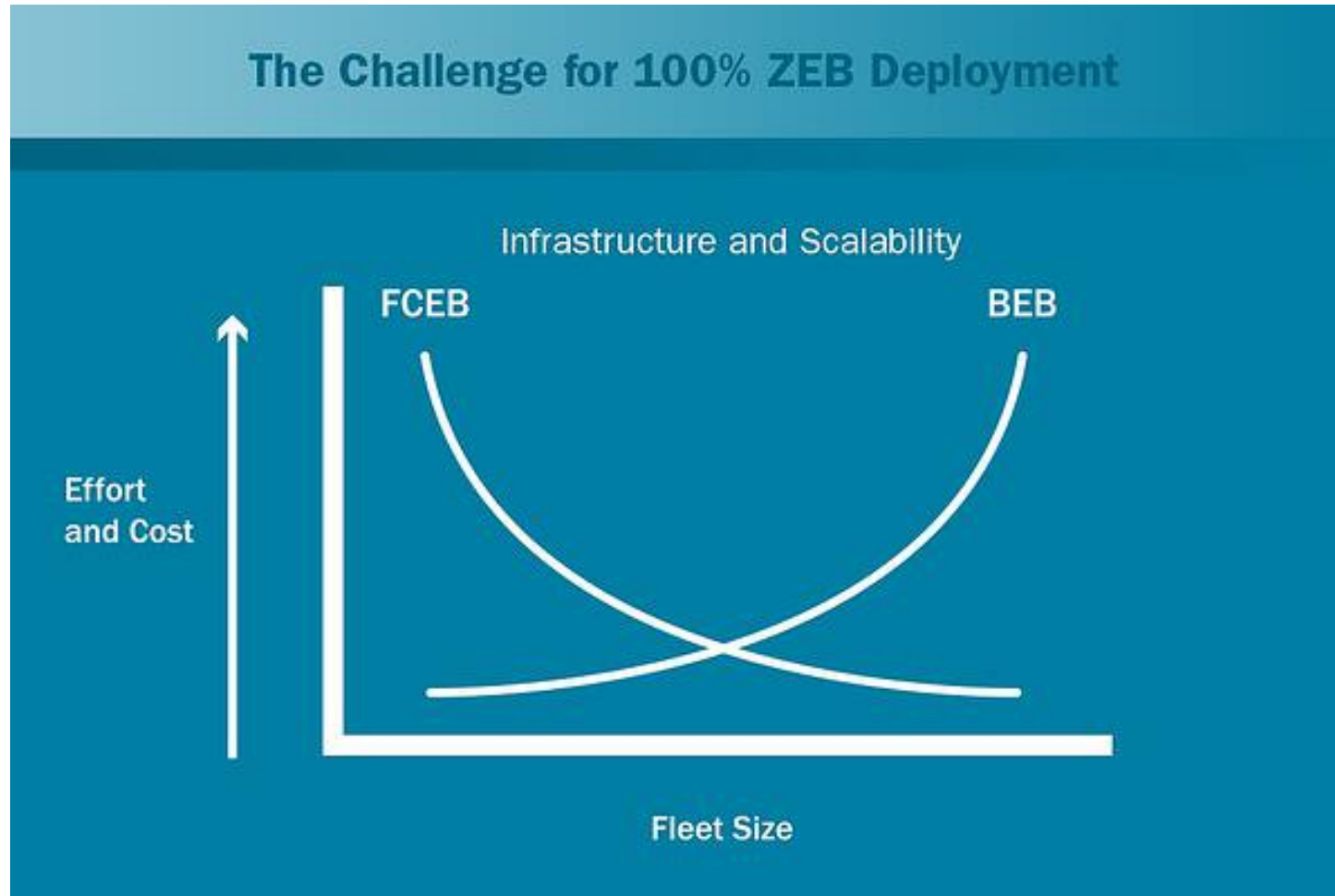
UNIVERSITY OF  
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RELIABLE • AFFORDABLE • SUSTAINABLE



# Hydrogen Research



Source: NREL

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