Grid Forming Technology and System Flexibility: Technical Challenges and Regulatory and Policy Solutions

Berlin, Germany | 06 OCTOBER 2025

OVERVIEW

Supported by: ESIG

Organized by: energynautics solutions for sustainable development

Workshop Agenda Overview

Monday am

- Welcome and Introduction: Thomas Ackermann, Energynautics
- Overview: Charlie Smith, Energy Systems Integration Group (ESIG)
- Keynote Comments: Ms. Sonya Twohig, Secretary General, ENTSO-E
- Technical Challenges Session: Chair, Julia Matevosyan, ESIG

Monday pm

- Lunch
- Regulatory and Policy Solutions Session: Chair, Andreas Jahn, RAP
- Roundtable Discussion: Facilitator, Simon Mueller, Energy Transition Catalytics
- Adjourn
- Networking Reception

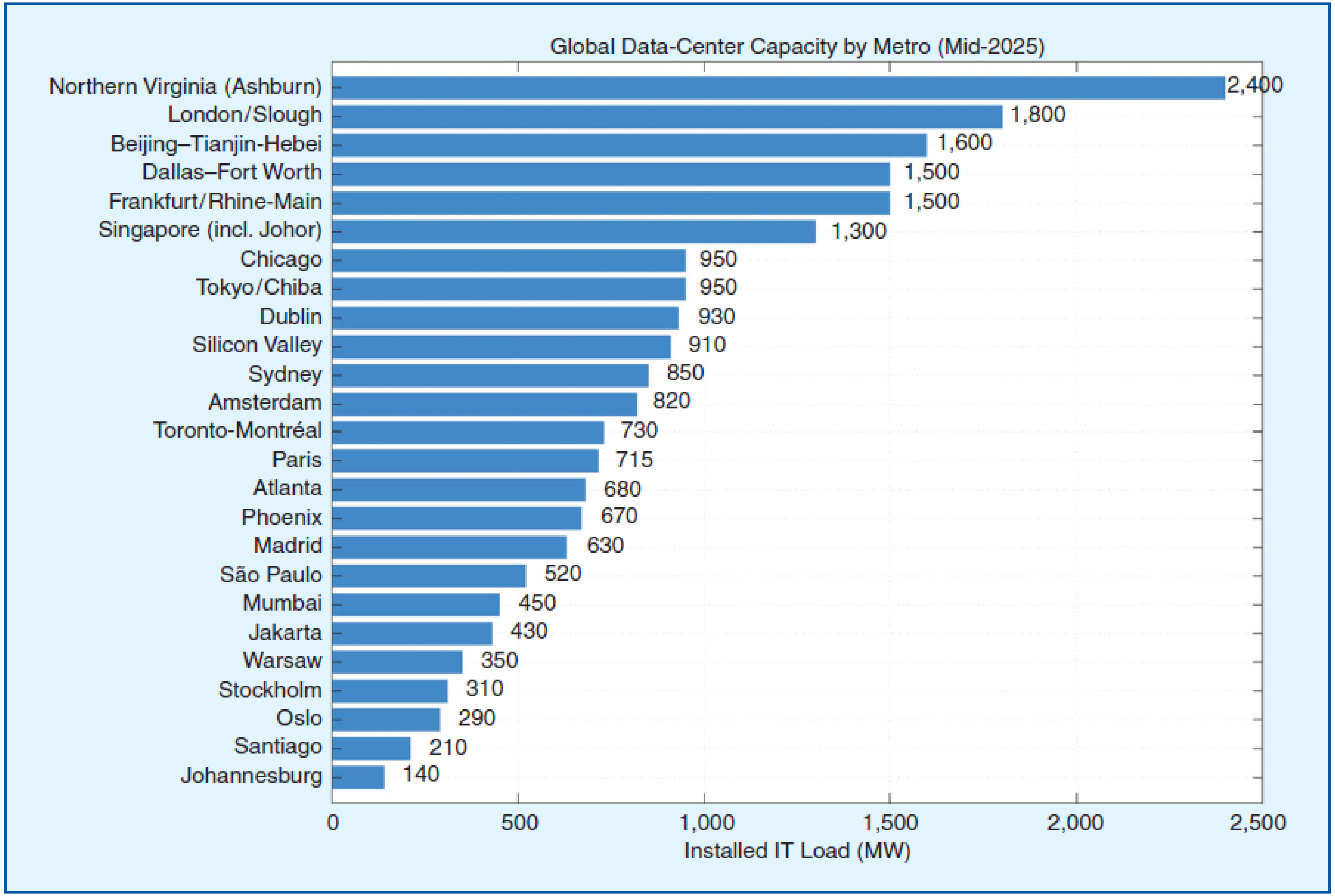
Workshop Purpose

- Help identify barriers and opportunities for adoption of grid forming (GFM) technology in inverter based resources to improve renewable energy resource integration into the electric system
  - ✓ Large energy storage batteries
  - ✓ Artificial Intelligence data centers
- Both batteries and data centers can provide as well as require flexibility services
- Both are critical to integrating renewables and serving the rapidly growing AI data center load.
- Wind and solar power plant applications are widespread

Workshop Flow

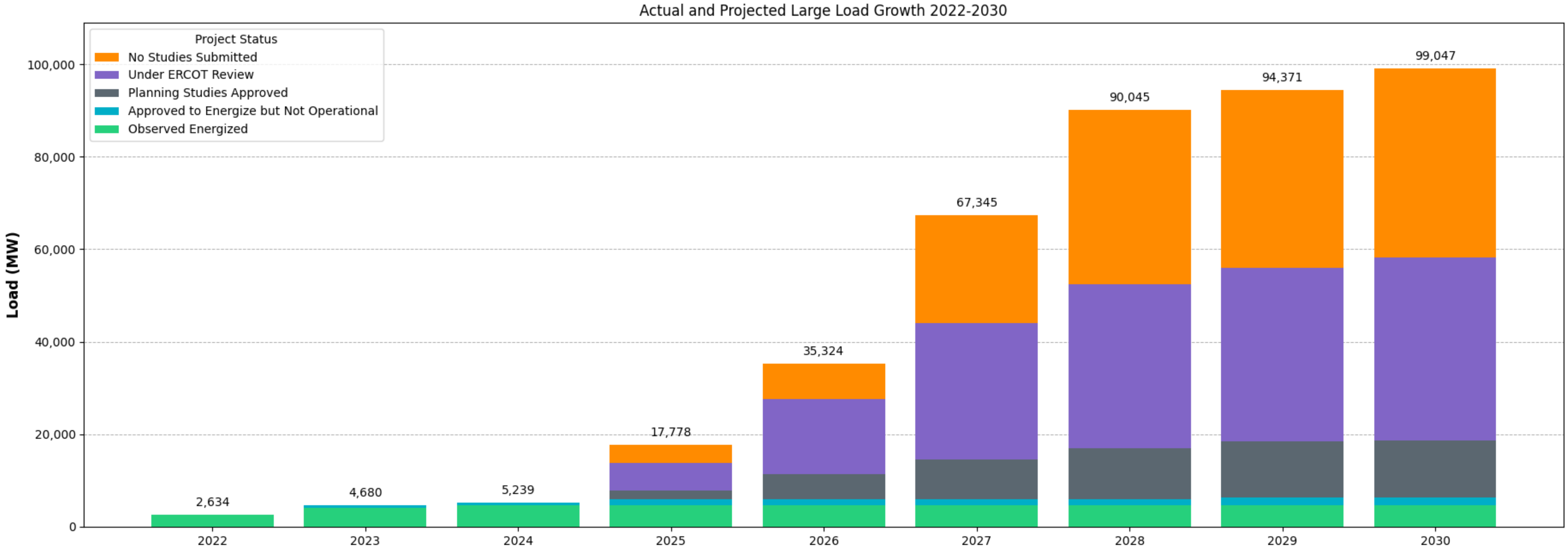
- Technical session: Identify technical challenges in requirements for, and ability to provide, flexibility services
- Regulatory and policy session: Identify regulatory and policy gaps where additional work is needed to address the technical challenges
- Roundtable: Identify actions that can be taken to help address the challenges and gaps in pursuit of targeted emission reductions
  - ✓ Identify any regional differences across the EU
  - ✓ Brainstorm new approaches to solve problems
  - ✓ Identify best practices and lessons learned

Top Locations of Data Centers Worldwide



Source: IEEE Power & Energy Magazine

Current Large Load Interconnection Queue



Source: ERCOT

Getting Innovative: System Flexibility in the News

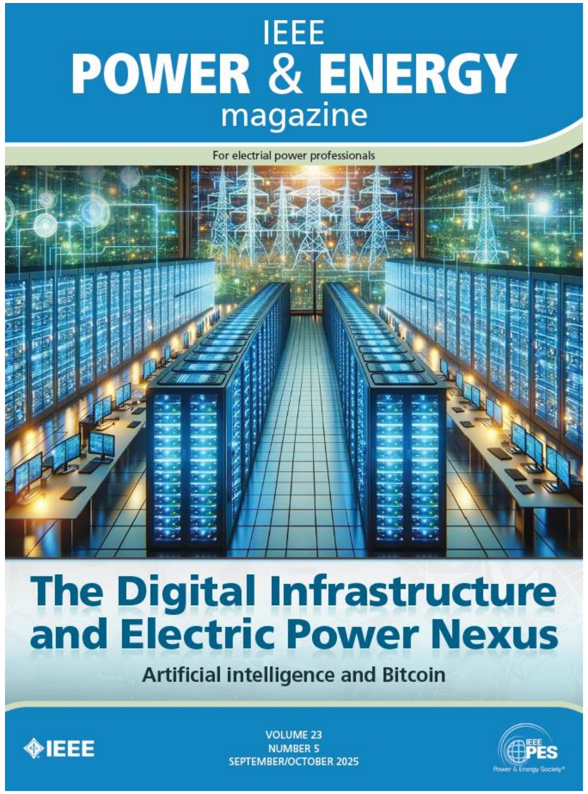
- State of Ohio, July, 2025: Ohio regulators created special rate category for data centers with rules designed to limit rate impacts on other customers
- In August 2025, Google announced agreements with Indiana & Michigan Power (I&M) and Tennessee Valley Authority (TVA), that "represent the first time we're delivering data center demand response by targeting machine learning workloads."
- Proposal for flexibility from data centers: adopt rules that allow data centers to connect to the grid more quickly in exchange for flexibility in power usage; Klass and Owen, forthcoming, George Washington Law Review

Onward and Upward

- IEEE P&E magazine Large Loads issue published September/October 2025

- A warm welcome to our participants from:

Belgium	**Slovenia**
Denmark	**Turkey**
Germany	**UK**
Ireland	**US**
Poland	**Texas**



- Take the time to make some new friends!
- Looking forward to a great meeting!

THANK YOU

Charlie Smith

Principal Consultant

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