



Welcome to the Spring Technical Workshop!

Debbie Lew, Executive Director of ESIG | March 17, 2026



ESIG Disclaimer

- ESIG meetings, presentations and workshops provide a forum for the discussion, education and advancement of technical issues for the public good. Participants are presenting their personal viewpoints and are encouraged to consider a wide range of ideas to promote discussion, but do not necessarily represent the views of their employers, organizational affiliations, or ESIG. Any information presented or discussed at the workshops or meetings is for informational purposes only. ESIG accepts no responsibility for the accuracy of such presentations, or for your reliance on any information contained within the content.
- A broad range of participants are welcome and encouraged to be actively involved including regulators, state energy offices, and consumer advocates, and a broad range of technical topics will be discussed. Ex parte information that is pending before a regulator will not be discussed, and regulators should raise concerns or excuse themselves from that portion of a meeting if the discussion inadvertently enters topics that could be of concern.

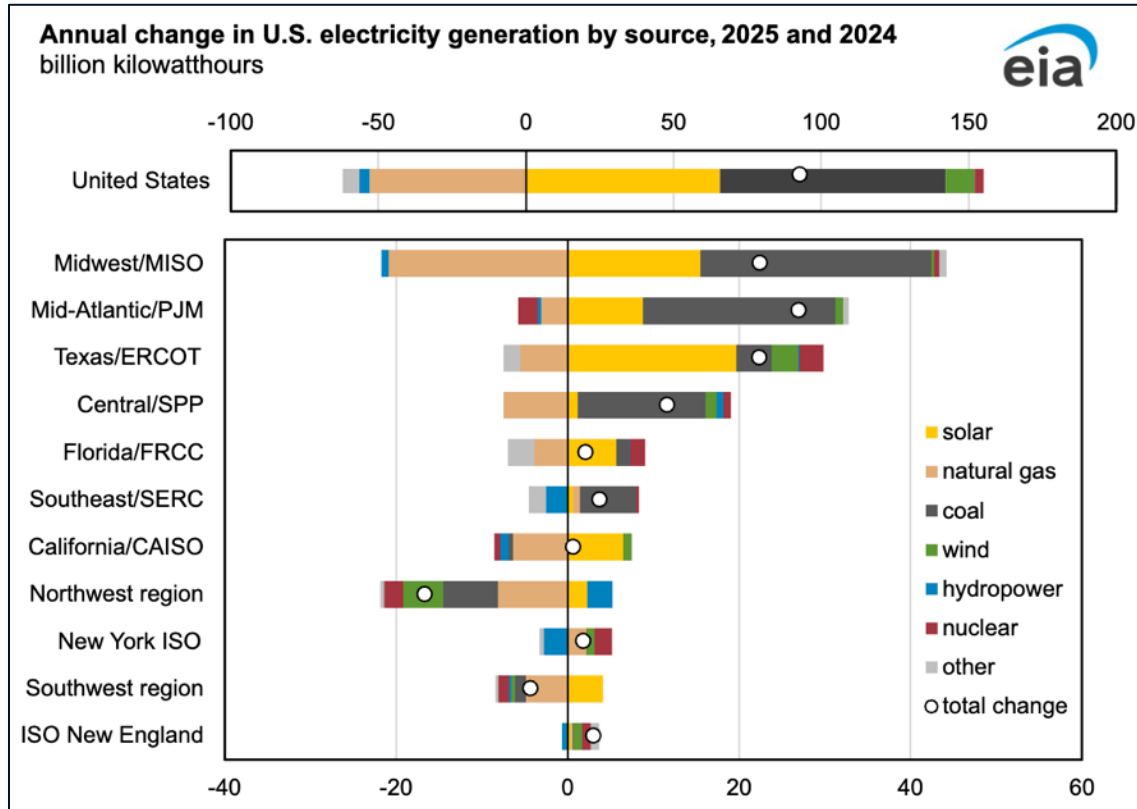
ESIG Antitrust Compliance Guidelines

- It is ESIG's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition.
- The antitrust laws make it important that event participants avoid discussion of topics that could result in charges of anti-competitive behavior, including: restraint of trade and conspiracies to monopolize, unfair or deceptive business acts or practices, price discrimination, division of markets, allocation of production, imposition of boycotts, exclusive dealing arrangements, and any other activity that unreasonably restrains competition.
- For additional guidelines, please see: <https://www.esig.energy/wp-content/uploads/2022/10/Antitrust-Compliance-Guidelines.pdf>.

ESIG Non-Discrimination / Anti-Harassment Rules

- The Energy Systems Integration Group (ESIG) **does not tolerate** discrimination or harassment, which can take many forms, by its staff, members, meeting attendees, guests or other participants in any ESIG activities.
- ESIG does not and shall not discriminate on the basis of race, color, religion (creed), gender expression, age, national origin (ancestry), disability, marital status, sexual orientation, or military status, in any of its activities or operations. These activities include, but are not limited to, hiring and firing of staff, selection of volunteers and vendors, and provisions of services. We are committed to providing an inclusive and welcoming environment for all members of our staff, volunteers, subcontractors, vendors and clients.
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Lots of solar. More batteries. But high gas prices resulted in more coal use.



- 53 GW of new capacity added last year
 - 27 GW utility-scale solar PV
 - 15 GW battery energy storage
 - 5 GW wind
- And this does not include 6 GW small-scale solar
- Estimating 86 GW of new capacity to be added this year – mostly solar, batteries, wind and 6 GW of gas

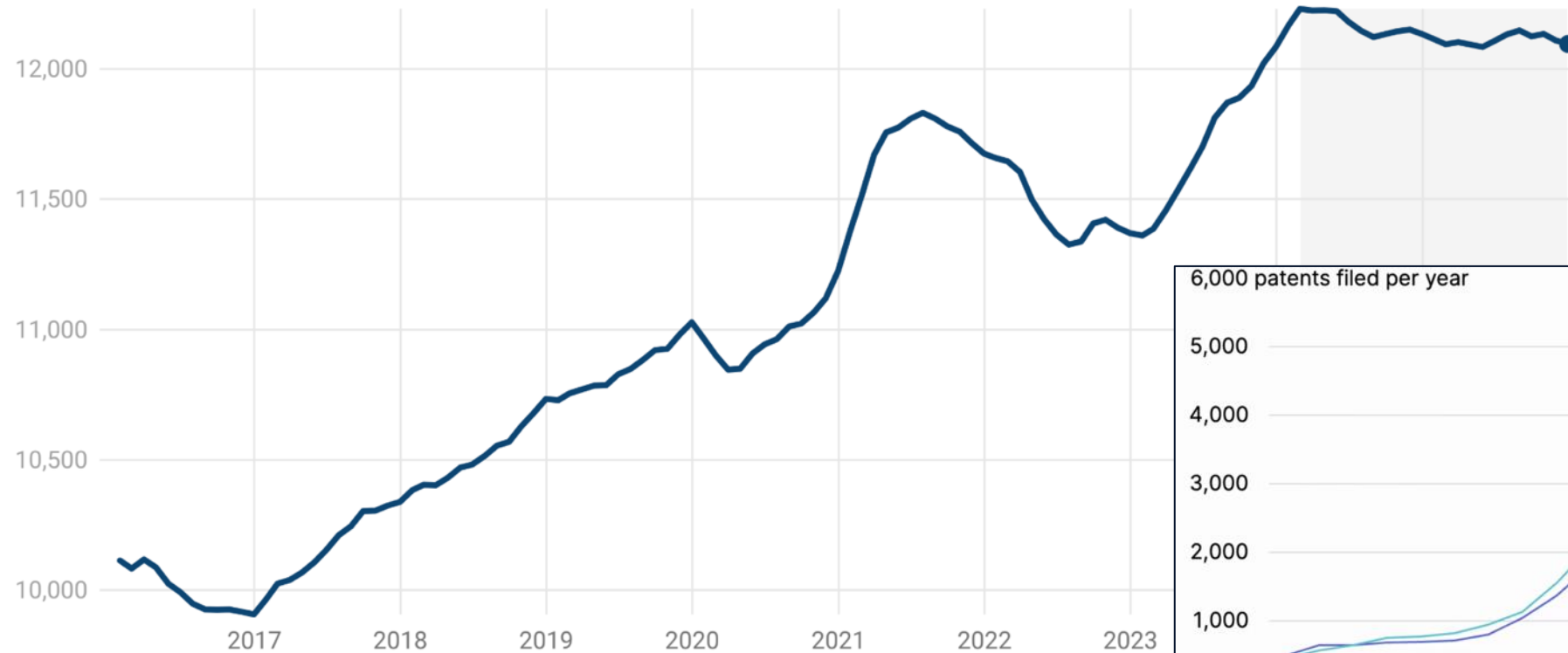
<https://www.eia.gov/todayinenergy/detail.php?id=67106>

www.eia.gov/todayinenergy/detail.php?id=67205

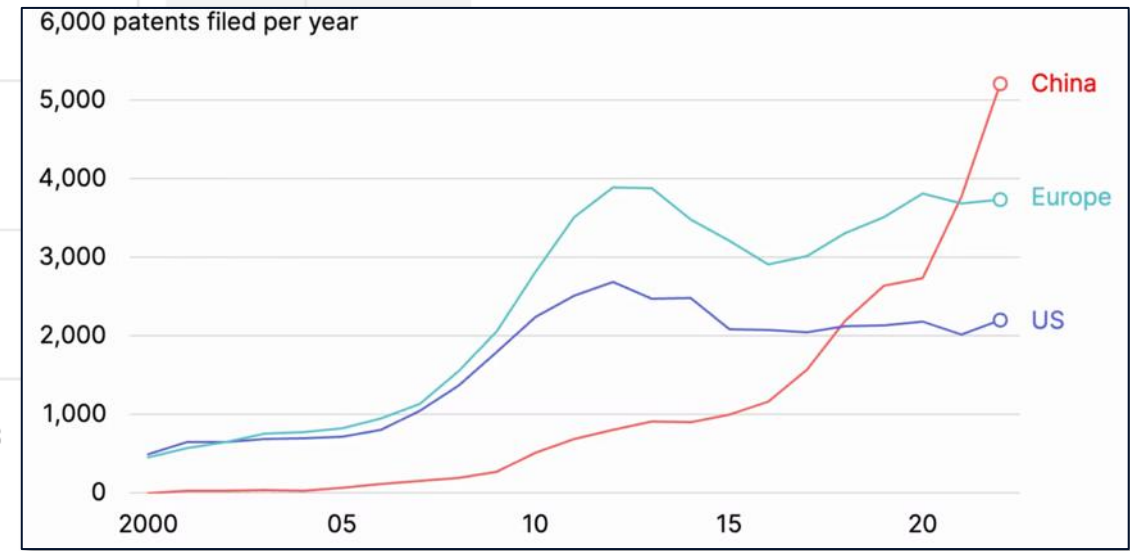
China is leading the way

China's CO2 emissions have now been 'flat or falling' for 21 months

CO2 emissions from fossil fuels and cement, million tonnes of CO2, rolling 12-month totals

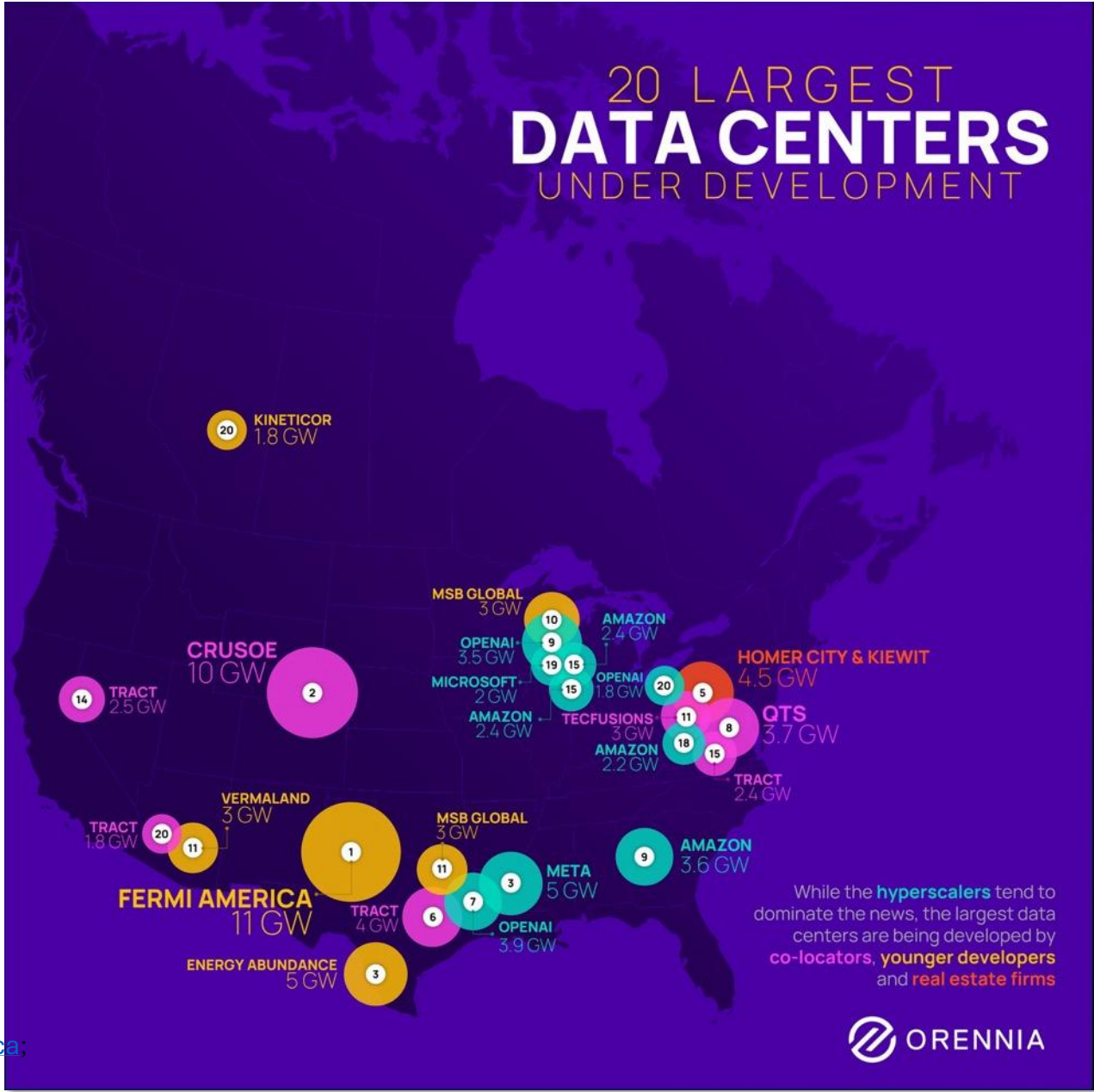
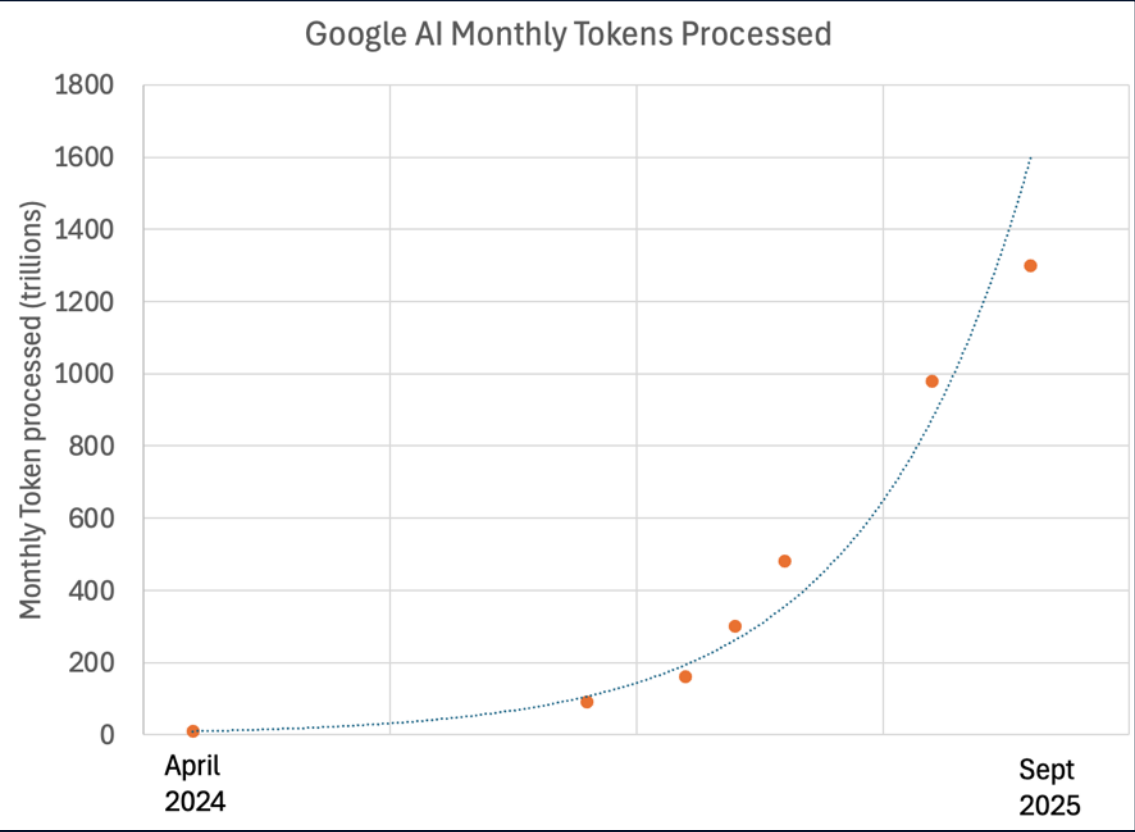


Source: Analysis for Carbon Brief by Lauri Myllyvirta



<https://www.carbonbrief.org/analysis-chinas-co2-emissions-have-now-been-flat-or-falling-for-21-months/>;
<https://www.nathanielbullard.com/presentations> based on NY Times, European Patent Office, Espacenet

Data centers are transforming our grid

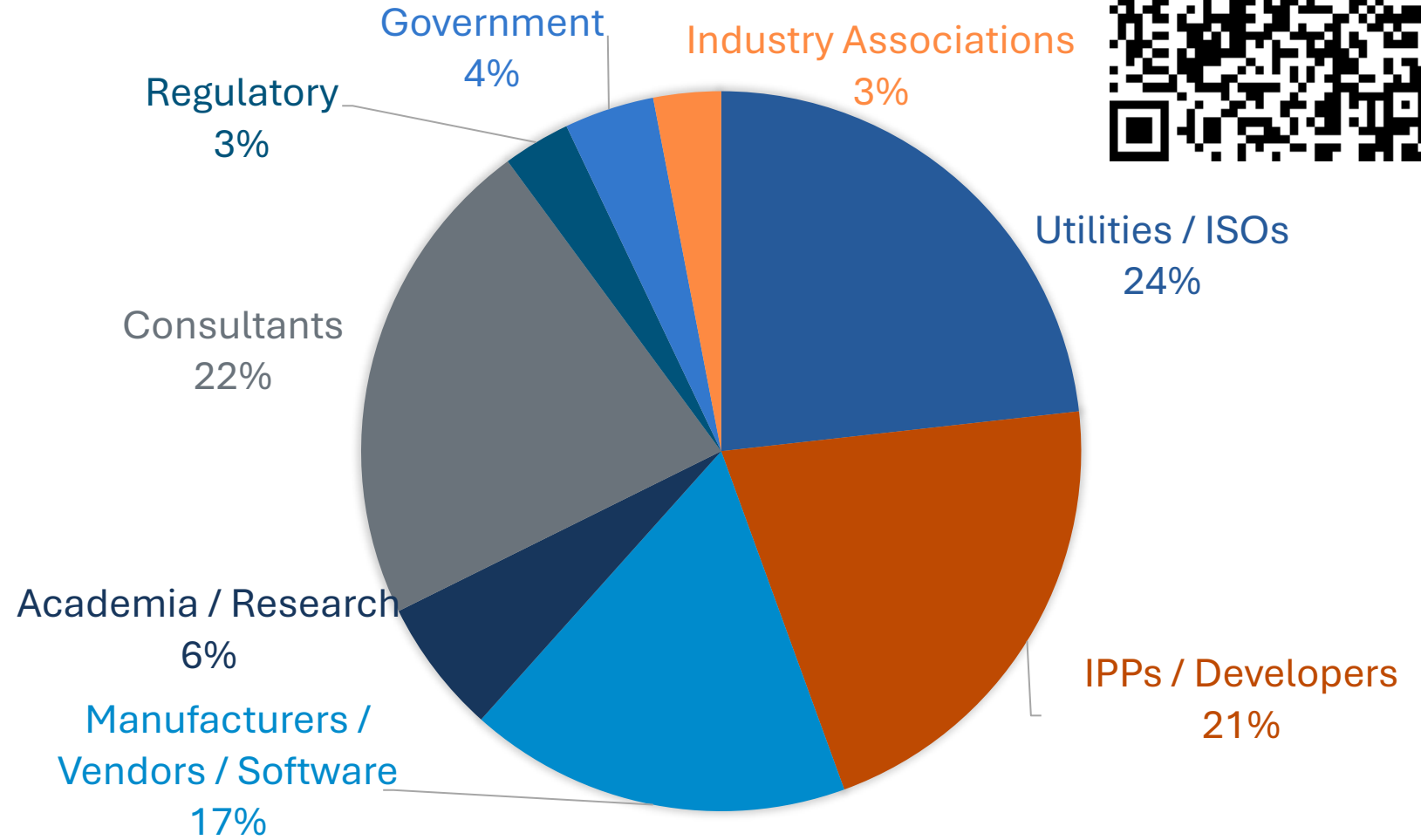


<https://orennia.com/insights/the-20-largest-data-centers-being-developed-in-north-america>;
<https://www.nathanielbullard.com/presentations> based on Google statements

The strength of ESIG lies in its members



- **300+** member organizations
- About **1,600** individuals from these organizations are engaged through working groups, user groups, and task forces
- Special shout-out to our sustaining members: **Meta, NextEra Energy, and Polaris Systems Optimization**



System Planning WG Josh Novacheck	System Ops & Market Design WG Justin Sharp	DER WG Obadiah Bartholomy	Reliability WG Dustin Howard	Research & Education WG Tom Acker
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Resilience Benefit Quantification for Transmission Planning TF

Warren Lasher

Island grids study PT

Paul Donohoo-Vallett

Order 1920 Playbook TF

Derek Stenclik/Warren Lasher

LLTF - Transmission Planning PT

Hannes Pfeifenberger/Warren Lasher

Operational Considerations in Planning PT

Elaine Hart

LLTF - Large Load Risk Mitigation PT

John Wilson

Resource Adequacy TF

Derek Stenclik

LLTF - Resource Adequacy PT

Derek Stenclik/Aaron Schwartz

LLTF - Market Design & Operations PT

Beth Garza/Erik Ela

Technology Neutrality TF

Emma Nicholson

LLTF - Large Load Rates Impact PT

Long Lam

EV Load Forecasting Guide TF

Matt Schuerger

Integrated Planning TF (joint with SPWG&RWG)

Aaron Burdick

DER Grid Service Value TF

Darren Murtaugh

Increasing DER Hosting Capacity PT

Leo Jiang

Large Loads TF (LLTF)

GFM Testing PT

Shahil Shah

Oscillations PT

Nick Miller

Services TF

Matt/Julia/Deepak

i2X Forum for Implementation of Reliability Standards for Transmission

Julia Matevosyan

LLTF - Interconnection Process PT

Kyle Thomas

Operational Readiness Strategy Project

Alex Shattuck

Technical Workshops and Tutorials

Interconnection Studies Short Course

EMT Training (Delivered with DOE i2X and LBNL)

Regulator Trainings

Current Task Forces and Project Teams

User Groups Structure

Operations &
Maintenance

Ninochska
Bosworth

Probabilistic
Forecasts in Planning
& Operations

Nitika Mago

Advanced Grid
Solutions
Technologies

Congcong Wang /
Michael McAmis

Recent ESIG Task Force Reports

- [Foundations of Integrated Planning](#)
- [Integrated Planning Guidebook](#)
- [Optimization for Integrated Planning](#)
- [Grid-Enhancing Technologies](#)
- [Long-term Load and DER Forecasting](#)
- [Testing the Performance of Grid-Forming Resources](#)
- [Wide-area Resource Adequacy Assessments](#)
- [Net-zero Electricity Planning](#)
- [Integrating Transmission Silos](#)
- [Forecasting for Large Loads: Current Practices and Recommendations](#)
- [Large Load Interconnection Performance Requirements](#)
- [Stress Testing Methods for Resilience to Extreme Events](#)



Yesterday – Monday, March 16

- Tutorial on Increasing DER Hosting Capacity with Flexible Interconnections and Flow Control
- DOE i2X FIRST Grid-forming Inverter Workshop
- Research & Education Working Group Meeting
- Special Joint Working Group Session: Operational Considerations in Planning
- DER Working Group Meeting
- Joint Meeting of System Planning and System Operation & Market Design Working Groups
- Evening - ESIG Meet and Greet

Today – Tuesday, March 17

- Opening Session – thanks to Mark Rothleder, SVP & COO of CAISO
- Opening Plenary on Energy Affordability
- Noon – 12:15pm Annual Membership Meeting
- Noon – 1:15pm Lunch
- 1A: Inverter-Based Resources Dominated Systems
- 1B: The Expanding Role of Electricity Markets Across the West
- 2A: Proactive Distribution System Planning
- 2B: Expanding the Grid in the Western US: Planning Coordination and Delivery
- 6:30 – 8:30 pm Networking Reception, Student Posters, and ESIG Excellence Awards

Tomorrow – Wednesday, March 18

- 7 – 8 am Breakfast
- 3A: EMT Modeling and Studies
- 3B: FERC Order 2222 on DER Aggregation Participation in Wholesale Markets: Five Years Later, Has it Lived up to its Potential?
- 4A: System Strength Metrics and Impedance Scanning Methods
- 4B: Major Market Reform Experiences from Regions around the World
- 12 – 1:15 pm Lunch
- 5A: Oscillation Detection and Analysis
- 5B: Integrated Capacity Expansion and Resource Adequacy Methods
- 6A: Advanced Technologies for Distribution Grid Optimization and Resource Integration
- 6B: FERC Order 1920: Assessing Benefits of Transmission

Thursday, March 19

- 7 – 8 am Breakfast
- 7A: Large Loads: Stability Impacts, Interconnection Requirements, Modeling Considerations
- 7B: Integrated Planning
- Closing Plenary on Flexibility from Large Loads
- Noon – 12:10pm Closing Remarks

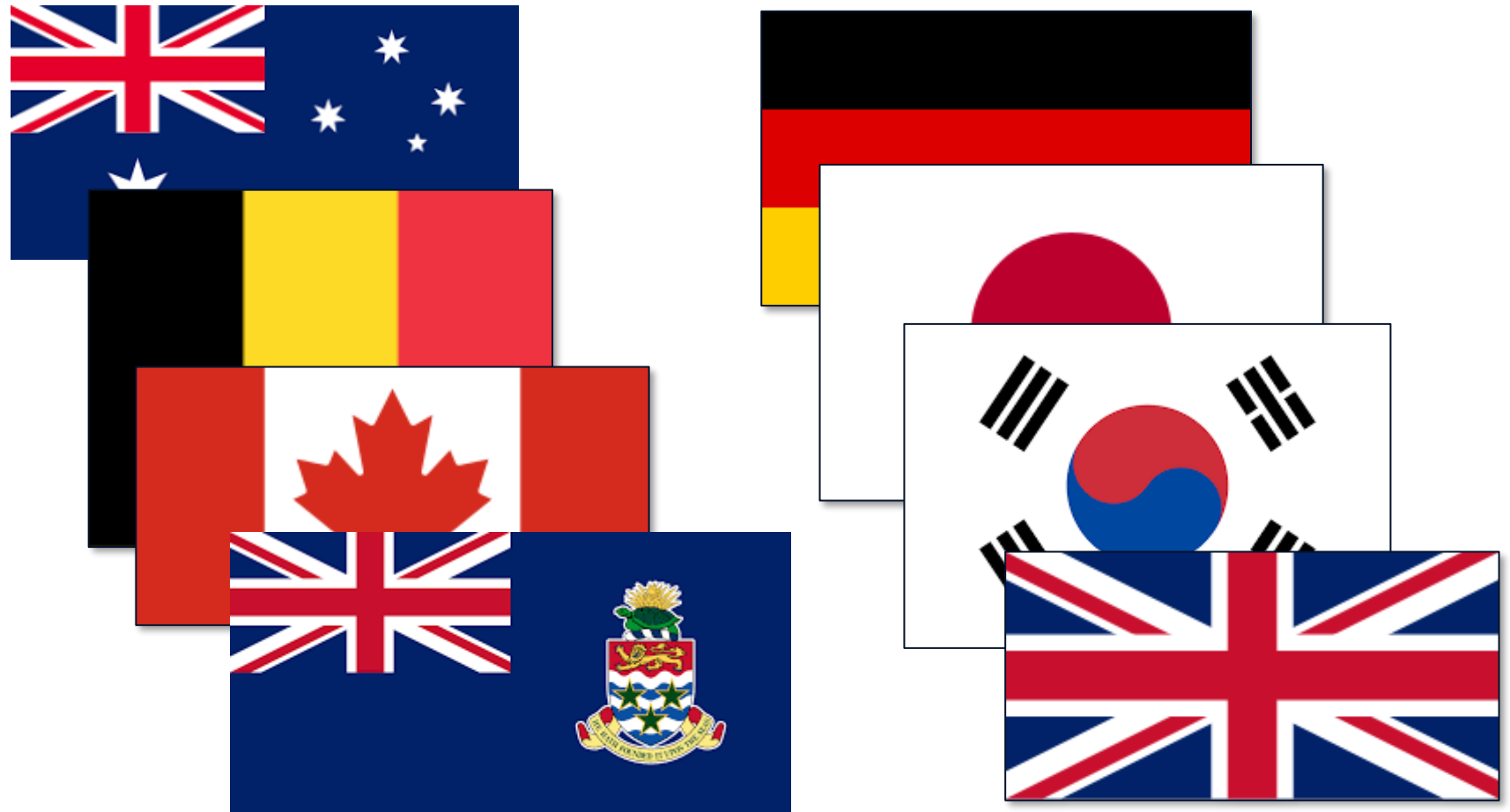
Stay tuned for details about the ESIG
Denver Workshop
June 15-17

Thanks to our workshop sponsors!!



Welcome to our international participants!

- Australia
- Belgium
- Canada
- Cayman Islands
- Germany
- Japan
- Korea
- United Kingdom





Thank You

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