Acadia Center

Advancing the Clean Energy Future

Clean Energy, Climate and Consumers: Building a Responsive, Reliable and Clean Grid for 2030 and Beyond

Restructuring Roundtable

March 22, 2024

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Boston, MA • Hartford, CT • New York, NY • Providence, RI • Rockport, ME

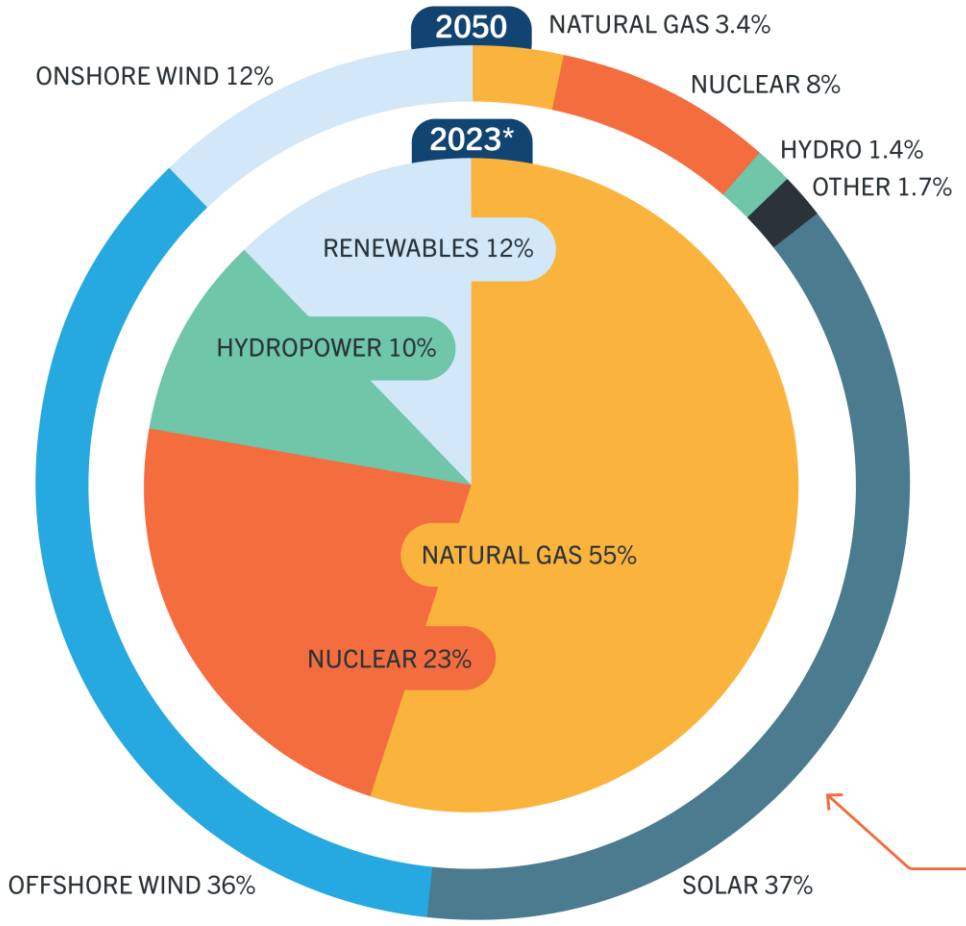
OUR FUTURE MUST BE RELIABLE, RENEWABLE and EQUITABLE

- **The Region Faces a Historic Electrification Challenge**
  - Solving for electrification, climate, consumers and equity– with reliability
  - Scale requires a focus on public engagement, transparency, and inclusive governance
- **Scale and Time: Markets Need To Support Clean Energy**
  - Accurately value clean energy vs. fossil generation
  - GETs must be deployed at scale
  - High Reliance on NG is a reliability risk and cost volatility factor
- **Broaden the Perspective on Geography: Coordinate with Our Neighbors**
  - Inter-regional coordination: mutual benefits
  - Northeast Grid Planning Forum Project

THE REGION FACES A HISTORIC CHALLENGE:

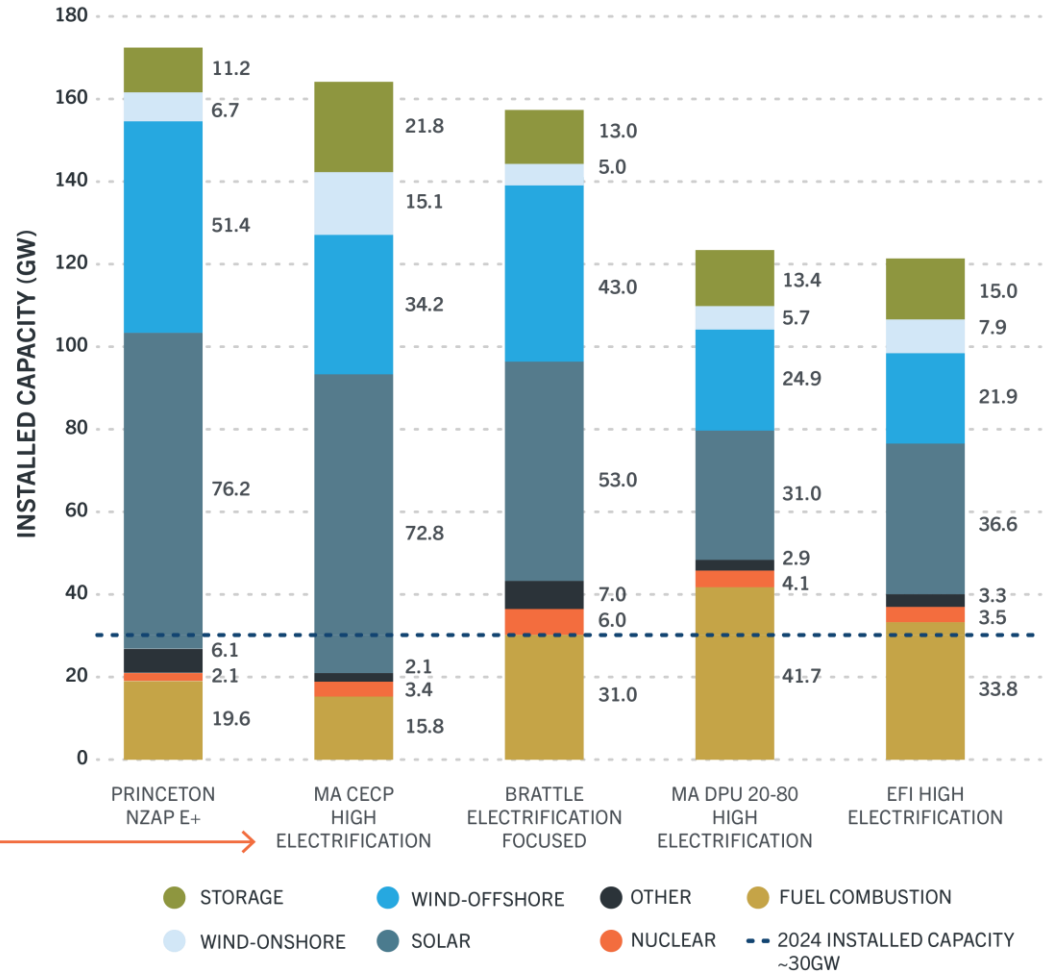
A glaring gap between current progress and future needs

Energy Generation Resource Mix (% of MWh)



*Does not include net imports over external ties.

Installed 2050 New England Capacity by Resource Type: 5-Study Comparison



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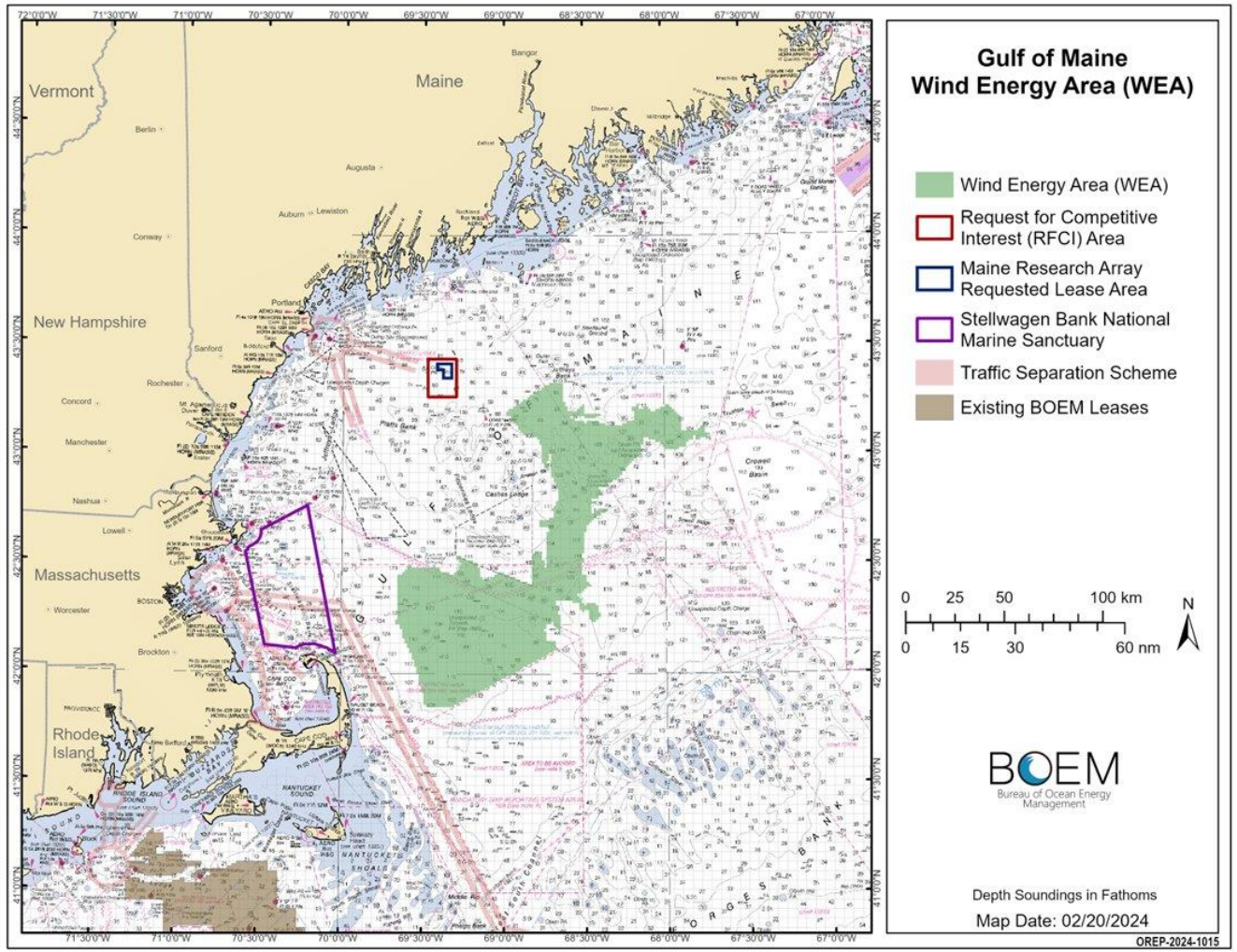
SCALE AND TIME: MARKETS NEED TO ADVANCE CLEAN ENERGY RESOURCES



Overreliance on Fossil Fuels is Unreliable and Imposes Cost Volatility

- Price fluctuations (January 2023)
- Supply vulnerability

Design Tomorrow's Markets for a Clean Energy Future

- BOEM: Gulf of Maine could double current capacity ~30GW
- 10s of GW of Distributed Solar, Storage, Wind and Flexible Demand

Resource Capacity Accreditation (RCA), and Prompt and Seasonal Capacity Market

- Mystic Station safe retirement (ISO-NE/EPRI, 2023): turning point
- Market must fully value clean resources, allow swift entry

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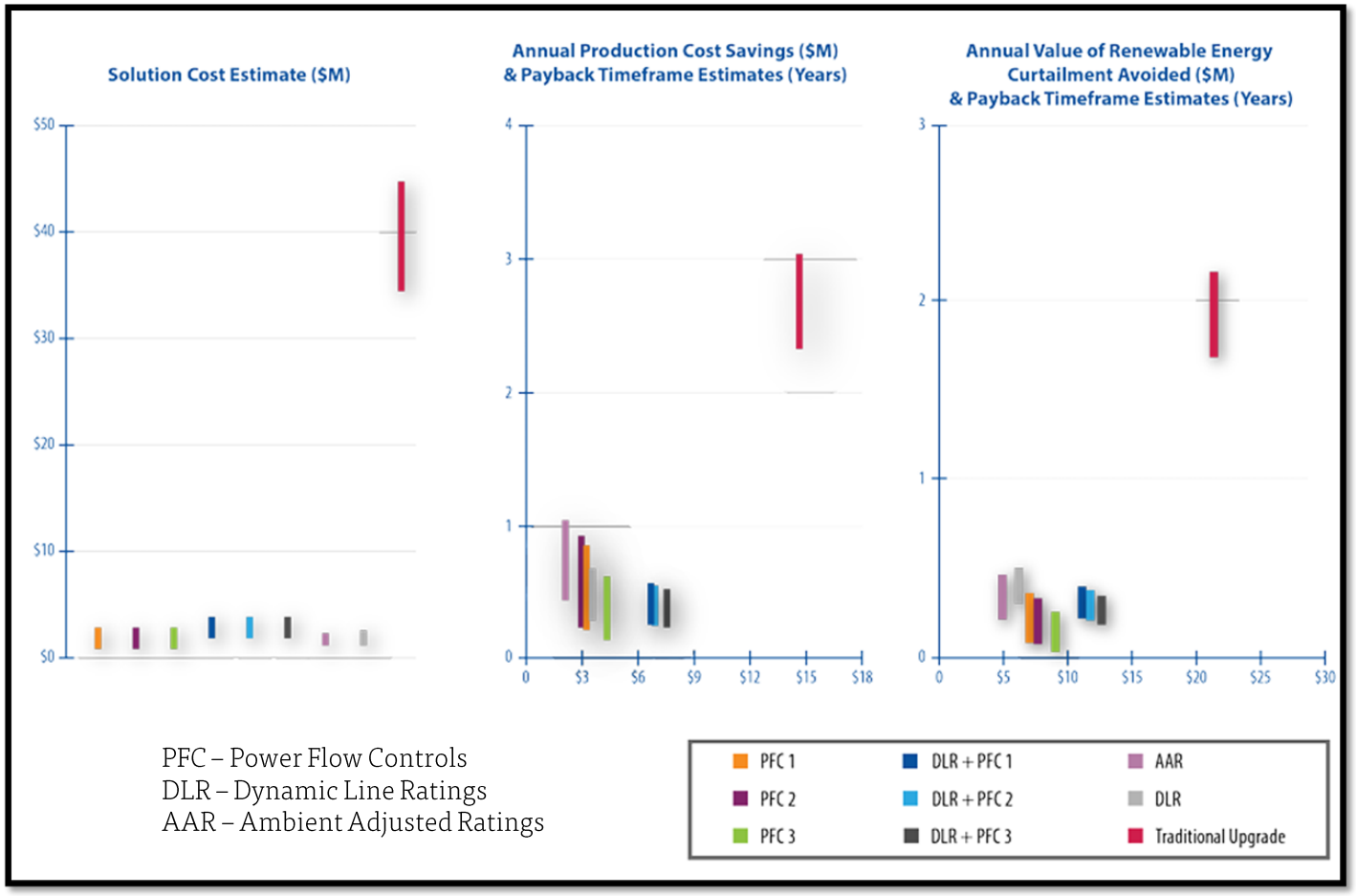
SCALE AND TIME: TRANSMISSION AND SYSTEM EFFICIENCY

Improve efficiency, reduce costs



Idaho National Lab (INL) evaluation of GETs in ISO-NE
https://inldigitallibrary.inl.gov/sites/sti/sti/Sort_65751.pdf

Grid Enhancing Technologies (GETs)

- Idaho National Lab (on ISO-NE), RMI (on PJM)
- FERC Order 881: DLR deserves support
- Asset condition upgrades: low-hanging fruit (e.g., Eversource X-178 line in NH)
- Pleased to see: use of topology optimization in ISO-NE outage planning (via MassCEC)

Transmission Planning

- Americans for Clean Energy Grid (ACEG): D+ rating to ISO-NE for transmission planning
- "Phase 2" state cost-sharing transmission tariff updates are significant and very promising
- Advanced Energy United (AEU): D+ rating to ISO-NE for interconnection; delays = anti-competitive barriers to entry

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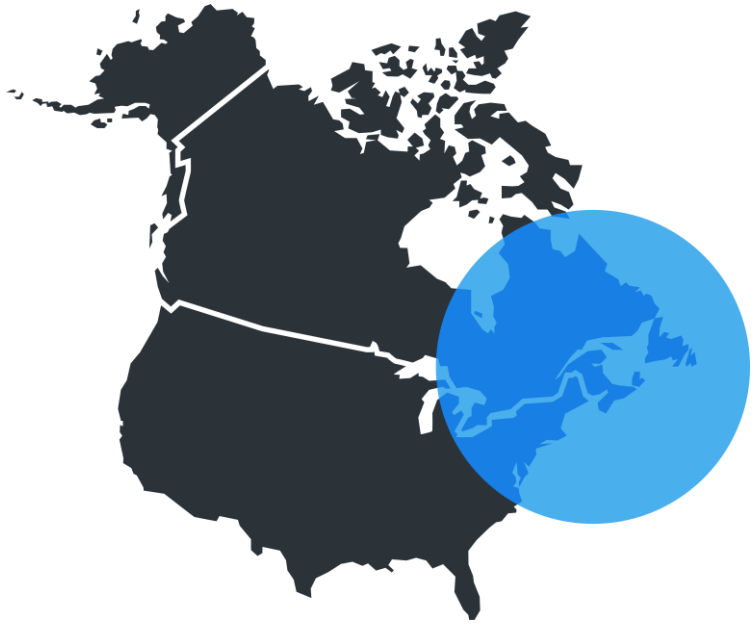
BROADEN THE PERSPECTIVE: The Northeast Grid Planning Forum

Inter-regional cooperation connects markets with resources



THREE ROUNDTABLES

- Environmental Justice & Community Mobilization
- Interregional Planning
- Clean Energy Procurement & Markets Development

SHARED BENEFITS ABOUND

Multilateral grid and energy system coordination and the potential for dynamic, two-way power flows between the provinces and states offers numerous benefits:

Improved power reliability and system balancing

Lower energy costs

Lower decarbonization costs

Faster displacement of polluting fossil fuels

Opportunities to expand investments in energy efficiency

Greater certainty over project development and costs

Improved planning, siting and permitting processes

Greater inclusion of communities and stakeholders who are often sidelined from energy system decision-making

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Sign up: acadiacenter.org/join

SOURCES AND LINKS

- **Slide 3**
  - 2023 generation figures – ISO-NE Resource Mix (link)
  - 2050 generation figures – Massachusetts Clean Energy and Climate Plan (CECP) (link)
  - Other studies: Princeton; Brattle; EFI; MA DPU 20-80
- **Slide 4**
  - US Bureau of Ocean Energy Management (BOEM) –Wind Energy Area (WEA) for Gulf of Maine (link)
- **Slide 5**
  - Advanced Energy United (AEU) Interconnection Scorecard (report; ISO-NE)
  - Idaho National Lab (INL) evaluation of GETs in ISO-NE (link)
  - Americans for a Clean Energy Grid (ACEG) transmission planning and development scorecard (link)
- **Slide 6**
  - Northeast Grid Planning Forum (NGPF) Framing Paper (link)