Photo: South Fork Wind Farm

Learning from the Experts Webinar Series

How Offshore Wind Contributes to Domestic Energy Security

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Center for Strategic and International Studies (CSIS)

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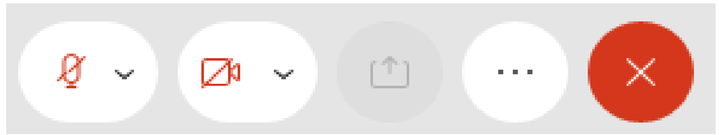

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Learning from the Experts

This webinar series is hosted by NYSERDA's offshore wind team and features experts in offshore wind technologies, development practices, and related research.

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Offshore Wind and Domestic Energy Security

Joseph Majkut, Center for Strategic and International Studies, NYSERDA Learn from the Experts, August 2025

Energy Security?

	Physical Security	Economic Security	Geopolitical Security
	Availability of energy on demand	Availability of energy at acceptable prices; role in supply chain	Resilience to shifting global security and political conditions
	86% of people live in net-importing countries; SPRs for supply disruption	Global marketplace for oil; LNG a globalizing market	Many geopolitical considerations
	All countries have some native renewable resource; power system performance an issue	Falling prices; Supply chain concentrated in China for almost everything	Cross-border electricity infrastructure; energy finance; trade policy

Offshore Resource Potential

- Fixed-bottom: 1.5 terawatts
- Floating Offshore: 2.8 terawatts

Source: NREL, Offshore Wind Resource Assessment

State Targets

Mismatch Deployment and Demand

- State Targets add over 46 GW through 2035
- Roughly 5 GW under construction now
  - Coastal Virginia: 2.6
  - Empire Wind 1: 800 MW
  - Sunrise Wind: 920 MW
  - Revolution Wind: 700 MW
- US demand growth: > 200 GW combined

TABLE 1

Offshore Wind Capacity Targets for Nine East Coast States

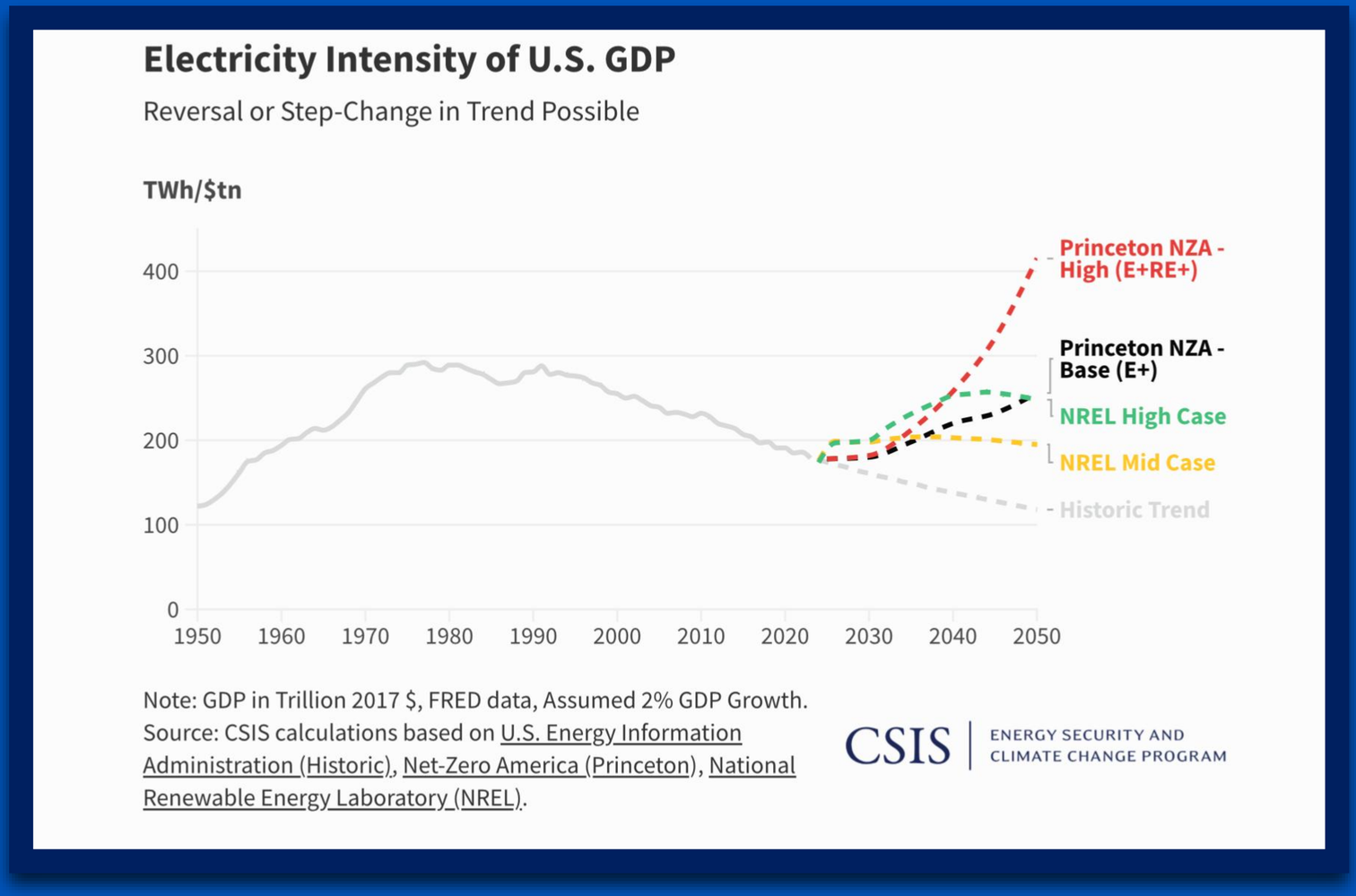
State	Current capacity (MW)	Capacity under development (MW)*	Capacity target (MW)**	Capacity target year	Target as a percentage of states' electricity demand
Massachusetts	0	3,200	5,600	2027	—
Connecticut	0	1,100	2,000	2030	—
Rhode Island	30	500	600–1,000	2030	30%
Noth Carolina	0	0	2,800	2030	—
Maryland	0	2,200	8,500	2031	—
Virgina	12	2,500	5,200	2034	—
New York	0	4,300	9,000	2035	30%
Louisiana	0	0	5,000	2035	—
New Jersey	0	3,700	7,500	2035	50%
Total	42	17,500	46,200	2035	—

*Projects under development have either begun construction or secured offtake.
**Total capacity target calculation uses 600 MW as Rhode Island's target.
Source: Data from *Wind Market Reports: 2022 Edition* (Washington, DC: U.S. Department of Energy, August 2022), https://www.energy.gov/eere/wind/wind-market-reports-2022-edition#offshore, and *2023 Offshore Wind Market Report* (Washington, DC: American Clean Power Association, May 2023), https://cleanpower.org/resources/offshore-wind-market-report-2023/#download.

CSIS | ENERGY SECURITY AND CLIMATE CHANGE PROGRAM

An Electric Economy

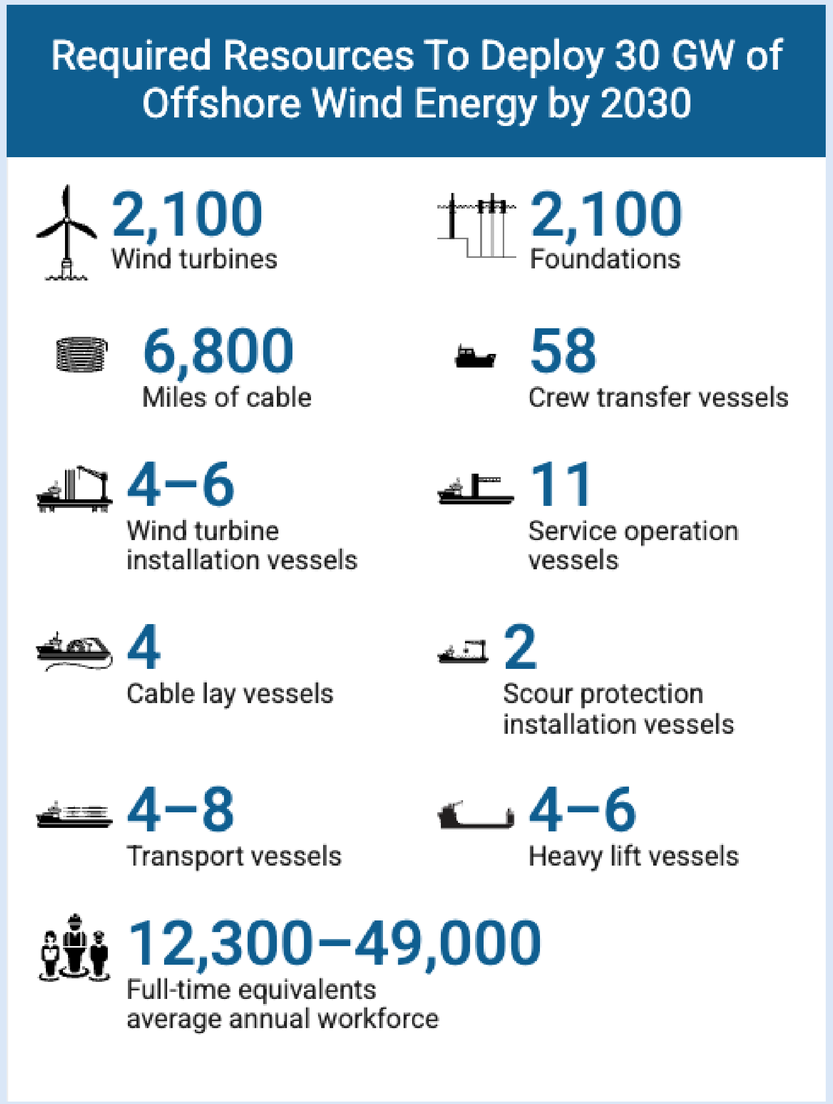
Economic security will rely on a thriving power sector



Supply Chain

Short Supply chain

- Security
- Lower-volatility
- Technical Capacity
- Export Potential



Source: NREL, Supply Chain Road Map for Offshore Wind

Supply Chain Development

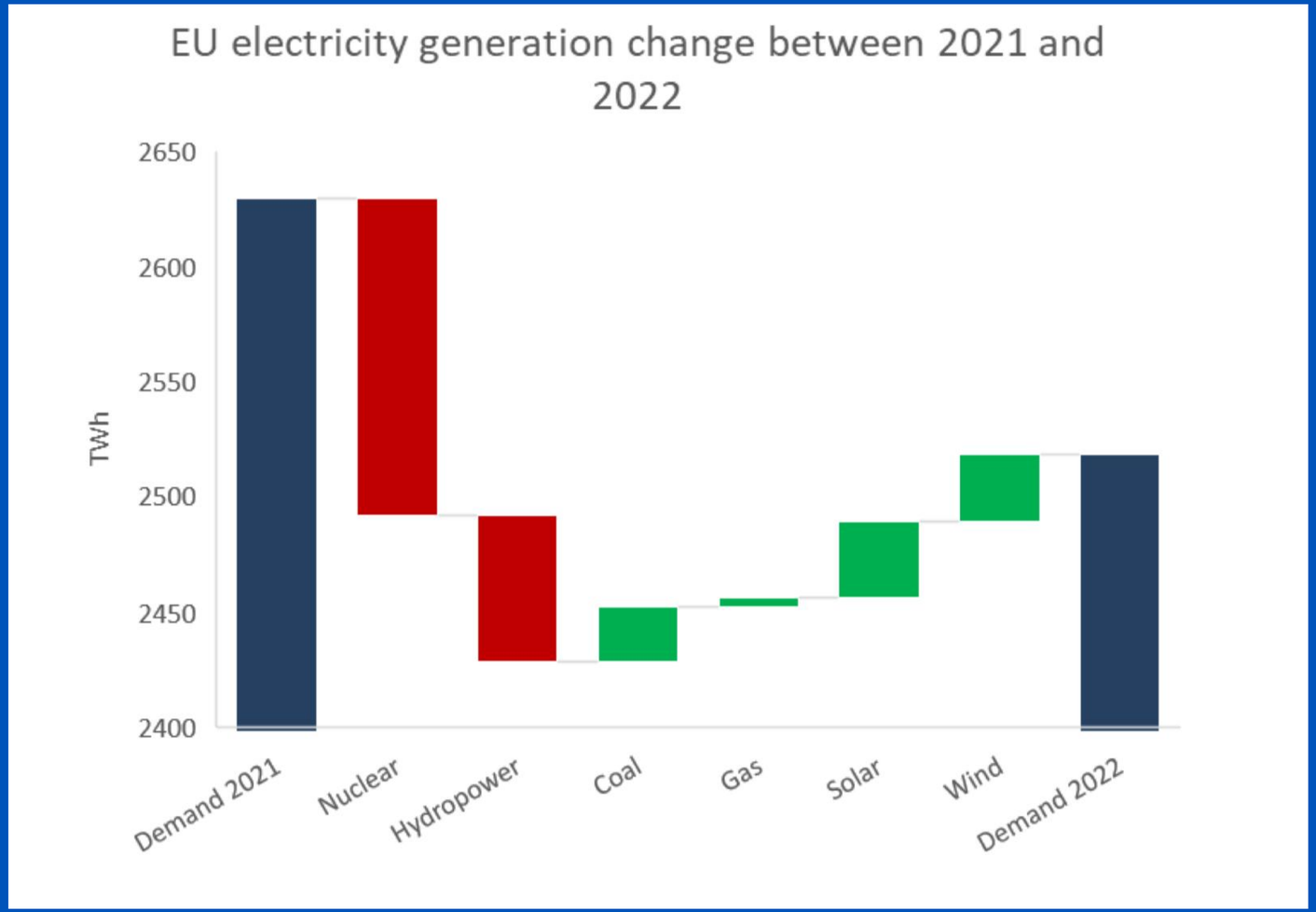
Charybdis

- First Jones Act-Compliant installation vessel
- Dominion investment
- 2.6 GW Coastal Virginia Offshore Wind

Europe 2021-2023

An expensive triumph

- Precipitated by Ukraine invasion, over-reliance on Russian gas supply. Exacerbated by low hydro and nuclear capacity factor.
- Europe sought to maintain security by reducing demand, buying LNG, and deploying renewables
- Long-term aims to accelerate transition, limit LNG (too expensive), and purchase clean hydrogen

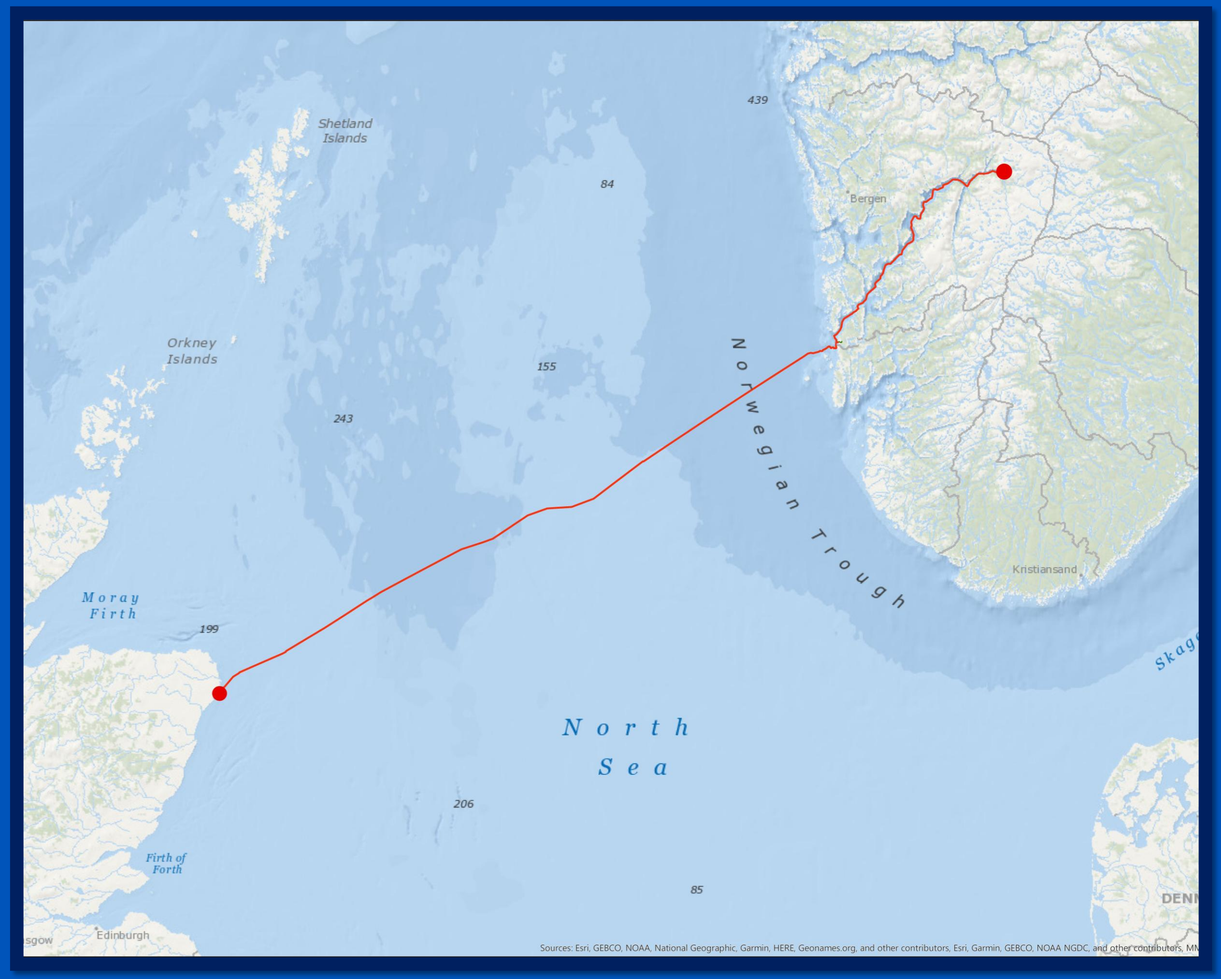


Source: CSIS, Power Plays

Geopolitics

Of electricity trade

“It is important for the government to ensure that we have a power system that can at all times fulfill the basic needs of power supply… We need this hydro power and do not want to open it up for more exports” — Terje Aasland, Oil and Energy Minister, Norway (2023)



Final Thoughts

Both an opportunity and a barrier

- Offshore wind helps align energy security with decarbonization
- Low-carbon world is not without energy security concerns or geopolitics
    - Supply chain concentration hard to accept, but persistent
    - Electricity systems more essential and electricity trade quite geopolitical
- Offshore wind an important tool, but need to resolve costs

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