



Uncertainties Facing the Use, Construction, and Inspection of Offshore Wind Vessels

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Legal Overview & Implications

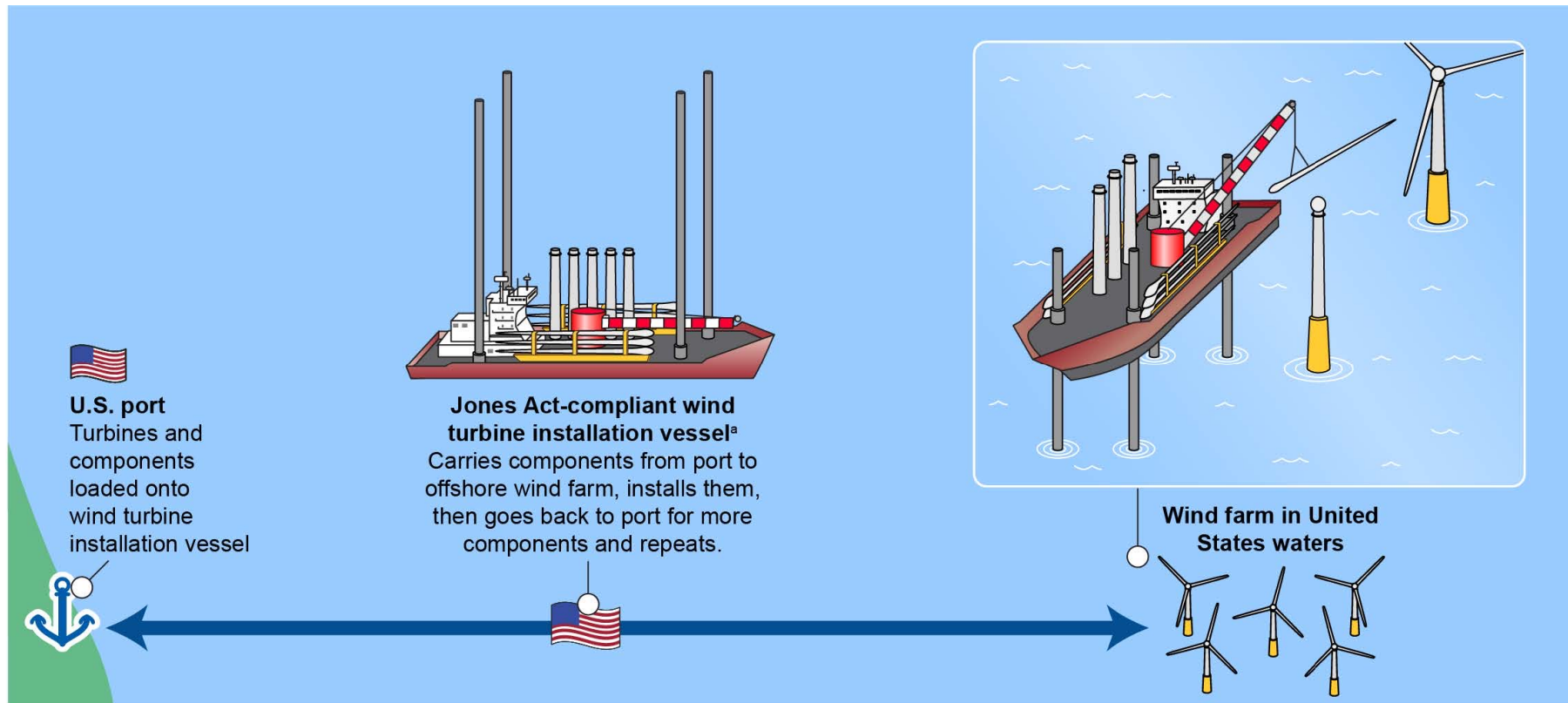
- Vessels carrying merchandise or passengers between two U.S. points must be built and registered in the U.S.
- Foreign vessels may be used for construction activities.
- The U.S. does not have sufficient vessel capacity or infrastructure to support wind development on a wider scale.



The Jones Act

Approaches to Offshore Wind Installation

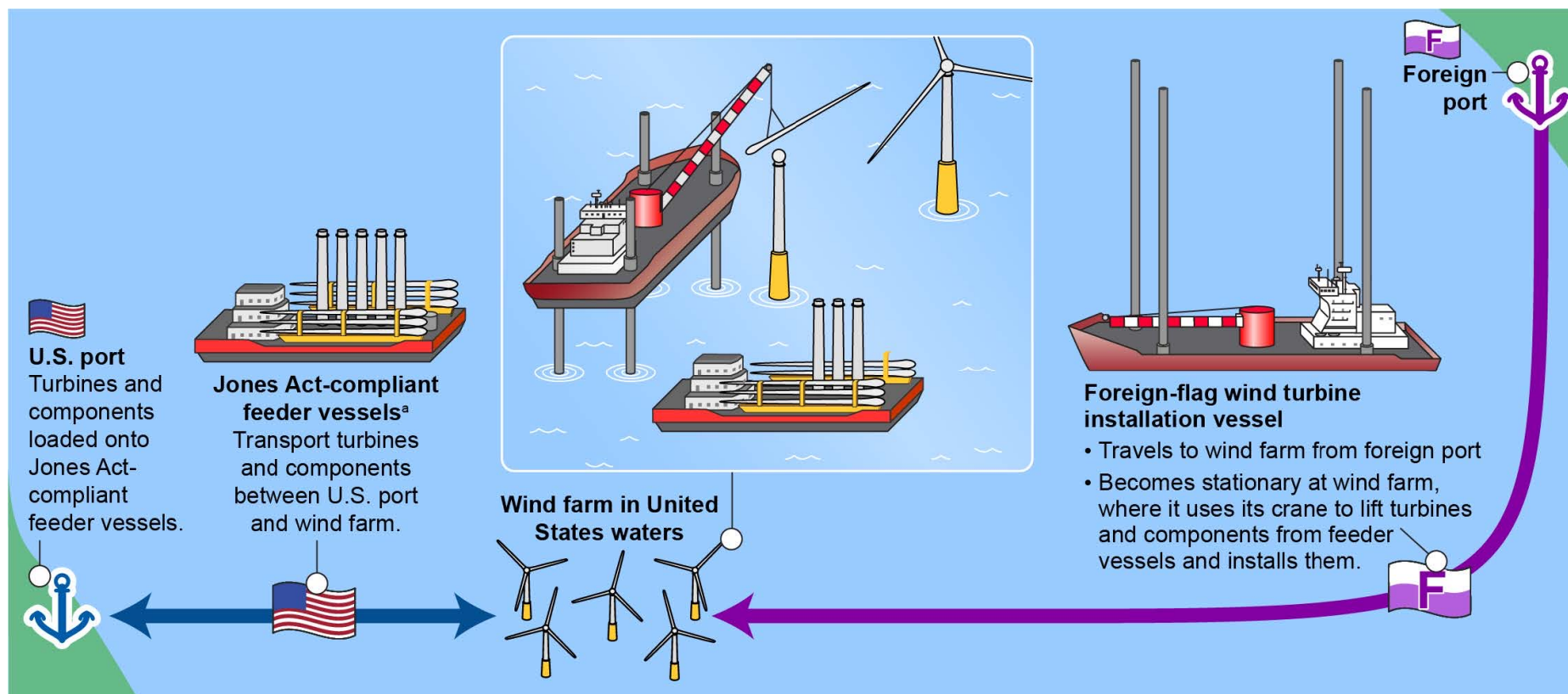
➤ Wind Turbine Installation Vessel



Source: GAO. | GAO-21-153

Approaches to Offshore Wind Installation (cont'd)

➤ Feeder Vessels



Source: GAO. | GAO-21-153

Operations and Maintenance Vessels

➤ Crew Transfer Vessels



➤ Service Operations Vessels



Stakeholders Cited Multiple Challenges Related to Jones Act-Compliant Vessels for Offshore Wind

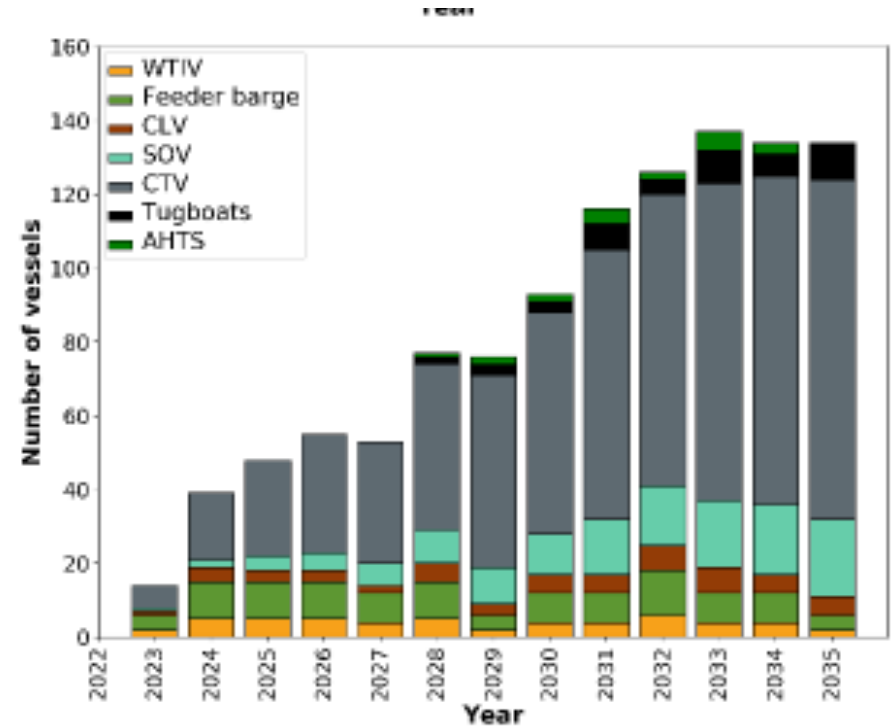
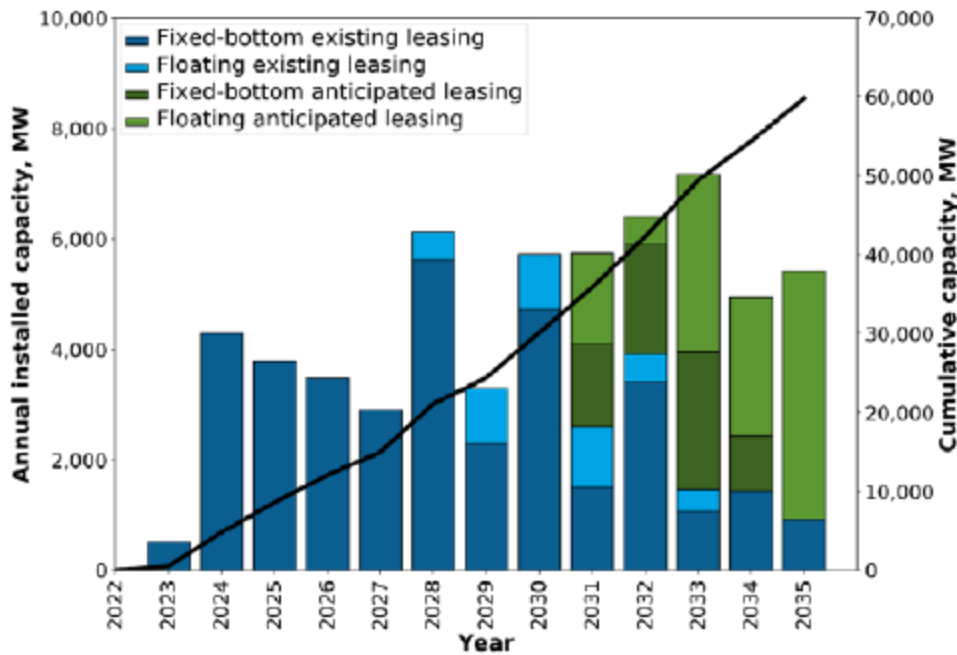
- Vessel contracting
- Potential obsolescence
- Installation approach and vessel needs
- Port limitations
- Vessel workforce



Source: DJ/stock.adobe.com.

Offshore Wind Energy Growth

- Achieving "30 by 30" will require dramatically increasing the number of vessels to support the industry



WTIV = wind turbine installation vessel
 CLV = cable lay vessel
 SOV = service operation vessel
 CTV = crew transfer vessel
 AHTS = anchor handling tug supply

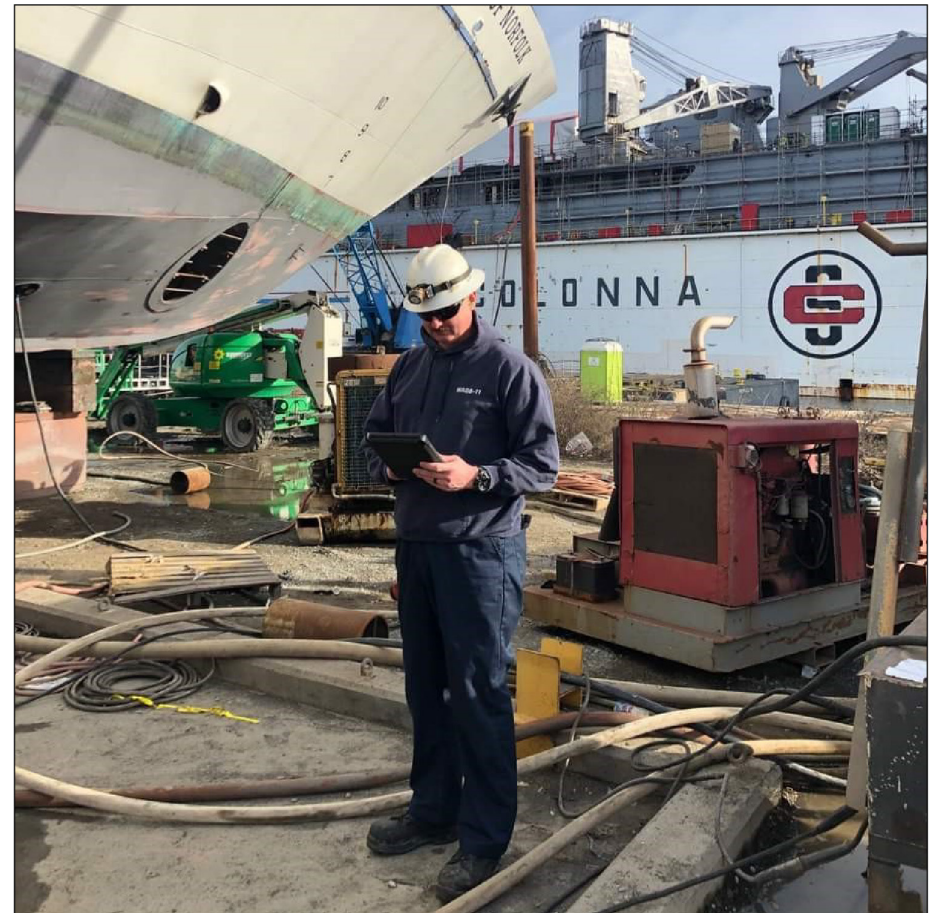
Availability of Offshore Vessels

Lack of certain vessels poses a risk to achieving the national offshore wind energy target

Vessel Type	Estimated Cost	Estimated Construction Time	# Existing	Estimated Peak Demand to 2030	Risk to 30-GW Target
U.S.-dedicated WTIV	\$250–\$500 million	3 years	0 (1 under construction)	5	
CLV	\$250 million	3 years	0	4	
Feeder barge/vessel	\$150–\$200 million new, \$10–\$20 million retrofit	Depends on design	20 jack-ups, 44 barges	10	
SOV	\$50–\$100 million new, \$10–\$50 million retrofit	2-3 years	0 (2 under construction, multiple oil and gas vessels which could be adapted)	13+	
CTV	\$5–\$10 million	1- 2 years	3	58	
Scour protection vessel	\$200 million	3 years	0 (1 under construction)	2	
Heavy lift vessel	Depends on design		18	Depends on installation strategy	
Anchor handling tug supply vessel	\$100 - \$200 million	2 years	Limited supply	2	

Coast Guard's Role

- Coast Guard inspects U.S. vessels
 - during construction
 - annually while in operation
- “Offshore Supply Vessels” require special certifications

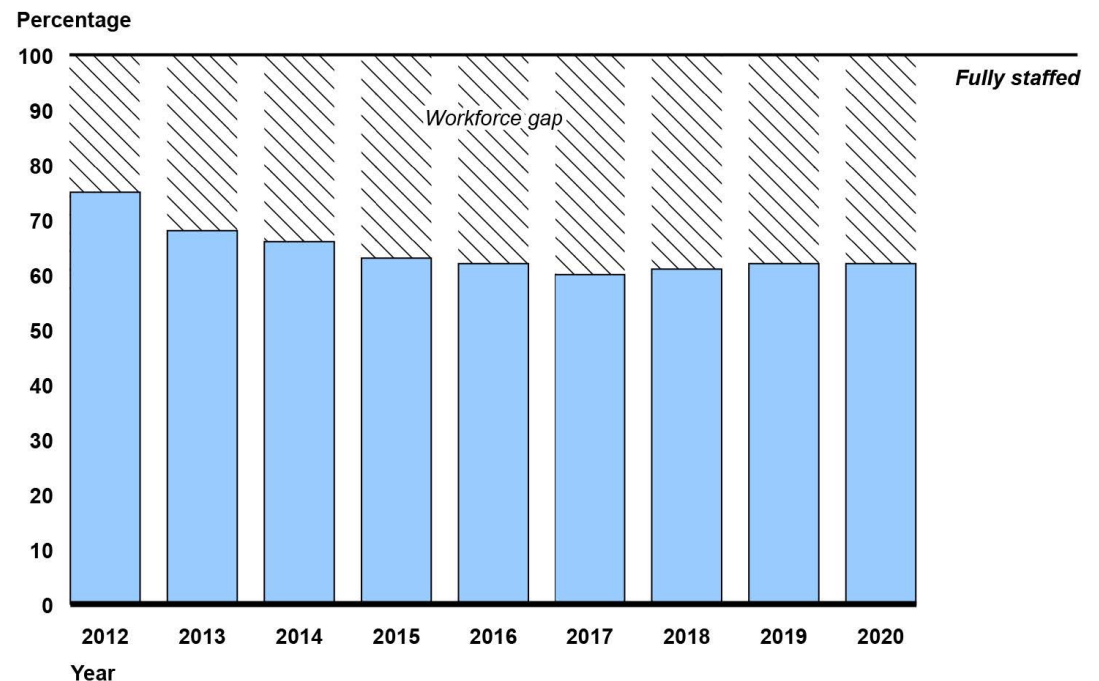


Source: U.S. Coast Guard. | GAO-22-104465

Coast Guard Resource Uncertainties

- Service member shortfall of 3,500; recruiting targets missed in recent years (GAO-23-106750)
- Marine inspector workforce shortage (GAO-22-104465)
- No forecasting of demand for offshore energy industry

Coast Guard Marine Inspector Workforce Gap

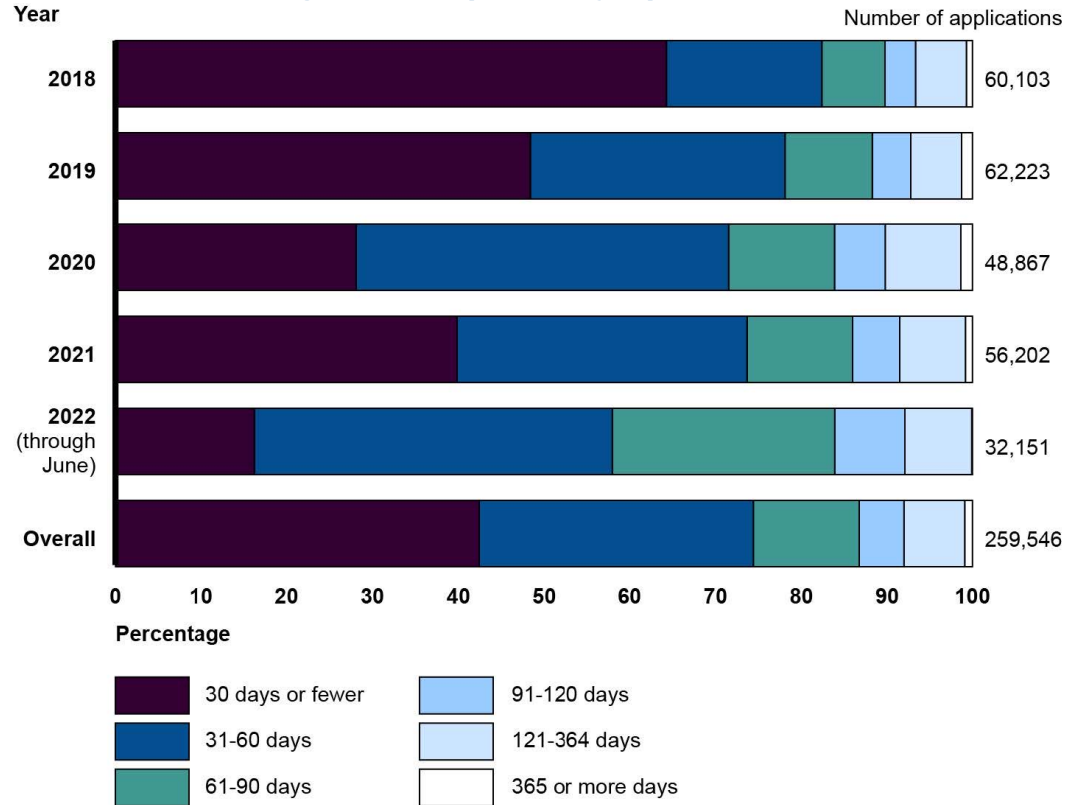


Source: GAO analysis of U.S. Coast Guard Sector Staffing Model data. | GAO-22-104465

Merchant Mariner Credentialing

- US has a shortage of mariners with offshore wind experience.
- Coast Guard issues credentials to qualified mariners.
- 25% of credentials took longer than 60 days to process.

Percentage of Credentials Issued by Overall Processing Time (in Days)



GAO-23-106629

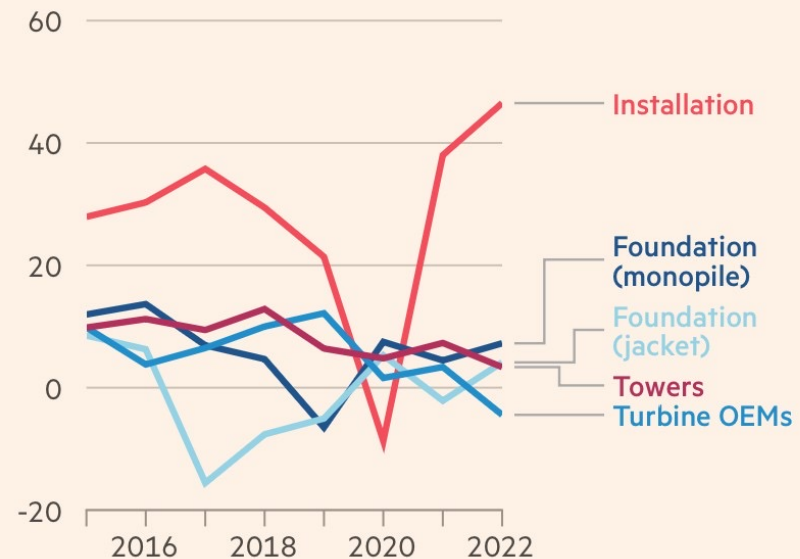
Source: GAO analysis of Coast Guard merchant mariner credentialing data. | GAO-23-106629

Managing Uncertainties

- Federal programs
- Congressional considerations
- Coast Guard strategic planning & performance

Offshore wind supply chain struggles

Margins in the supply chain fell between 2015-2022 (average ebitda margin, ex China, %)



FINANCIAL TIMES

Source: Wood Mackenzie

Questions?





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