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Buying Out the Breeze: Inside the Billion-Dollar Dismantling of U.S. Offshore Wind

Environment * Climate Change * Conservation

Introduction: Federal Policy Reversals and the $928 Million Lease Buyout

In early 2026, the U.S. offshore wind sector experienced an unprecedented regulatory shock. Originally anchored by federal targets of 30 GW by 2030, the industry confronted a sweeping reversal on January 20, 2025, when an executive memorandum declared a national energy emergency.[1][3] Under the Outer Continental Shelf Lands Act, the administration withdrew unleased federal waters and froze permits pending reviews by the Department of the Interior (DOI), Department of Defense (DoD), Department of Energy (DOE), and National Oceanic and Atmospheric Administration (NOAA).[5][8] On December 22, 2025, the DOI issued stop-work orders against five active projects -- Vineyard Wind 1, Revolution Wind, Coastal Virginia Offshore Wind (CVOW), Sunrise Wind, and Empire Wind 1 -- citing classified DoD radar reports.[1][6]

After federal courts enjoined those halts in early 2026, the executive branch pivoted to taxpayer-funded buyouts.[3] Following initial March 2026 disclosures, the DOI and TotalEnergies formally announced a $928 million settlement on March 23, 2026, canceling two 2022 leases: the ~3.0 GW Attentive Energy project in the New York Bight (OCS-A 0538, $795 million bid) and the ~1.2 GW Carolina Long Bay project off North Carolina (OCS-A 0545, $160 million bid, $133 million payout) -- prompting federal lawsuits from state attorneys general challenging the legality of the lease cancellation.[3][4][9][10][30]

| Project Name | | Location | | Proposed Capacity | | Estimated Homes Powered | | Original Lease Cost (2022) | | Finalized Federal Payout (2026) |

| Attentive Energy | | New York Bight (NY/NJ) | | ~3.0 Gigawatts | | > 1,000,000 | | $795 Million | | $795 Million |

| Carolina Long Bay | | Wilmington East (NC) | | ~1.2 Gigawatts | | ~ 300,000 | | $160 Million | | $133 Million |

| Combined Total | | United States Atlantic Coast | | ~4.2 Gigawatts | | > 1,300,000 | | $955 Million | | $928 Million |

Table 1: Financial terms of the March 2026 federal offshore wind lease settlement with TotalEnergies.[3][4][10]

The settlement obligates TotalEnergies to redirect capital into U.S. oil and Texas liquefied natural gas (LNG) infrastructure, including Cameron LNG (13.5 Mtpa) and Trains 1 through 4 of Rio Grande LNG.[3][4][11] Whereas offshore wind averages lifecycle emissions of 10-15 gCO2e/kWh, full operation of Rio Grande LNG is projected to emit ~191 million tons of carbon dioxide equivalent annually, amplifying greenhouse gas accumulation and planetary radiative forcing.[11][12]

Aerodynamic Physics of Offshore Extraction and the Betz Limit

Modern 12-15 MW offshore turbines feature rotor diameters exceeding 250 meters and hub heights above 200 meters.[12][13] Mechanical power extraction follows P = (1/2) A v3 Cp, where is air density, A is rotor swept area, v is wind velocity, and Cp is the power coefficient.[14] Because power scales with the cube of velocity (v3) and marine boundary layers lack topographic friction, oceanic winds run 25-40% stronger and steadier than onshore winds.[12][14]

| Wind Resource Class | | Minimum Wind Speed (m/s) | | Maximum Wind Speed (m/s) | | Average Wind Speed (m/s) | | Percentile Range of Total Resource Potential |

| Class 1 | | 9.98 | | 10.33 | | 10.24 | | < 2% |

| Class 2 | | 9.31 | | 9.98 | | 9.82 | | 2% - 4% |

| Class 3 | | 9.13 | | 9.31 | | 9.20 | | 4% - 8% |

| Class 4 | | 8.85 | | 9.13 | | 9.00 | | 8% - 16% |

| Class 5 | | 7.94 | | 8.85 | | 8.40 | | 16% - 32% |

| Class 6 | | 7.07 | | 7.93 | | 7.44 | | 32% - 64% |

| Class 7 | | 6.00 | | 7.07 | | 6.56 | | 64% - 100% |

Table 2: National Laboratory of the Rockies (NLR / NREL) offshore wind resource classes.[13]

By Betz's law (1919), extracting kinetic energy decelerates airflow across the actuator disk; optimal deceleration occurs when downstream velocity equals one-third of upstream velocity, fixing the maximum theoretical extraction -- the Betz limit -- at Cp,max = (16/27) ~ 59.3%.[14][15] Modern offshore turbines achieve 75-80% of the Betz limit aerodynamically, converting 45-50% of wind kinetic energy into grid electricity.[14][15]

Capacity Factors, LCOE Economics, and NYISO Grid Reliability Deficits

Modern offshore wind arrays achieve capacity factors of 35-50% (up to 65% in optimal North Atlantic sites), outperforming onshore wind (25-35%) and utility solar PV (20-30%) with zero fuel cost volatility.[12][16]

| Generation Source | | Average Capacity Factor | | LCOE Estimate (2025) per MWh | | Carbon Emissions (gCO2/kWh) |

| Offshore Wind | | 35% - 50% (Up to 65% optimal) | | $70 - $140 | | 10 - 15 (Lifecycle) |

| Onshore Wind | | 25% - 35% | | $30 - $60 | | 8 - 12 (Lifecycle) |

| Solar PV (Utility) | | 20% - 30% | | $25 - $50 | | 15 - 25 (Lifecycle) |

| Natural Gas (CCGT) | | Dispatchable (Variable) | | $45 - $75 | | 400 - 500 (Direct) |

| Coal | | Dispatchable (Variable) | | $60 - $100 | | 800 - 1,000 (Direct) |

Table 3: Comparative capacity factors, Levelized Cost of Energy (LCOE), and carbon intensity.[12][16]

The New York Independent System Operator (NYISO) 2025-2030 Short-Term Assessment of Reliability (STAR) reports warn of transmission security deficits in New York City starting in summer 2026, Long Island by 2027, and the Lower Hudson Valley by 2030 due to rising demand and peaker retirements.[18][19] Canceling Attentive Energy One -- designed to inject 1,275 MW into the Rainey 345 kV substation in Queens -- pressures regulators to extend polluting urban combustion peakers.[9][18][20]

Radar Clutter Physics, Interagency Mitigation, and Marine Mammal Safeguards

While turbine blades reaching 200 mph tip speeds generate Doppler clutter, testing by the interagency Wind Turbine Radar Interference Mitigation (WTRIM) working group (DOE, DoD, FAA, and Sandia) confirms signatures are resolvable via adaptive Doppler filtering, infill radars, and AIS integration -- while fixed subsea foundations pose negligible issues for military sonar.[6][7][21][22]

| Radar Type | | Primary Use Case | | Validated Mitigation Technologies |

| Air Navigation & Defense | | Air traffic control, military tracking | | Dynamic signal filtering, hardware upgrades, infill radar deployment, layout adjustments |

| Marine Vessel Radar | | Ship navigation, collision avoidance | | Operator training, antenna relocation, Automatic Identification System (AIS) integration |

| Coastal High Frequency | | Coast Guard search and rescue | | Sweep rate tuning, specific Doppler spectrum filtering, supplementary sensors on turbine platforms |

| Weather Radars | | Severe weather forecasting | | Pre-emptive turbine shutdown protocols during severe events, combining data streams |

Table 4: Radar systems impacted by offshore wind arrays and validated WTRIM mitigations.[21][22][23]

Under the 2024 BOEM-NOAA Fisheries strategy, protections for the endangered North Atlantic right whale (~360-380 individuals) mandate passive acoustic monitoring, vessel speed limits, and quiet gravity-based or suction-bucket foundations, while biologists emphasize that climate change shifting copepod prey remains the primary existential threat to the marine ecosystem.[2][24][25]

Judicial Injunctions and 2026 Operational Milestones

Following the December 2025 stop-work orders -- which contributed to a $955 million impairment on Equinor's Empire Wind and $575 million for rsted -- federal district courts in early 2026 granted preliminary injunctions across all five active projects, ruling the government failed to substantiate an unmitigable security threat.[1][26][27][29]

| Project Name | | Primary Developer | | Capacity | | Legal & Operational Status (November 2026) |

| Vineyard Wind 1 | | Avangrid / CIP | | 800 MW | | Complete commercial buildout reached and fully operational.[28][31] |

| Revolution Wind | | rsted / Skyborn | | 704 MW | | Final turbine installed Sept 2026; fully operational by Oct 2026.[31] |

| Empire Wind 1 | | Equinor | | 810 MW | | All 54 foundations & substation installed; first power delayed toward 2027.[32] |

| Sunrise Wind | | rsted | | 924 MW | | Injunction granted; offshore construction ongoing. |

| Coastal Virginia (CVOW) | | Dominion Energy | | 2.6 GW | | Injunction granted; offshore construction ongoing. |

| SouthCoast Wind | | Ocean Winds | | 2.4 GW | | Delayed / in multi-year slowdown amid permit-review litigation & PPA exits.[29][33] |

Table 5: Legal and operational status of major U.S. Atlantic offshore wind projects as of November 2026.[1][17][29][31][32][33]

Protected by injunctions, the 800 MW Vineyard Wind 1 array and the 704 MW Revolution Wind array both achieved full commercial buildout in 2026 (with Revolution Wind completing its final turbine in September and reaching full capacity in October 2026), delivering power across New England while saving ratepayers hundreds of millions of dollars annually.[17][28][31] Meanwhile, Empire Wind 1 completed installation of all 54 foundations and its offshore substation though first power slipped toward 2027, and SouthCoast Wind entered a multi-year slowdown.[32][33]

Conclusion: Sovereign Risk vs. Decarbonization Infrastructure

The finalized $928 million settlement canceling 4.2 GW of TotalEnergies offshore wind leases in favor of Texas LNG expansion illustrates how sovereign policy reversals disrupt clean energy infrastructure.[3][4] While courts protected 5.8 GW of active construction -- enabling Vineyard Wind 1 and Revolution Wind to reach full operation in late 2026 -- dismantling New York Bight leases compounds NYISO reliability deficits, invites multi-state litigation, and locks in substantial fossil carbon emissions.[11][18][30][31]

Updates... (Nov 21, 2026): Replaced the HTTP 403-blocked Regulations.gov attachment in Ref. 25 with peer-reviewed acoustic monitoring research (Palmer et al., Oct 1, 2021, JASA), replaced the commercial wind-energy tutorial in Ref. 14 and project page in Ref. 23 with peer-reviewed literature and the published National Academies report DOI, upgraded Refs. 5, 10, 18, and 28 to primary Federal Register, TotalEnergies, NYISO STAR, and Vineyard Gazette records, split grouped inline citations into 1:1 markers, and standardized reference list identifiers and exact publication dates across all 33 sources.

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