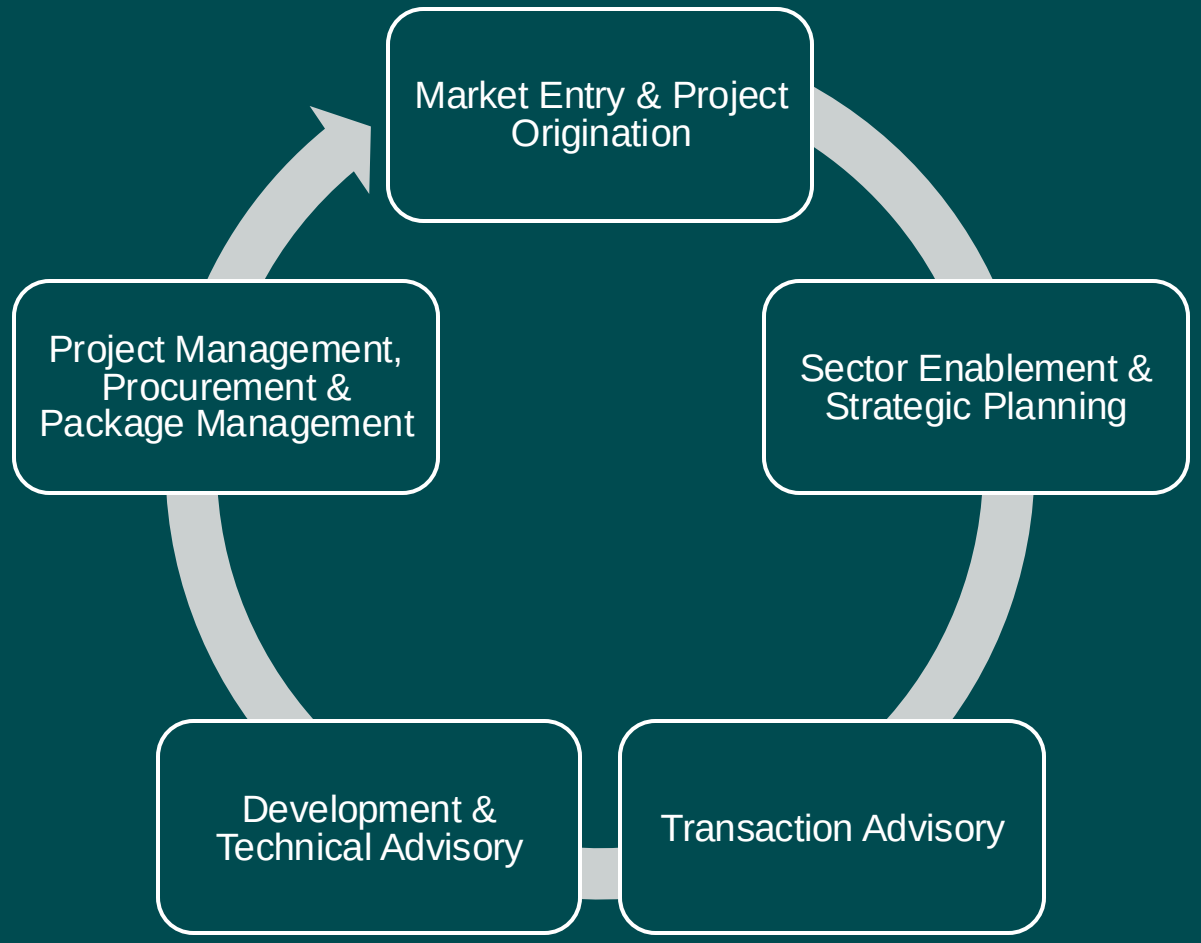
Early-Stage Advisory Best Practices for Offshore Wind

Lessons Learned, Pitfalls Avoided, and the Path to Success

27 February 2025

Venterra's Advisory Services



A holistic development approach

Giving your projects an economic edge, increasing value & supporting you through delivery

A data driven insight

Market intelligence informing decision making.

Hindsight – Insight - Foresight

Technical skills & experience to back up & deliver our advice

Confidence through managed risk and delivery capability to realise your investment & asset.

Agenda

Early-Stage Advisory Best Practices for Offshore Wind: Lessons Learned, Pitfalls Avoided, and the Path to Success

Early-stage decisions play a crucial role in the success of an offshore wind project. To help you avoid common pitfalls and accelerate progress, it's beneficial to discuss the experiences of those who have navigated similar challenges.

Three Success Stories

1. Invest in High-Quality Desktop Site Investigation Data
2. Conduct a Multi-Disciplinary Weighted Risk Analysis
3. Build cultural resources considerations into early environmental study protocols and plans

Three Mistakes to Avoid

1. Failing to Build Flexibility into PPA Bids
2. Perverse M&A Incentives Driving Unsustainable Deals
3. The Pitfalls of Radial Transmission in Offshore Wind

Best Practices to Emulate

venterra

Invest in High-Quality Desktop Site Investigation Data

By addressing potential challenges early, we avoided redundant studies, expedited application review, and are reducing overall project costs.

Diane Sullivan
Hecate Energy

Lesson: Investing in high quality early-stage desktop study provides a strong foundation for future work, reducing uncertainties before the more expensive fieldwork begins. This proactive approach streamlines permitting, minimizes risks, and ensures that future project phases—such as habitat mapping, environmental impact assessments (EIA), and engineering design—are based on accurate, well-vetted data.

Unsolicited Application for an Outer Continental Shelf Renewable Energy Lease

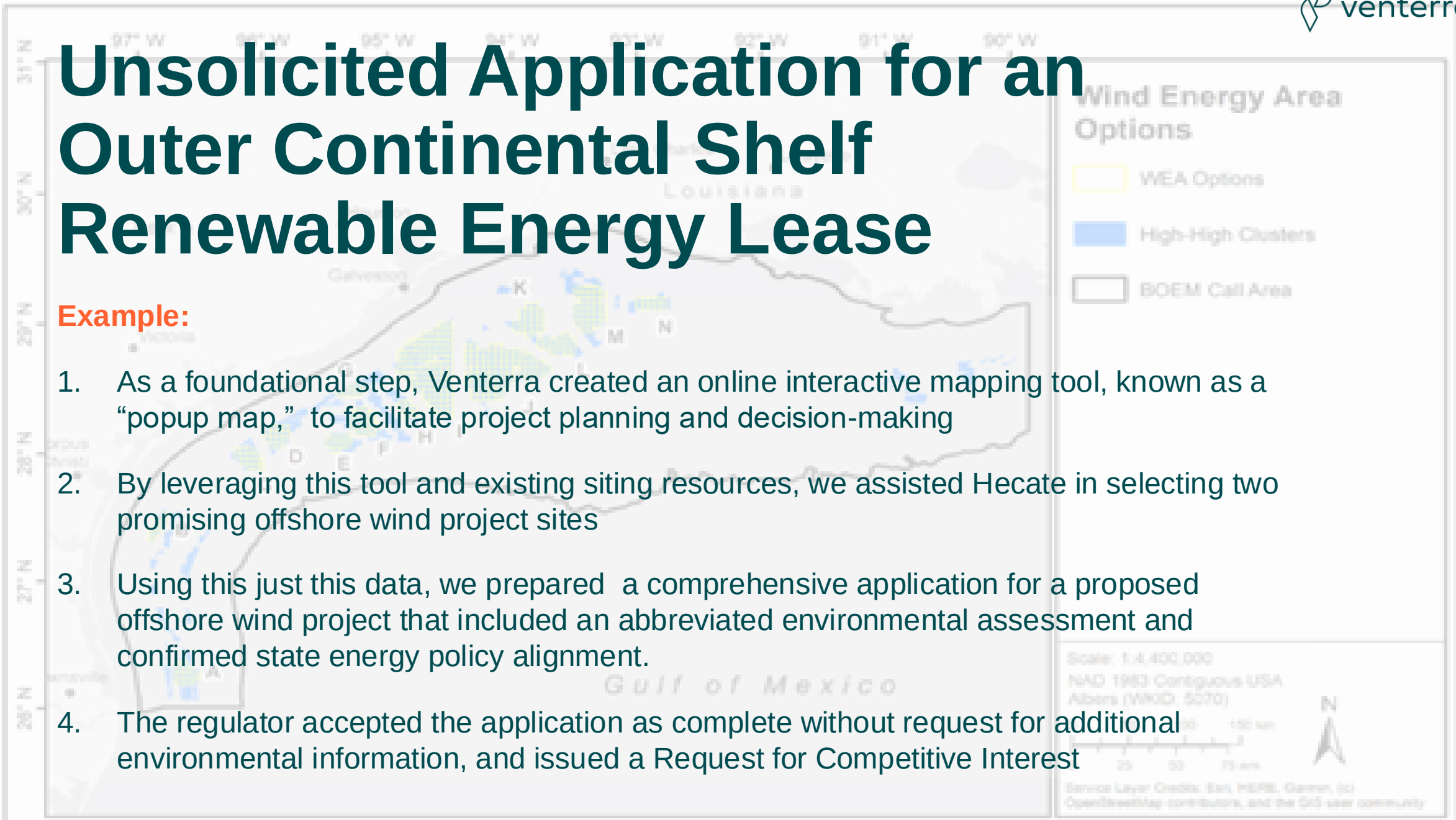
Example:

1. As a foundational step, Venterra created an online interactive mapping tool, known as a "popup map," to facilitate project planning and decision-making

2. By leveraging this tool and existing siting resources, we assisted Hecate in selecting two promising offshore wind project sites

3. Using this just this data, we prepared a comprehensive application for a proposed offshore wind project that included an abbreviated environmental assessment and confirmed state energy policy alignment.

4. The regulator accepted the application as complete without request for additional environmental information, and issued a Request for Competitive Interest



Example OSW Early-Stage Desktop Studies in Australia

2023: Confidential Client – Geotech/Geophysical Hunter Region NSW

- Desktop study carried out to assess geological, geophysical and other constraint conditions for a potential floating offshore wind site in Australia

2021 / 2022: Confidential Client – OWF Site Selection, Permitting and Technical Advisor

- Leeuwin, Midwest, Samphire, and Velella Projects
- GIS constraints analysis and site selection
- Refinement of areas and project description reports
- Stakeholder engagement
- Submission of Referral applications with local partners

2022 / 2023: Confidential Clients – UXO Survey

- UXO desktop identification and hazard assessment for various project sites in Australia

Conduct a Multi-Disciplinary Weighted Risk Analysis

Venterra and its expert team provided a comprehensive, data-driven risk assessment that was both insightful and actionable.

Marisa Guarinello,
Senior Director of Data Science

Lesson: A comprehensive risk assessment that integrates insights from multiple disciplines—environmental science, engineering, socioeconomics, and regulatory affairs—provides a more accurate picture of potential challenges before lease bidding. By weighting risks based on their likelihood and impact, developers can prioritize mitigation strategies and make informed decisions.

Morro Bay, California Wind Energy Area Risk Evaluation

Example: In the Morro Bay Wind Energy Area, Venterra and its team conducted a desktop risk assessment for Ocean Winds, including potential export cable routes and construction zones, evaluating design and permitting risks across multiple categories. By leveraging a multi-disciplinary approach, the study identified high-risk areas early in the process. This allowed Ocean Winds to anticipate challenges, refine their project strategy, and mitigate financial and permitting risks before selecting a site for lease acquisition and development.

Build cultural resources considerations into early environmental planning

Indigenous communities have timeless relationships with fisheries that include a culture of respect, stewardship, and sustainability.

Trish FernandezM.A.,
Anthropology
Principal, InContext

Lesson:

- Fisheries are cultural, as well as environmental and ecological resources to First Nations
- Job creation opportunities include employing First Nations fisheries in the planning and execution of fisheries monitoring, use vessels, and data sharing
- Not all First Nations have the same cultural priorities and fisheries of concern
- Species of concern to First Nations and regulatory agencies may not overlap
- Use of non-extractive monitoring methods as a preferred approach
- First Nations may appreciate technical assistance, training, or other capacity building to facilitate meaningful engagement

Cultural Consultation in Benthic Survey Protocol Development

Example:

1. Develop engagement strategy with the development team

2. Have a meeting with First Nations representatives to (1) solicit traditional science and perspectives for the benthic survey protocols and field sampling plans and (2) get input on whether there is a need for a need for training or other capacity building to comment on the results of the studies.

3. Incorporation of input into the proposed benthic survey protocols and field sampling plans for agency approval.

4. Regular communications, through channels established in coordination with the developer, regarding agency approval of proposed survey protocol and plan and survey implementation.

5. In coordination with the developer, post-survey presentation(s) to First Nations regarding the results of the benthic surveys, habitat mapping, and next steps.

The biggest mistake is to ignore international lessons learned

Failing to Build Flexibility into Power Purchase Agreement Bids

Squeezed by rising global supply costs, offshore wind developers are seeking new power contract terms on at least ten East Coast projects.

Eduardo Garcia
Reuters
9/2023

Lesson: The U.S. offshore wind industry failed to incorporate sufficient flexibility in Power Purchase Agreements (PPAs) to address supply chain constraints, inflation, and high interest rates. This rigidity led to project cancellations and financial struggles for developers. Regulators and policymakers must build realistic adaptability into contracts to ensure long-term project viability and industry growth.

PPA Policy Adjustments

Examples:

1. Indexation Mechanisms – Newer PPAs are incorporating inflation-adjustment clauses or pricing mechanisms tied to market indices to account for rising costs.
2. State Policy Adjustments – States like Massachusetts and New York have adjusted procurement processes, allowing developers to rebid projects or seek revised terms without penalties.
3. Federal Support & Tax Incentives – Expanded tax credits from the Inflation Reduction Act (IRA) and federal loan guarantees help offset higher financing costs and reduce risk.
4. Supply Chain Investments – Efforts to develop domestic manufacturing and infrastructure (e.g., ports, vessels) aim to reduce reliance on volatile global supply chains.
5. Flexible Contract Structures – New project bids are incorporating more adaptable contract structures, including milestone-based payments and contingency allowances.

Aligning M&A Incentives to Drive Smart, Sustainable Deals

The best M&A deals aren't just about closing—they're about creating long-term value. Misaligned incentives can blind teams to risks, leading to costly mistakes.

Harvard Business Review

Lesson: A major danger of creating perverse incentives to push M&A deals through is that it can skew the selection and judgment of those responsible for project reviews. If advisors, consultants, or internal teams are financially or professionally incentivized to close deals rather than critically assess risks, they may downplay uncertainties, overlook red flags, or provide overly optimistic analyses. This can lead to flawed decision-making, increased exposure to unforeseen liabilities, and, ultimately, deals that fail to deliver expected value.

Ensuring Proper Incentives

Example:

1. Balance Short-Term and Long-Term Incentives: Avoid deal-closing bonuses that overly emphasize completion rather than quality.

2. Ensure Independent Risk Assessment: Engage external auditors or consultants with no financial stake in deal completion.

3. Align Compensation with Risk Awareness: Reward teams for accurate risk identification, not just getting a deal done.

4. Encourage a Culture of Skepticism: Foster open debate and challenge processes within the M&A team.

The Pitfalls of Radial Transmission in Offshore Wind

A fragmented, radial approach to offshore wind transmission is inefficient and costly—shared infrastructure is the key to scaling the industry sustainably.

International Energy Agency (IEA)

Lesson: The reliance on radial transmission—where each offshore wind farm has its own direct connection to shore—can be inefficient, costly, and environmentally disruptive compared to shared transmission infrastructure. This fragmented approach leads to higher grid congestion, redundant infrastructure, and increased costs for consumers. In contrast, coordinated offshore grid planning with shared transmission networks can improve reliability, optimize power flows, and reduce environmental impacts.

Trend Toward Shared Transmission

Examples:

1. North Sea Wind Power Hub (NSWPH) Proposed hub-and-spoke model where artificial islands act as energy hubs connecting multiple offshore wind farms across Denmark, Germany, and the Netherlands.The power is transmitted via multi-terminal HVDC (high-voltage direct current).
2. German Offshore Grid Germany developed a clustered offshore grid where multiple wind farms connect to offshore converter stations that transmit power back to shore via shared HVDC links.
3. Kriegers Flak Combined Grid Solution Shared offshore grid connecting Danish and German offshore wind farms.Uses an interconnector to balance power flows between countries, improving grid stability.
4. UK Offshore Transmission Network Review UK is shifting from radial connections to a coordinated offshore transmission system to integrate multiple offshore wind projects efficiently.
5. New England Offshore Wind Transmission (Proposed) Proposal for a shared offshore grid off the U.S. East Coast, would replace radial connections with meshed offshore networks to optimize transmission.

Illustration by Joshua Bauer, NREL

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