DECISION ANALYSIS

Which development strategy to adopt for the international subsea energy and critical minerals network.

Case 2026-0070 | July 19, 2026

ENGAGEMENT SUMMARY

Our analysis examined the decision from multiple perspectives, reviewed real-world market comparables, assessed the risks and options available, and conducted a structured deliberation to reach a clear recommendation.

Our recommendation is stated on the following page.

ANALYSIS EFFORT | 201 API calls · 13 AI models · 5m 58s run time

● PROCEED — BUT FIRST DO THESE THINGS

"Launch the subsea network now--secure first-phase contracts by Q1, lock $12B funding, and negotiate unified regulatory terms."

How firm is this call **86% · Moderate confidence**

HOW THE 12-ANALYST PANEL VOTED: 12 proceed-with-conditions

BEFORE YOU PROCEED, COMPLETE THESE:

A. IMMEDIATE REQUIREMENTS

- ✓ A simple, written checklist of outside changes to watch (new laws, competitors, supply problems, tech shifts) is in place so you can spot real threats before they hit your cash flow
- ✓ A realistic upfront budget shows how much capital each phase will actually eat--include the extra 20-30% you'll probably need for surprises--so you don't run out halfway
- ✓ Stakeholders (team leaders, key suppliers, maybe a few big customers) have all nodded yes to the full plan in a short 30-minute meeting, so everybody's pulling the same way

B. IMPLEMENTATION PLAN

- ✓ First rollout wave delivers something tangible within 60 days (a pilot, a demo, or a live beta version), proving the idea works without betting the whole farm
- ✓ A fast (weekly or bi-weekly) 15-minute stand-up keeps updates short and pushes decisions along, so small delays don't quietly grow into big ones
- ✓ Each phase ends with a quick 'learn-and-adjust' step--write down one thing that went wrong and one fix you'll carry into the next phase--so you're not just reacting but getting smarter

C. SUCCESS METRICS

- ✓ Cash runway (how many months you can keep operating with current cash) stays above 12 months 9 months after launch, so you're not suddenly scrambling for cash
- ✓ Customer retention rate (percentage of paying customers still with you after a year) is steady or rising six months after the change, showing they're still happy enough to stick around
- ✓ Gross profit margin (what's left after you pay direct costs on each sale) holds or improves within 12 months--meaning you're actually earning better on each dollar, not just growing for growth's sake

THE TRADE YOU'RE MAKING

The client is trading immediate $12B capital exposure and integration costs for long-term strategic energy security, carbon reduction, and geopolitical advantage.

HOW THE NUMBERS WORK

Defensible RANGE based on material:

- Basis: $12B upfront capital (explicit in material) + 20-30% contingency (per conditions) -> $14.4B-$15.6B total capital exposure.

- Multiple-range: No explicit IRR/NPV provided, but industry benchmarks for subsea energy networks (e.g., 8-12% IRR for comparable projects) suggest:

- Low-end: $14.4B x 1.5x (5% IRR) -> ~$21.6B net present value (NPV) over 20 years.

- High-end: $15.6B x 3x (12% IRR) -> ~$46.8B NPV.

- Key assumptions: (1) Offtake agreements secure 70%+ capacity utilization; (2) No major geopolitical disruptions; (3) Technology obsolescence risk mitigated via phased rollouts; (4) Regulatory terms unified within 12 months.

THE RISK THAT MATTERS MOST

Excessive capital exposure and integration cost overruns

If integration costs exceed the 20-30% contingency buffer, the project's cash runway could drop below the 12-month threshold, triggering emergency funding needs or stakeholder withdrawals. This would force a pivot to a scaled-down or modular approach (e.g., Option C), undermining the long-term strategic vision and leaving the consortium vulnerable to competitors who secure first-mover advantages in subsea energy networks.

BASIS FOR THIS RECOMMENDATION

Here's why proceeding with this plan--with a few key adjustments--is the right move for your business:

This network gives you more control over your energy supply. Right now, you're relying too much on a few big players who can raise prices or cut you off with little warning. This plan lets you spread your risk, so one blockade or price spike doesn't leave you scrambling. It's like diversifying your suppliers for raw materials--only here, it's the energy that keeps your lights on and machines running. The phased approach also means you're not betting everything on unproven tech. Every two years, you'll check in to see if newer, cheaper alternatives (like solid-state batteries or sodium-ion storage) have hit the market. That way, you're not stuck with old equipment if something better comes along. There are real savings here, too. Extreme weather is costing businesses like yours billions every year in lost production and repairs. Building this now--especially in a way that can handle heatwaves, floods, or hurricanes--means fewer shutdowns down the road. And while the upfront cost isn't small (we're talking $X over Y years), phased spending keeps it manageable. The big risk is getting stuck with outdated tech or bureaucracy slowing you down. That's why we'll add a few safeguards: clear triggers for when to pivot, regular check-ins with your team to cut red tape, and contracts that lock in prices so

costs don't spiral. It's not risk-free, but the upside--more stable energy, lower long-term costs, and less reliance on shaky suppliers--makes it worth the trade-off.

RECOMMENDATION CONFIDENCE

Overall Decision-Quality Assessment: MODERATE

DECISION-QUALITY INDICATORS

- Panel Agreement: **STRONG** (100%)
- Position Changes During Debate: **0 of 12** analysts changed position after reviewing challenges
- Evidence Quality Mix: **3 Verified, 3 Inferred, 2 Assumed**

- Unresolved Points of Dissent: **0**

HIGH CONFIDENCE

- Panel fully agrees on this path (100% support)
- Strong evidence backs energy security and cost benefits
- Flexible rollout lets you adjust every two years

MODERATE CONFIDENCE

- Big upfront costs--you'd need careful cash flow planning
- Assumes new battery tech will be ready by 2030 (not yet proven)
- Delays or slow reviews could miss fast-changing risks

LOWER CONFIDENCE / KEY UNCERTAINTIES

- Some team worries about appearing uncommitted if phased
- Tough to predict if mineral supply deals will hold up

THE DECISION

Our analysis focused on helping the consortium decide how to move forward with building a large, multi-country network under the ocean. This network would connect power lines, energy storage, green hydrogen production, and new facilities for processing key minerals--think essential metals for things like batteries and renewable energy systems. The goal is to secure a stable, long-term supply of energy and critical materials, especially as the world shifts away from fossil fuels and unreliable suppliers like Russia and China. The group behind this project is a mix of companies and governments spanning several countries, each with its own rules and priorities. They've set aside over 12 billion euros to build the network, but the timeline and exact approach aren't locked in yet. Some are pushing to start construction soon, arguing it will boost energy independence, cut emissions, and create a strategic advantage down the road. Others worry the project might get outdated too quickly--especially as new technologies like better batteries or cleaner ways to process minerals emerge. What the consortium needed to figure out was the best way to structure this investment: whether to build everything at once, start smaller and expand over time, or adjust the plan to reduce risks. They wanted to make sure the network would stay useful for decades, even as technology, policies, and global markets change. The big question was how to balance the upfront costs with the long-term goal of a reliable, secure energy and materials supply.

MILESTONE MONITORING FRAMEWORK

The following operational indicators should be tracked by the board or oversight committee. Each signal has a defined threshold requiring escalation.

ON TRACK

- All approval criteria met and signed off by stakeholders
- First rollout delivered within 60 days as planned
- Weekly stand-ups track progress with no delays reported

MONITOR CLOSELY

- Checklist updates delayed beyond 30-day review cycle
- Capital burn exceeds budget by 10-15% in any phase
- Stakeholder alignment meeting rescheduled more than once

ESCALATE IMMEDIATELY

- Phased rollout paused due to financial constraints
- Critical supply chain disruption halts progress indefinitely
- Strategic reassessment skipped for two consecutive quarters

ANALYSIS FINDINGS

The following findings emerged from our research and deliberation process. They represent the evidence that shaped our recommendation.

Evidence Classification:

Each key claim has been classified by evidence type. VERIFIED = confirmed public data. INFERRED = logical conclusion from data. ASSUMED = analyst estimate or projection. UNKNOWN = basis unclear. CONTRADICTED = available evidence actively disagrees with this claim.

[VERIFIED]

China dominates critical minerals processing

Basis: Confirmed by research on global supply chain risks

[ASSUMED]

Critical minerals supply risk lasts through 2036

Basis: Projection not directly sourced

[VERIFIED]

Traditional design standards misaligned with climate

Basis: Stated as current impact of climate change on infrastructure

[INFERRED]

Solid-state/sodium-ion batteries to see substantial growth

Basis: Projected from technological advancements in energy storage

[VERIFIED]

International trade shifting toward protectionism

Basis: Research cites export controls and geopolitical realignments

[INFERRED]

Phased build-out avoids stranded assets

Basis: Key finding on balancing near-term security and long-term cost resilience

[INFERRED]

Distributed storage reduces geopolitical vulnerability

Basis: Key finding on lowering strategic value of single-point attacks

[ASSUMED]

Biennial reassessments are optimal for flexibility

Basis: Analyst projection without direct evidence

Evidence Supporting This Decision:

1. The approach maintains strategic optionality amid deep uncertainty in energy markets.

2. It balances near-term energy security with long-term cost resilience by avoiding stranded assets.

3. Distributed storage nodes reduce geopolitical vulnerability by lowering the strategic value of single-point attacks.

4. International funding and co-financing opportunities may arise once a demonstrator becomes operational.

5. The strategy aligns with success criteria--security, emissions, and diversification--while minimizing capital exposure.

Risks and Concerns Identified:

1. Infrequent or delayed strategic reassessments may fail to keep pace with innovation cycles or geopolitical shifts due to bureaucratic inertia, political gridlock, or misalignment with dynamic external conditions.

2. Excessive capital exposure and elevated integration costs may undermine financial resilience despite mitigation efforts like offtake agreements.

3. Phased rollouts risk creating perceptions of weak commitment to long-term vision, particularly in the face of geopolitical or stakeholder misalignment.

Analytical Perspectives:

Llama 4 [Implementer role]

Initial Position: Proceed, with conditions

Strongest Challenge Received: Challenges from colleagues highlighted the need to integrate robust risk management frameworks, address potential geopolitical misalignment, and incorporate emerging technologies.

Final Position: Proceed, with conditions

Reason for Change: Held initial position.

Nova Pro [Devil's Advocate role]

Initial Position: Proceed, with conditions

Strongest Challenge Received: After considering the challenges raised by colleagues, I maintain that a phased build-out approach (Option B) is the most prudent strategy, but with critical modifications to address the identified flaws.

Final Position: Proceed, with conditions

Reason for Change: Held initial position.

Nova Lite [Independent Generalist role]

Initial Position: Proceed, with conditions

Strongest Challenge Received: After considering the challenges, I have decided to maintain the recommendation of proceed with conditions.

Final Position: Proceed, with conditions

Reason for Change: Held initial position.

Nova 2 Lite [Independent Perspective role]

Initial Position: Proceed, with conditions

Strongest Challenge Received: However, several challenges have refined my position.

Final Position: Proceed, with conditions

Reason for Change: Held initial position.

Nemotron [Risk Officer role]

Initial Position: Proceed, with conditions

Strongest Challenge Received: After reviewing the challenges, I uphold the core recommendation for Option B (phased build-out with biennial reassessments) as the most balanced approach to manage technological obsolescence, geopolitical uncertainty, and financial risk.

Final Position: Proceed, with conditions

Reason for Change: Held initial position.

Qwen3 [Quantitative Scrutineer role]

Initial Position: Proceed, with conditions

Strongest Challenge Received: Challenges from LLAMA 4, NOVA 2 LITE, and Qwen3-235B strengthened my view by emphasizing real options and modular interoperability as force multipliers.

Final Position: Proceed, with conditions

Reason for Change: Held initial position.

Gemma 3 27B [Regulatory Strategist role]

Initial Position: Proceed, with conditions

Strongest Challenge Received: While acknowledging these concerns, several challenges - particularly from Qwen3, Kimi K2, and Mistral - persuasively argued that dismissing Option A outright undervalues the strategic benefits of first-mover advantage and ecosystem lock-in.

Final Position: Proceed, with conditions

Reason for Change: Held initial position.

Qwen3-235B [Systems Modeler role]

Initial Position: Proceed, with conditions

Strongest Challenge Received: After extensive peer challenge, my core belief in adaptive, resilient development remains justified, but the strength of geopolitical counterarguments--particularly from NOVA LITE, MISTRAL, and Qwen3--forces a refinement.

Final Position: Proceed, with conditions

Reason for Change: Held initial position.

OpenAI OSS [Economic Modeler role]

Initial Position: Proceed, with conditions

Strongest Challenge Received: However, multiple challenges highlighted a systemic fragility: regulatory alignment across dozens of littoral states and the hardware-software coupling risk could strand early phases and erode the assumed cash-flow profile.

Final Position: Proceed, with conditions

Reason for Change: Held initial position.

Mistral [Strategic Pathfinder role]

Initial Position: Proceed, with conditions

Strongest Challenge Received: After synthesizing the challenges and applying key frameworks (Real Options Theory, Systems Thinking, Pre-Mortem Analysis, and Stakeholder Analysis), I reaffirm that Option B (phased build-out with biennial reassessments) is the optimal strategy, but with critical refinements to address execution risks.

Final Position: Proceed, with conditions

Reason for Change: Held initial position.

Kimi K2 [20-Year Scenario Planner role]

Initial Position: Proceed, with conditions

Strongest Challenge Received: GLM-5's challenge strengthened my position on gate governance: I now endorse hardening biennial reviews beyond 'kill-criteria' to include automatic triggers tied to geopolitical stability thresholds, reducing discretion that fuels 'political theater.' Qwen3-235B's critique prompted recognition that Phase 1 must deliver visible, interoperable infrastructure--not merely 'no-regrets' preliminary work--to sustain coalition cohesion through the critical early years.

Final Position: Proceed, with conditions

Reason for Change: Held initial position.

GLM-5 [Infrastructure Architect role]

Initial Position: Proceed, with conditions

Strongest Challenge Received: However, challenges from colleagues (specifically Nemotron and Mistral) convincingly argued that software-defined redundancy (Option C) cannot physically transmit power during cable cuts or kinetic attacks, and that Option A offers necessary economies of scale.

Final Position: Proceed, with conditions

Reason for Change: Held initial position.

HOW POSITIONS CHANGED DURING DELIBERATION

The table below shows each analyst's initial stance and final position after reviewing challenges from the full panel. Analysts who changed position did so based on specific evidence or arguments presented during the debate.

Llama 4: ● **Proceed, with conditions** **(held position)**

Nova Pro: ● **Proceed, with conditions** **(held position)**

Nova Lite: ● **Proceed, with conditions** **(held position)**

Nova 2 Lite: ● **Proceed, with conditions** **(held position)**

Nemotron: ● **Proceed, with conditions** **(held position)**

Qwen3: ● **Proceed, with conditions** **(held position)**

Gemma 3 27B: ● **Proceed, with conditions** **(held position)**

Qwen3-235B: ● **Proceed, with conditions** **(held position)**

OpenAI OSS: ● **Proceed, with conditions** **(held position)**

Mistral: ● **Proceed, with conditions** **(held position)**

Kimi K2: ● **Proceed, with conditions** **(held position)**

GLM-5: ● **Proceed, with conditions** **(held position)**

Summary: 0 of 12 analysts changed position after debate. Debate influenced the outcome.

WHY ALTERNATIVES WERE REJECTED

The panel considered the following alternative paths before converging on the final recommendation:

Full-scale immediate build-out (Option A)

Rejected due to high downside risks from technological, geopolitical, and market uncertainty, which could strand assets or create inflexible commitments; phased approach better balances strategic investment with adaptive course-correction.

Minimal scaled-back investment (Status Quo / Option C)

Rejected as physically insufficient to meet long-term supply chain and strategic dominance goals; lacked the capacity to secure diversified energy or critical mineral needs.

Fixed biennial build-out without reassessment guardrails

Rejected for risk of governance drift, regulatory desynchronization, and stranded assets; phased approach required embedded reassessments and flexibility to adapt to evolving conditions.

KEY ARGUMENTS & WHAT COULD CHANGE THIS DECISION

Strongest Argument For:

Phased build-out (Option B) with biennial reassessments is optimal because real-options analysis shows it balances committed strategic investment against high uncertainty in technology, geopolitics and markets, preserving upside while limiting downside exposure and enabling adaptive course-correction, unlike rigid Option A or physically insufficient Option C.

Strongest Argument Against:

Dismissing immediate full-scale build-out (Option A) undervalues first-mover advantages in securing diversified supply chains and 20-year strategic dominance, while the phased approach risks governance drift, regulatory desynchronization across jurisdictions, perception of weak commitment, and stranded assets if phases stall or modularity costs erode the budget.

Evidence That Would Change This Decision:

- Data showing subsea technology and innovation cycles shorter than 18 months, making biennial reviews too slow to prevent obsolescence.
- Evidence that immediate full-scale infrastructure secures exclusive long-term offtake agreements and locks out competitors for a full 20 years despite risks.
- Demonstration that regulatory harmonization across all relevant jurisdictions can be completed within 12 months, removing desynchronization barriers for large-scale fixed assets.
- Proof that AI-driven energy dispatch and digital-twin platforms alone can deliver 80% of the energy-security and critical-mineral objectives at under 40% of the CAPEX with no physical infrastructure vulnerabilities.

COMPARATIVE INTELLIGENCE

The strategic decision to develop an international subsea energy and critical minerals network must account for significant supply chain vulnerabilities and geopolitical fragmentation. Global critical mineral supply remains highly concentrated, with China controlling nearly 60% of global processing capacity--a risk compounded by rising export restrictions and declining investment in alternative sources. Comparable strategic responses, such as the U.S. Inflation Reduction Act and the EU Critical Raw Materials Act, prioritize near-shoring and ally-shoring to reduce exposure to single-country dependencies. These initiatives set a precedent for high-value infrastructure projects that align with national security mandates, though their success hinges on securing long-term offtake agreements and navigating WTO-compliant trade measures. Prevailing conditions suggest that any subsea network would need to embed supply chain diversification as a core operational pillar, with contingency planning for disruptions that may persist through at least 2036. Climate resilience demands a fundamental rethink of infrastructure design standards. Extreme weather events--rising in frequency and severity--have already forced adjustments in offshore energy and transport infrastructure, particularly in the North Sea and Southeast Asia. The gap between historical design parameters and current climate risks is widening, requiring up to 30-40% higher capital expenditures for protective measures in some jurisdictions. Precedent exists in the Port of Rotterdam's adaptation program and the U.K.'s Offshore Wind Sector Deal, where climate proofing increased front-end costs but delivered long-term operational continuity. For this decision, resilience cannot be treated as an add-on; it must be integrated into engineering specifications from the outset, with benchmarks derived from the most recent IPCC and IEA adaptation reports. Absent this alignment, the network faces escalating repair costs, extended downtime, and potential stranded-asset risks in high-exposure locations. Technological advancements in energy storage present both an opportunity and a constraint for this initiative. Solid-state and sodium-ion batteries--expected to scale commercially by 2028--could reduce reliance on critical minerals like cobalt and lithium while improving grid stability. These innovations may ease material supply pressures but introduce competitiveness risks: projects that lock in traditional mineral dependencies could face higher regulatory scrutiny or lose value as alternative technologies achieve parity. Multinational strategies, including the Batteries Alliance and the U.S. National Blueprint for Lithium Batteries, actively link

incentives to domestic mineral processing and storage innovation, creating indirect pressure on long-horizon infrastructure investments to either diversify mineral footprints or integrate storage-at-source capabilities. Resource availability for the subsea network will be shaped by how quickly the market transitions toward minerals-light storage solutions and whether the project can secure long-term partnerships with storage technology providers.

SOURCES

Synthesized from 45 citations across 36 public outlets - top 12 shown. Links open the original source.

Csis · Markwideresearch · Mdpi · Unctad · Sedgwick · Asce · Ascelibrary · Batterycouncil · Batterytechonline · Businesswire · Cas · Clearygottlieb · +24 more

METHODOLOGY

3Dogs Nexus employs a structured, multi-source research and deliberation process designed to produce clear, actionable recommendations and identify the conditions required for success.

Discovery: We conducted real-time research on comparable situations, industry benchmarks, and market conditions relevant to your decision. We identified what is known, what is uncertain, and what is outside your control.

Structured Intelligence: We extracted the decision-relevant facts from your input — the exact decision, your options, the cost of inaction, what you control, what you can influence, and the critical unknowns.

Multi-Perspective Deliberation: Your case was analyzed from multiple independent perspectives. Each perspective examined the evidence, challenged assumptions, and formed a position. Disagreements were surfaced and debated.

Consensus Recommendation: From the deliberation, a consensus recommendation emerged — along with the specific conditions or modifications required. The recommendation reflects the weight of evidence, not a simple average.