Research & Advisory
Briefing

Energy Intelligence

Energy Transition & Corporate Strategy: From Adaptation to Transformation

For USAEE and NCAC

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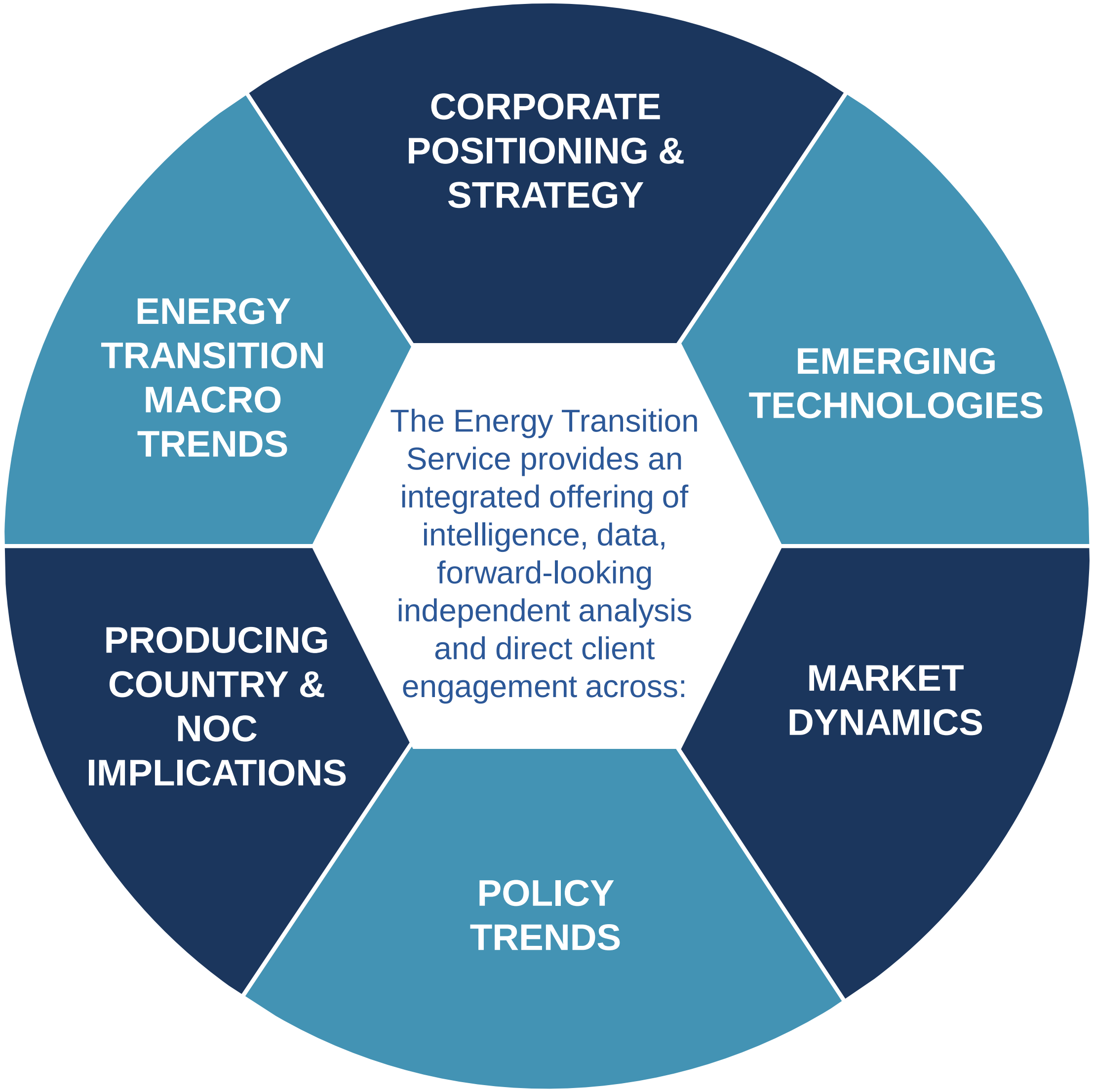
Introducing the Energy Transition Service

Guiding the energy industry through the low-carbon transition

- The **Energy Transition Service** offers an unparalleled combination of intelligence, data, independent analysis and direct client engagement.
- We seek to answer three core questions:
  - What is the energy transition and how is it unfolding?
  - What will be the impact on the oil and gas industry?
  - Which companies and countries are best and worst positioned to adapt to the energy transition?
- We focus on six thematic areas—from corporate strategy to market dynamics.



Energy Transition: Corporate Comparative Analysis

Three benchmarks provide complementary insights

- **Corporate benchmarking and analysis is a core element of the Energy Transition Service**, as players across the industry seek to develop sustainable and profitable strategies.
- **Our coverage provides an integrated assessment of company positioning for the transition.**

ESG Climate Risk Benchmark

- **Ranks companies against investor requirements under climate-risk dimension of ESG.**
- Covers company engagement (governance, strategy and emissions goals) and carbon emissions performance.
- Our proprietary assessments build on emerging reporting standards, enabling us to offer actionable guidance to clients.

Vulnerability Index

- **Assesses which companies are best positioned to survive the energy transition.**
- Proprietary methodology scores firms on portfolio resilience, and adaptation and transformation strategies.
- Our constructive approach assumes no single strategy for survival—both adaptation and transformation can be viable.

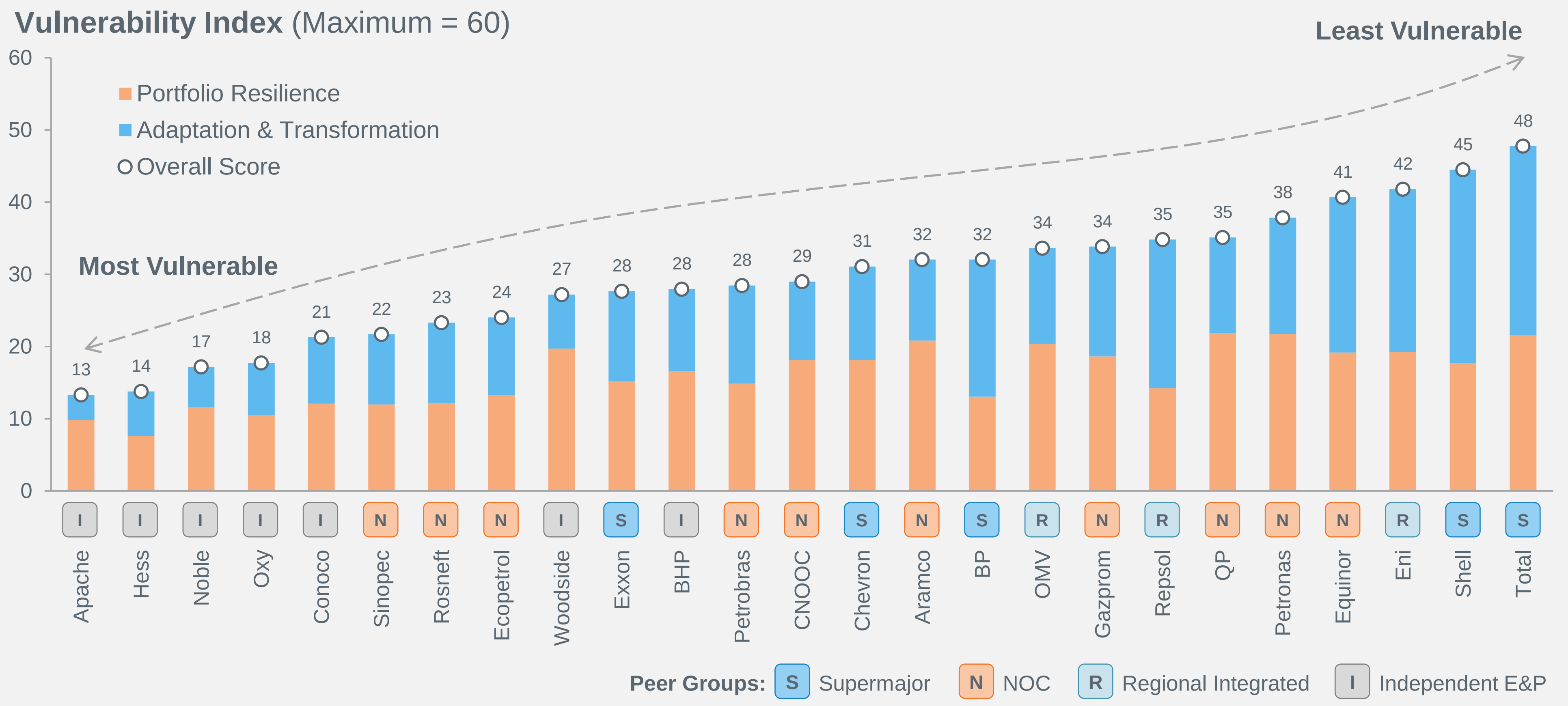
Low-Carbon Investment Tracker

- **Valuable data and insight into how firms are investing in low-carbon technologies.**
- Covers low-carbon generation, electricity solutions, e-mobility, low-carbon liquid/gas supply, and negative emissions.
- Our analysis provides essential context and insights into what lies behind companies' energy transition strategies.

Vulnerability Index: Company Exposure to Energy Transition Risks

US Independent E&Ps the most exposed, while European majors and resilient NOCs best placed

- **Our Vulnerability Index assesses which companies are best positioned to survive the energy transition**—and which are most exposed to transition risks.
- We evaluate firms on: 1) the resilience of their current portfolios; and 2) their success in devising and carrying out plans to adapt or transform their business models.



Source: Energy Intelligence, Energy Transition Service

Vulnerability Index: Our Independent, Impartial Approach

Rigorous assessment of 16 factors using proprietary quantitative and qualitative metrics

- **A company's vulnerability to the energy transition depends on both the durability of its current business, and how it is adjusting to ensure its resilience longer term.**
- To measure this, we evaluate firms on 16 factors under two broad dimensions: **Portfolio Resilience** and **Adaptation & Transformation.**
- **There is no single strategy for survival:** companies are looking both to adapt—boosting the resilience of their existing business models—and to transform—implementing more radical changes.
- We use both quantitative metrics and rigorous qualitative assessments by our expert analysts to ensure maximal impartiality.
- Our initial coverage includes 25 oil and gas companies—comprising 10 top NOCs, seven leading Independent E&Ps, three Regional Integrated companies, and all five Supermajors.

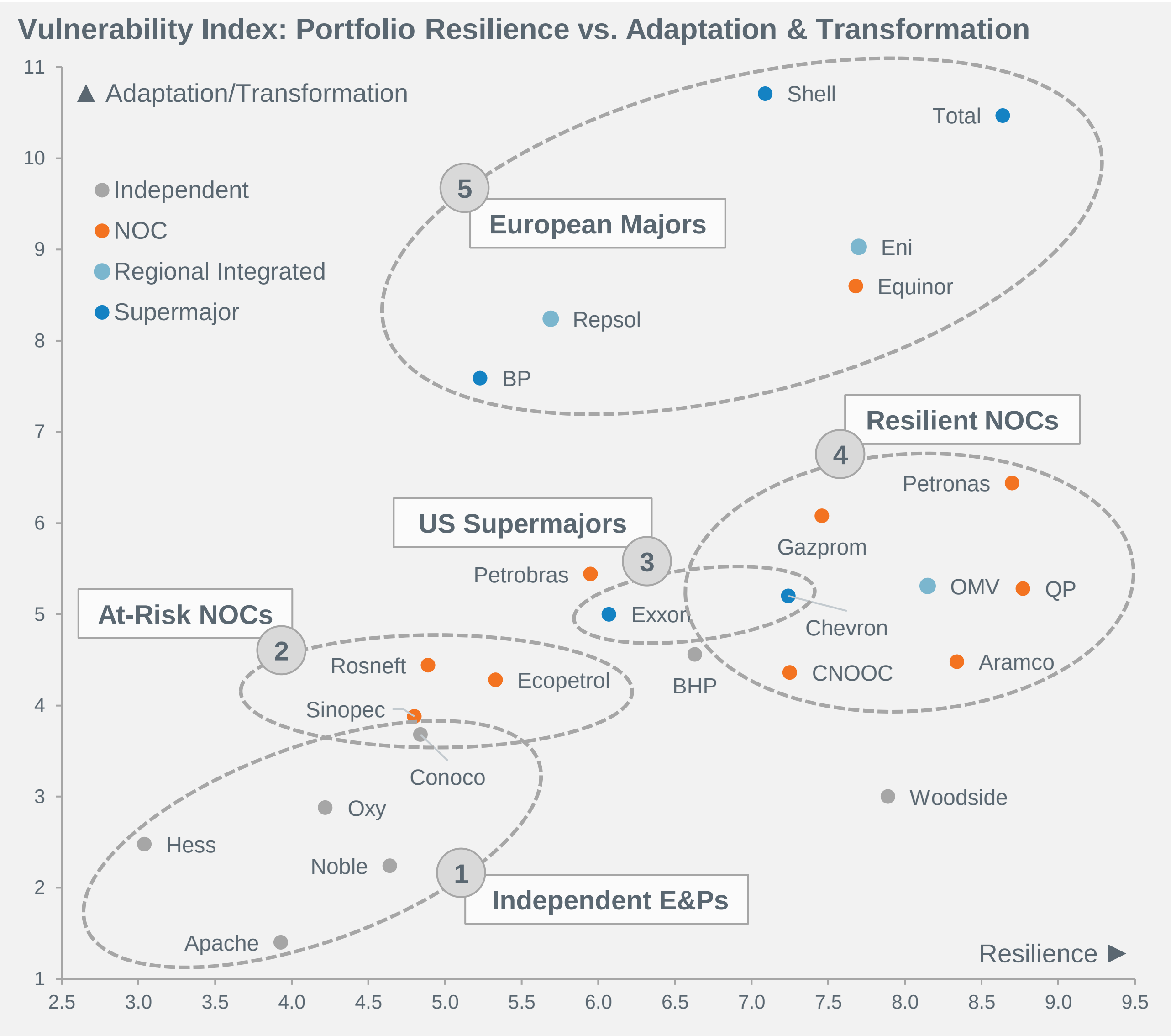
Vulnerability Index: Methodology

Portfolio Resilience (50%)	
Financial Resilience (20%)	▪ Balance Sheet Strength ▪ Profitability ▪ Cash Flow Generation
Operational Resilience (30%)	▪ Production Costs ▪ Reserves Life ▪ Operational *and* Life-Cycle Portfolio Carbon Intensity ▪ Current Portfolio Diversification
Adaptation & Transformation (50%)	
Strategy & Execution (20%)	▪ Transition Strategy ▪ Stakeholder Alignment ▪ Execution Capacity
Emissions Targets (10%)	▪ Comprehensiveness *and* Ambitiousness of Targets
Implementation & Investment (20%)	▪ Hydrocarbon Value-Chain Adaptation ▪ Share of Low-Carbon Spending *and* Low-Carbon Investment Ambitions

Overall Positioning: Resilience vs. Adaptation & Transformation

Five core groups illustrate different degrees and types of vulnerability

- **We identify five groups of companies.**
- **1. Independent E&Ps** are most vulnerable with weak underlying resilience, and scant transition plans.
- **2. At-risk NOCs** are also poorly prepared for the looming energy transition.
- **3. US Supermajors** rank closer to NOCs than to European peers, given limited energy transition strategies.
- **4. Resilient NOCs** boast more resilient portfolios.
- **5. Europe's integrated majors** are least vulnerable, benefiting from diversified portfolios and advanced transition strategies.



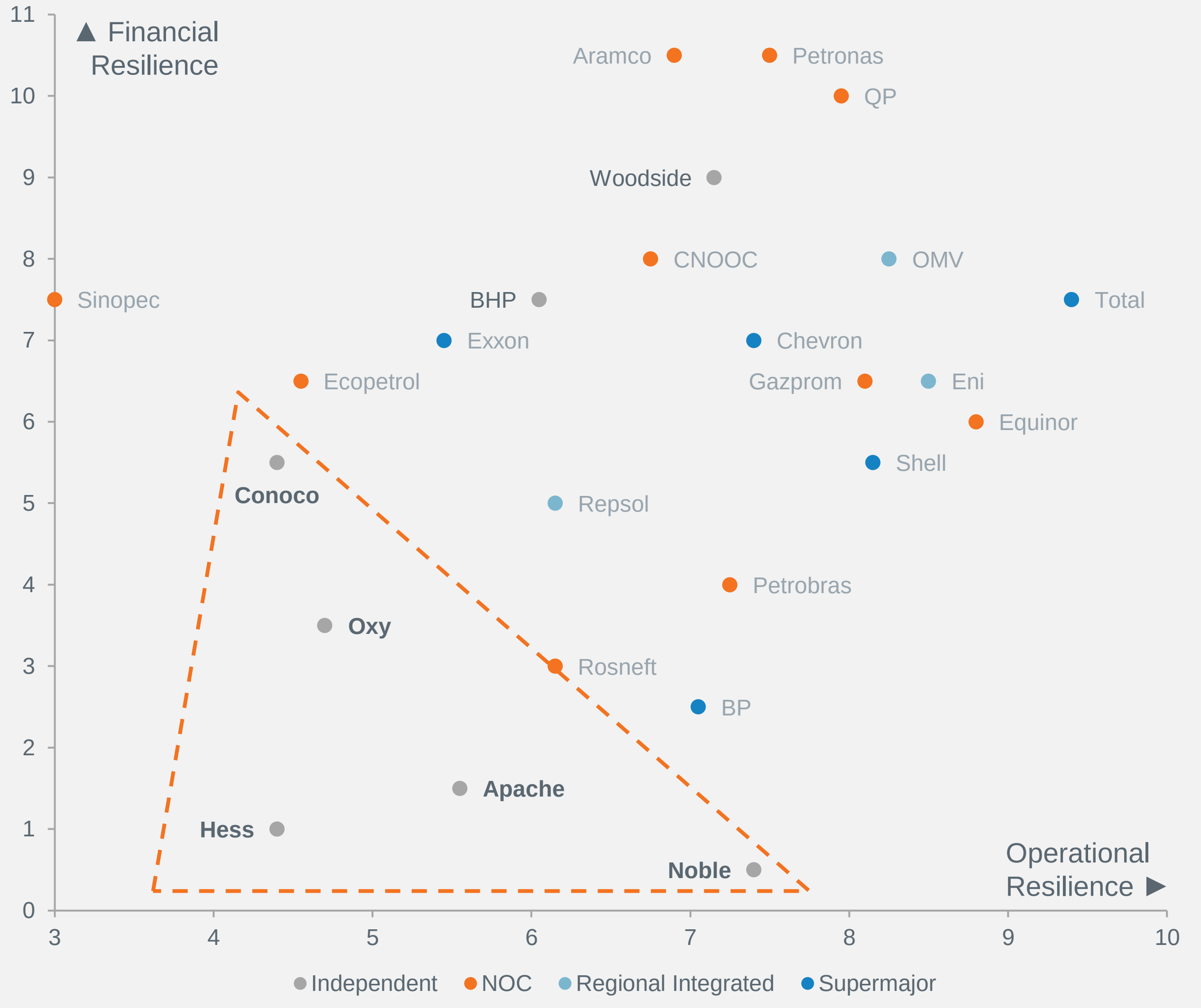
Source: Energy Intelligence, Energy Transition Service

US Independent E&Ps in Trouble

Current coronavirus crisis magnifies the existential threat posed by the energy transition

- **Shifting to upstream, shale-focused business models has left Independent E&Ps now most vulnerable to the existential threats posed by the energy transition.**
- In particular, US independents' portfolios lack resilience.
- Despite arguably having the most to do to protect against transition risks, Independent E&Ps have also been slow to adapt their business models.
- To survive, these firms will have to demonstrate that an upstream-focused oil and gas business model can be viable—starting with improving their resilience.

Portfolio Resilience: Financial vs. Operational Resilience



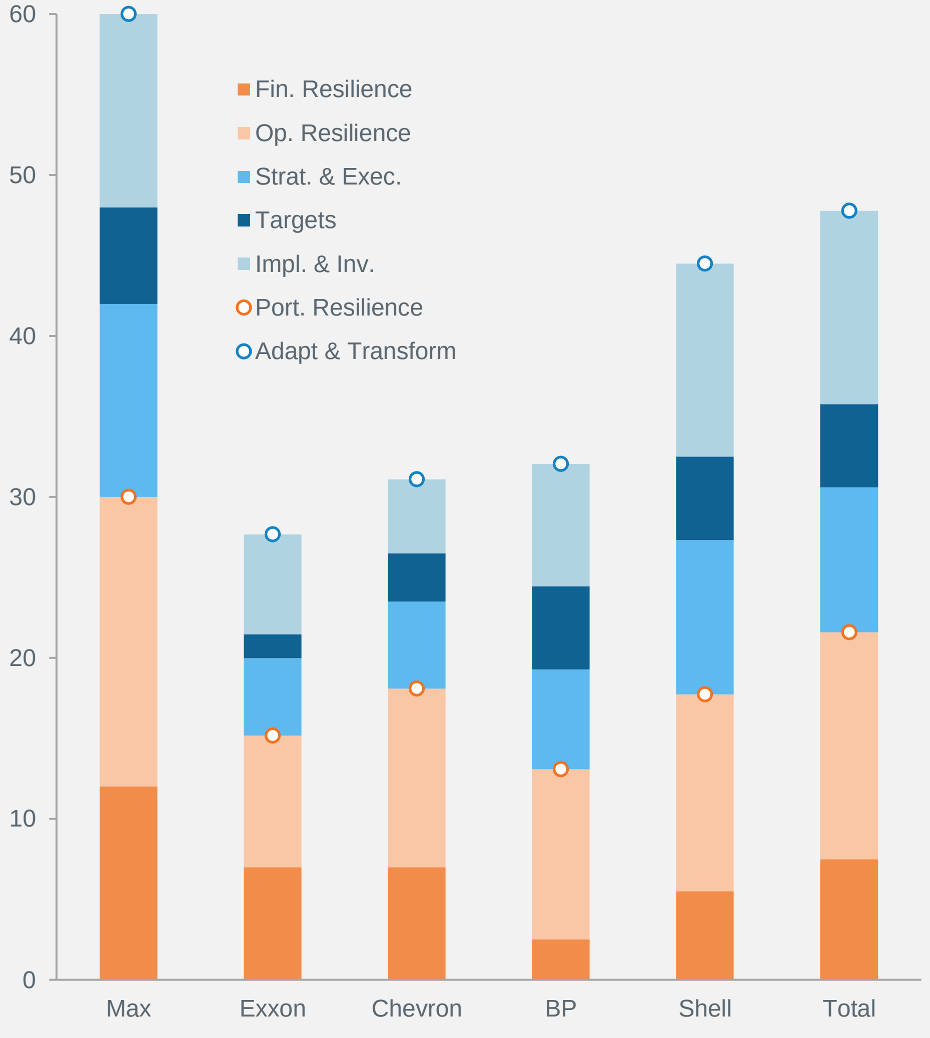
Source: Energy Intelligence, Energy Transition Service

US Supermajors: Improving Portfolio Resilience Key to Success

Big Oil model requires unrivaled oil and gas portfolios—and compelling strategies to maintain them

- **There is a big contrast between the Adaptation & Transformation scores of US and European Supermajors, while all except BP score similarly on Portfolio Resilience**
- To successfully implement a Big Oil model, US Supermajors need to have oil and gas portfolios unrivaled in their resilience.
- **Chevron and Exxon are delivering on some aspects of this approach, but—our analysis suggests—not any more successfully than Shell and Total.**
- US Supermajors have emphasized the resilience of their current portfolios, and expectations for sustained demand growth.
- But we expect the pressure to develop fuller energy transition strategies will grow.

Vulnerability Index: US vs. European Supermajors (Maximum = 60)



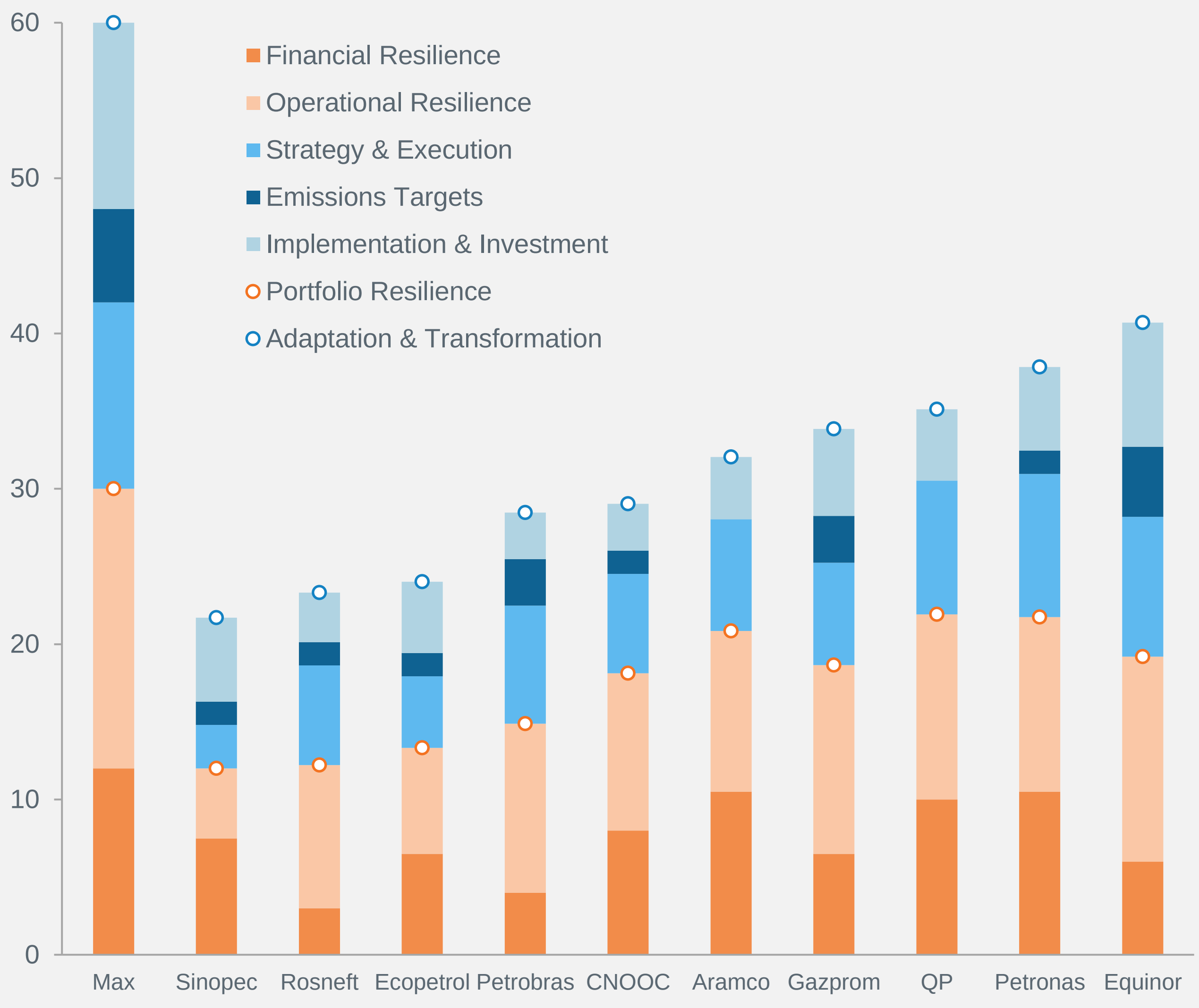
Source: Energy Intelligence, Energy Transition Service

Resilient NOCs: Leading Through Advantaged Portfolios

Biggest risk is complacency

- **The most resilient NOCs boast the most secure portfolios, but still have no room for complacency.**
- Leading NOCs do not rank far ahead of top IOCs on operational resilience. What sets them apart is their financial resilience.
- The top NOCs have taken some steps to diversify their portfolios, boosting spending in gas and petrochemicals.
- Given their strategic role as stewards of natural resource wealth, these NOCs will be obliged to lay out and advance more robust transition strategies.

Vulnerability Index: Resilient NOCs (Maximum = 60)



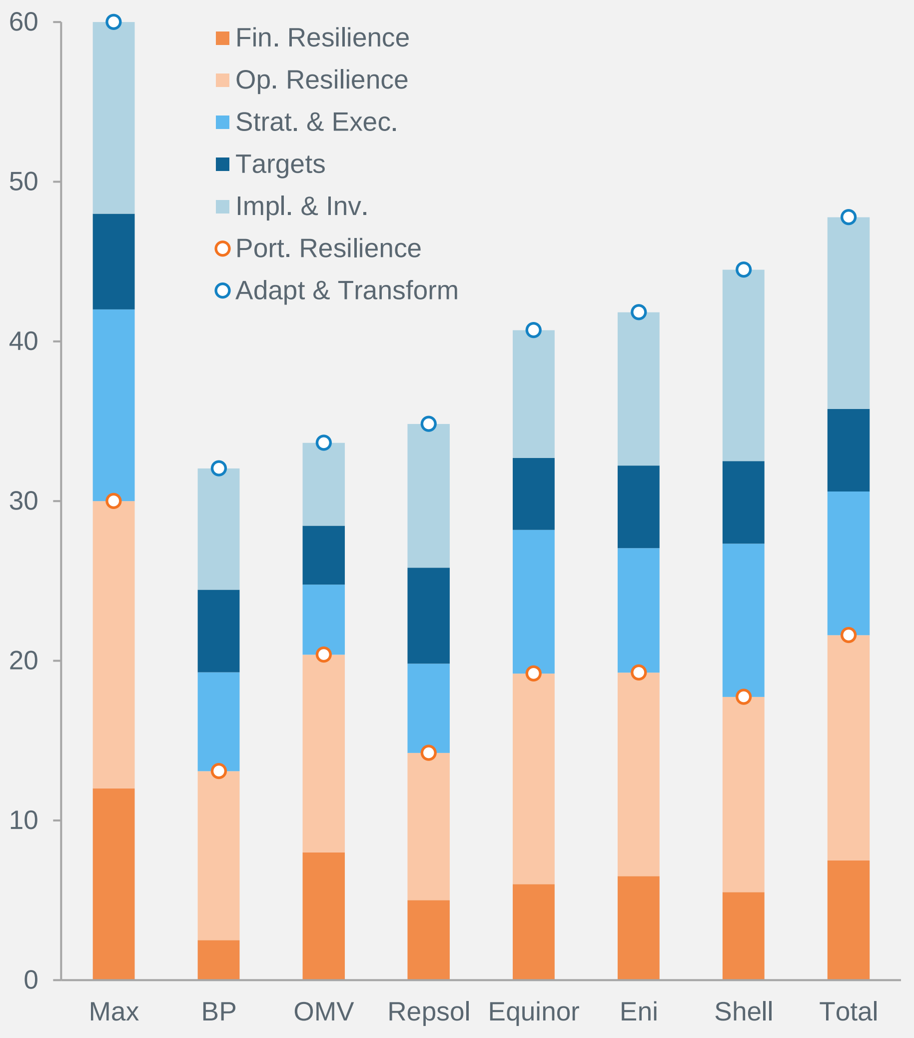
Source: Energy Intelligence, Energy Transition Service

European Majors: Advancing Transformational Strategies

Balance needed between weathering crisis, restoring profitability, and more radical decarbonization

- **Europe's integrated majors rank, for the most part, at the top of the index, with lower vulnerability to transition risks, but still face a challenging outlook.**
- Even with their growing focus on more radical reinvention, many European firms also compare favorably on the resilience of their existing operations, though this strength is not uniform.
- European companies' transition strategies are now clearly oriented more toward transformation than adaptation.
- Europe's majors will need to turn profits through the 2020s while advancing plans for deep decarbonization.
- This tough balancing act has been made only harder by the current crisis.

Vulnerability Index: European Majors (Maximum = 60)



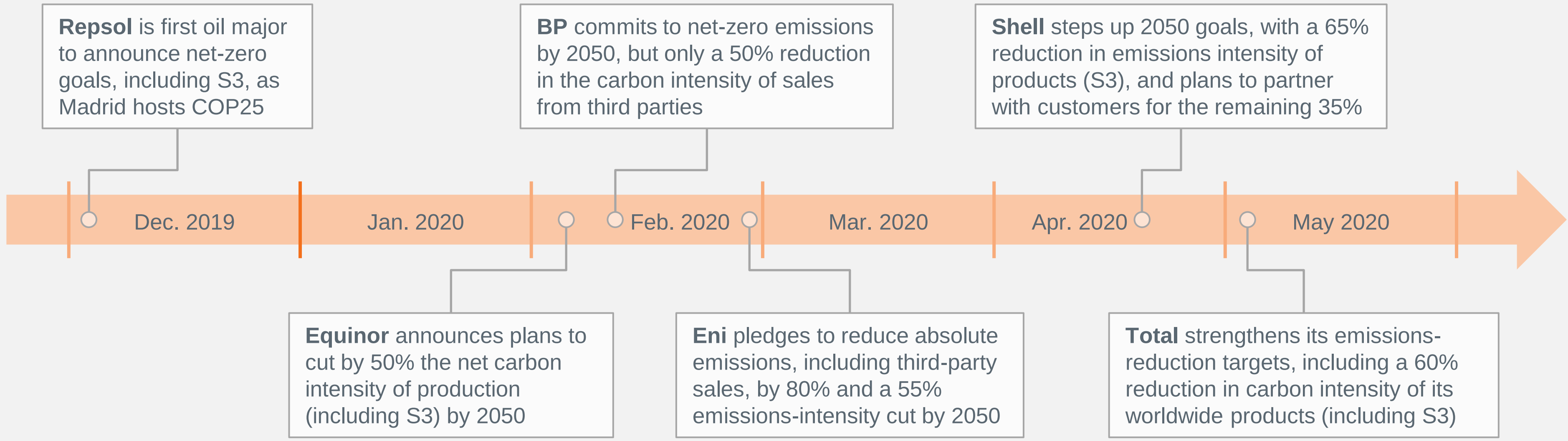
Source: Energy Intelligence, Energy Transition Service

Race to Net Zero: European Majors Undeterred by Coronavirus

Long-term targets already spurring near-term change

- **In the last six months, European majors have expanded their emissions-reduction ambitions—deepening the strategic divide with US majors.**
- Under immense investor pressure, these firms are committing to major cuts in life-cycle emissions (S1, S2 and S3) by 2050.
- Despite Covid-19 disruption companies are not pausing plans. They face more pressure to show how they will ensure the long-term resilience of their business models.
- Key net-zero targets are still far off, but signal need for a step-change in activity now, with further acceleration required by the 2030s.

Net-Zero Emissions Goals: Timeline of Recent Company Announcements



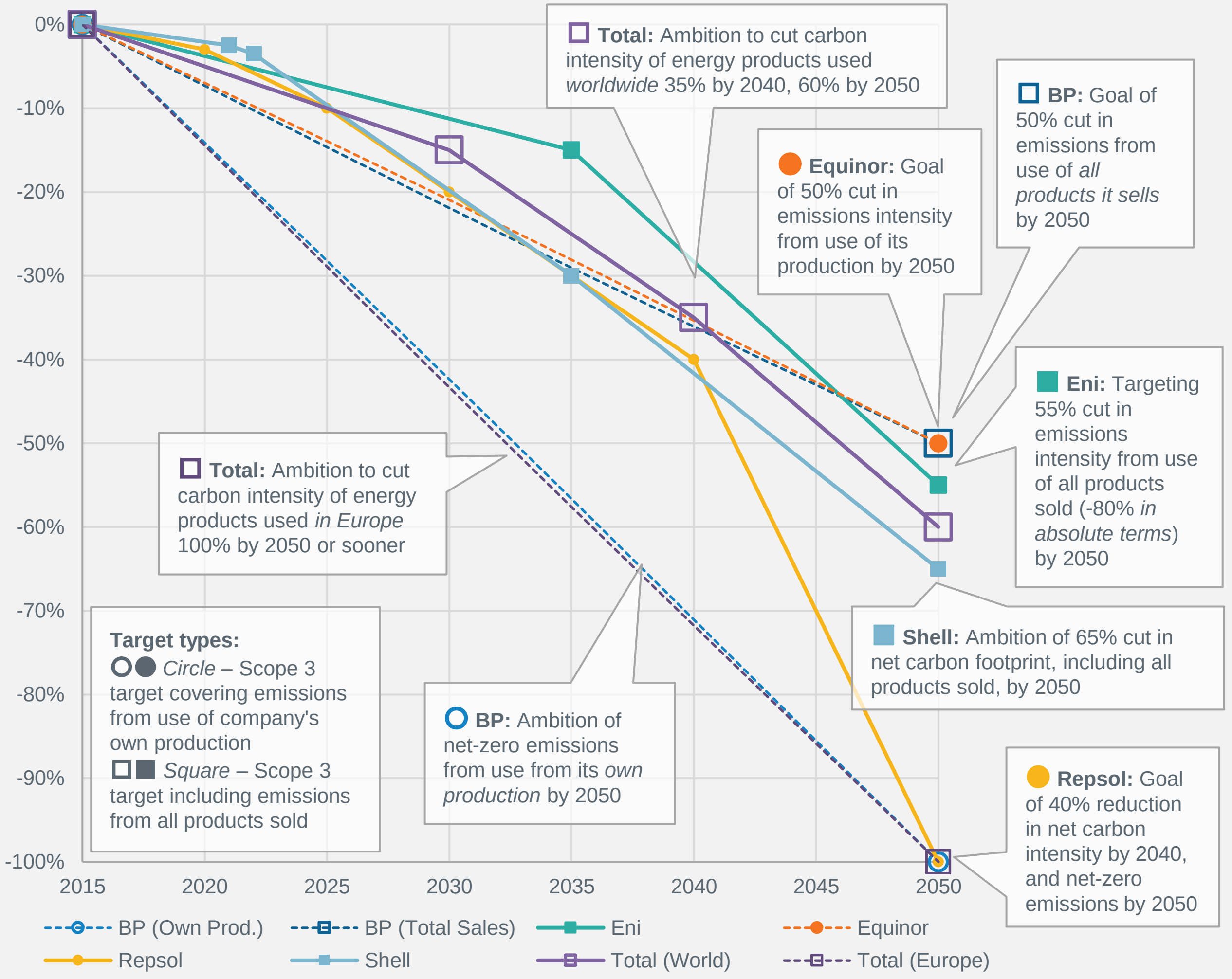
Note: S1, S2, S3 = abbreviation for Scopes 1, 2 and 3.

Emissions-Reduction Targets: Big Ambitions Are Clear

Although targets' complexity defies easy comparison

- **The level of ambition across European majors' emissions-reduction targets is clear, despite the targets' complexity.**
- All plan life-cycle (Scopes 1, 2 & 3) carbon-intensity reductions of at least 50% by 2050 but how these goals are precisely defined varies.
- For example, Shell has set out absolute net-zero ambitions, but argues that it will need to use its leverage with customers to get there.
- Total has a net-zero (Scopes 1, 2 & 3) goal only for European operations (not other regions).

Net-Zero Emissions Goals: Select Companies
(% reduction in net intensity of life-cycle GHG emissions, including from use of products)



Source: Company reports, Energy Intelligence. Note: Assumes standardized baseline in 2015, for comparison purposes.

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European Majors Accelerate Implementation Efforts

Step-change in company activity, with first signs of transformational strategies becoming reality

- **Europe's majors have in recent years laid the groundwork for change**
- **We see a step-change in activity levels occurring right now.**
- European companies are moving to:
  - Lay the foundations for more radical change.
  - Accelerate investments, at scale, in a range of low-carbon technologies.
  - Consider moves to speed up transformation.
- **European majors will forge ahead in 2020-21, widening the gap in approaches versus US peers and others.**

Emerging Transition Implementation Strategies

Foundation

1. Fundamental Reorganization
- Companies redesign themselves, putting new energies at heart of organizational structures

2. Bolster Financial Resilience
- Majors take bold steps to strengthen balance sheets, to ensure resilience and flexibility in 2020s.

Acceleration

3. Accelerate Power Sector Investment
- Step-change in investment levels in proven power sector technologies, especially solar and wind.

4. Large-Scale CCS & Hydrogen Investment
- Companies expand investment at scale in carbon capture and hydrogen projects, where conditions permit.

Transformation

5. Re-Evaluate Core Oil & Gas Portfolios
- Oil and gas majors may think the unthinkable, reviewing and downsizing existing upstream and downstream operations.

6. Explore Transformational M&A Options
- To increase the pace of change, companies may explore options to acquire greater scale capabilities in low-carbon areas.

Source: Energy Intelligence, Energy Transition Service

Corporate Reorganization Sets Stage for Change

Companies embrace radical reorganization, laying foundations for transformation

European Majors Embrace Radical Reorganization

equinor	**Equinor** announced creation of a New Energy Solutions business area in 2015	Development & Production (Norway; International; Brazil) / New Energy Solutions / Marketing Midstream & Processing
TOTAL	In April 2019 **Total** restructured its business to create iGRP (Integrated Gas, Renewables & Power)	Exploration & Production / iGRP (LNG & Upstream Gas; Renewables & Power) / Refining & Chemicals / Marketing & Services
Shell	**Shell** created its New Energies unit, which sits within Integrated Gas, in 2016	Upstream E&P / Integrated Gas (Upstream Gas, GTL & LNG; New Energies: Renewable Power, Hydrogen & Biofuels) / Downstream (Oil Products; Chemicals)
bp	In February 2020 **BP** unveiled sweeping organization changes, creating a Gas & Low-Carbon Energy group	Production & Operations (Upstream; Refining) / Gas & Low-Carbon Energy (Gas & LNG; Renewable Power; Hydrogen & CCS) / Customers & Products
REPSOL	After announcing net-zero emissions goals, in May 2020 **Repsol** introduced new business segments	Upstream E&P / Industrial (Refining & Chemicals; Trading) / Commercial & Renewables (Gas & Renewable Power; Mobility & Retail)
eni	In June 2020 **Eni** took the radical step of splitting its operations into two distinct groups	Natural Resources (Exploration & Production; Gas & LNG; Forestry & CCS) / Energy Evolution (Power: Renewables & Biogas; Refining & Chemicals; Retail)

Source: Energy Intelligence, Energy Transition Service; Note: Simplified diagram for illustrative purposes, with only select business units shown.

Vulnerability Index: What Comes Next

All companies need to step up action, but priorities should vary by group

- **Our Vulnerability Index helps firms identify priority actions to survive and thrive amid the energy transition.**

Strategies for Survival: Priority Action Areas

	Independent E&Ps	At-Risk NOCs	US Supermajors	Resilient NOCs	European Majors
Value Over Volumes	●	◉	◉	○	◉
Capital Efficiency & Low-Cost Operations	●	◉	●	✓	●
Carbon Efficiency	◉	◉	●	●	●
Robust Transition Strategy	◉	◉	●	◉	✓
Hydrocarbon Value-Chain Diversification	○	◉	●	●	●
Carbon Capture Technology Investment	○	○	◉	◉	◉
Low-Carbon Electricity Investment	○	○	○	○	●

Legend: ✓ Leader ● High Priority ◉ Medium Priority ○ Low Priority

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