

# Shell



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## Strategic Coherence

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with expert commentary by John Pedder

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# 1. Introduction

The Glandore approach to looking at the coherence of an organisation's strategy is based on viewing it as a Complex Adaptive System. (see Section **11.1** for further details); making effective use of its Strengths and mitigating its Weaknesses to respond to external Opportunities and Threats that present as wicked problems (see Section **11.2** for further details).

# 2. Method

The sequence applied is:

- ❖ Desk research (Tier 0) to establish the empirical base and evidence ledger.
- ❖ Construction of a company-specific Knowledge Engine: Tier 1 Domains, Tier 2 Artefacts, core feedback loops and indicators.
- ❖ Application of a *Five Whys Root-Cause Analysis* to surface systemic causes of observed tensions.
- ❖ Calculation of an *Implied Share Price DCF* to anchor the behavioural analysis in quantitative valuation.
- ❖ Formulation of *Stewardship Proposals* to close the gap between strategic intent and investor perception.
- ❖ Compilation of a medium-term *Watch List* to monitor validation points.

# 3. Desk Research

## 3.1. Snapshot

- ❖ **Legal name:** Shell plc — UK-incorporated; headquarters and tax residence relocated from the Netherlands in 2022 [1].
- ❖ **Scale and scope:** One of the world's largest integrated energy groups and a leading LNG producer and trader [2].

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- ❖ **Reporting segments (2024):** Integrated Gas; Upstream; Marketing; Chemicals & Products; Renewables & Energy Solutions; Corporate [2].

## 3.2. Strategy and Capital Allocation

Shell aims to return 40–50 % of operating cash flow to shareholders through dividends and buy-backs. Its current strategy prioritises LNG scale-up and high-return projects while maintaining a long-term net-zero 2050 goal and easing its 2030 net-carbon-intensity (NCI) target to 15–20 % from 20 % [3].

## 3.3. Operations

### 3.3.1. LNG (Integrated Gas).

Shell positions LNG as the group’s principal growth engine and forecasts global demand rising about 60 % by 2040 [4]. Projects under construction in Canada, Qatar, Nigeria and the UAE could add roughly 12 mtpa capacity by 2030.

### 3.3.2. Upstream (Oil & Gas).

- ❖ **Nigeria portfolio shift:**

- ❖ *Exit from onshore / shallow water:* Sale of SPDC (onshore JV operator) to the Renaissance consortium, approved December 2024 and completed March 2025 [5].
- ❖ *Deep-water consolidation:* Purchase of TotalEnergies’ 12.5 % stake in Bonga for US\$510 million (May 2025) [6].

### 3.3.3. Downstream & Chemicals.

Marketing, EV charging and lubricants provide stable cash flow and customer reach; chemicals margins remain cyclical [2].

### 3.3.4. Renewables & Energy Solutions (RES).

Scope has been refined toward selective growth in biofuels, hydrogen and power trading, emphasising financial discipline [3].

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### 3.4. Financials

FY 2024 accounts record robust operating cash flow and buy-backs consistent with policy; AR24 details segmental capex and subsidiary listings [2].

### 3.5. Governance and Structure

**CEO:** Wael Sawan (since January 2023); focus on returns and LNG. Shell reports under UK law and files Form 20-F with the SEC [7].

### 3.6. Issues and Litigation

- ❖ **Dutch climate case:** The 2021 Hague ruling ordering 45 % emission cuts was partially overturned on appeal in 2024; the duty of care was retained [8].
- ❖ **Nigeria environmental claims:** UK courts continue to hear community actions related to spills; liability remains disputed [9].

## 4. Knowledge Engine

### 4.1. Tier 1 Domains

- ❖ Strategy & Capital Allocation
- ❖ Gas & LNG System
- ❖ Upstream Portfolio & Country Exposure
- ❖ Downstream, Marketing & Chemicals
- ❖ Energy Transition Targets & Delivery
- ❖ Legal, Regulatory & Social Licence
- ❖ People, Safety & Organisation
- ❖ Institutional Memory & Reporting

### 4.2. Tier 2 Artefacts – Summary

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Table 1: Illustrative Tier 2 Artefacts for Shell plc

<b>Domain</b>	<b>Illustrative Artefacts / Operational Levers</b>
Strategy & Capital Allocation	40–50 % CFO distribution; capex high-grading; chemicals portfolio rationalisation.
Gas & LNG System	Pavilion Energy integration; Qatar/Canada/Nigeria projects; trading margin management.
Upstream Portfolio & Country Exposure	Deep-water focus; Nigeria SPDC exit; project break-even analysis.
Downstream & Chemicals	Retail and EV platform data leverage; chemicals margin cycle management.
Energy Transition Targets & Delivery	NCI trajectory; Scope 1–3 accounting; CCS and biofuels investment.
Legal & Licence	Litigation progress tracking; community engagement metrics.
People & Organisation	Trading-hub consolidation outcomes; talent retention indices.
Institutional Memory & Reporting	Transparency of subsidiary and emission data; evidence-ledger consistency.

#### 4.2.1. Note.

Tier 2 artefacts are illustrative because each company's Knowledge Engine evolves as new evidence emerges; artefacts remain open to revision through dialogue and feedback.

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### 4.3. Core Feedback Loops

- ❖ LNG scale-up ↔ returns loop: greater capacity → higher cash flow → buy-backs → investor support → further LNG growth; risk of under-funding decarbonisation [10].
- ❖ Target easing ↔ credibility loop: relaxed targets → scrutiny ↑ → policy risk ↑ → future tightening[3].
- ❖ Country risk ↔ portfolio simplification: Nigeria exit → liability ↓ but legacy claims persist [9].

## 5. Implied Share Price DCF

### 5.1. Assumptions

- ❖ Base FCF (Year 0): £24 bn
- ❖ Growth (Years 1–3): 5 % p.a.; (Years 4–5): 2 % p.a.
- ❖ Discount rate (WACC): 8 %; terminal growth 2 %
- ❖ Net debt: £33 bn; Shares outstanding (LSE): 5.882 bn

### 5.2. Projection

Table 2: Indicative 5-Year DCF (£bn)

Year	FCF	PV @ 8 %
1	25.2	23.3
2	26.5	22.7
3	27.8	22.1
4	28.4	20.9
5	29.0	19.9
<b>Sum PV (1–5)</b>		<b>109</b>

Terminal Value ≈ £493 bn; discounted TV ≈ £335 bn. Enterprise Value ≈ £444 bn; Equity ≈ £411 bn; Implied price ≈ £69.9 (≈ 6 990 GBp). Market price (Oct 2025): £28.2 (2 820 GBp). The gap indicates a market discount of around 60 %.

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## 6. “Five Whys” Root-Cause Analysis

### 6.0.1. Observed issue.

Market valuation remains below implied long-term value despite strong cash generation.

- ❖ **Why 1:** Investors doubt Shell’s transition credibility [3].
- ❖ **Why 2:** Targets were weakened, suggesting cash over transformation.
- ❖ **Why 3:** Leadership reads investor preference for distributions amid volatility.
- ❖ **Why 4:** Incentives reward short-term returns rather than long-term licence.
- ❖ **Why 5:** Governance evolved in a fossil-capital paradigm that equates resilience with production.

### 6.0.2. Root cause.

Structural short-termism embedded in incentive design and governance culture, creating a credibility gap on transition.

## 7. Stewardship Proposals

- ❖ Codify an LNG-led transition framework linking volume growth to methane and CCS metrics.
- ❖ Disclose chemicals portfolio decision gates before closures or sales.
- ❖ Publish a “Legacy Outcomes Dashboard” for Nigeria spills and community remediation.
- ❖ Reinstate a 2035 waypoint and link executive pay to multi-year emissions progress.
- ❖ Track trading-hub relocation outcomes through a “Trading Continuity Score.”
- ❖ Extend Shell’s evidence ledger to include auditable emissions and remediation datasets.

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## 8. Watch List (2025–2030)

- ❖ Delivery of 12 mtpa LNG capacity by 2030.
- ❖ Maintenance of 40–50 % cash returns without eroding transition licence.
- ❖ Progress of Dutch climate litigation and related policy developments.
- ❖ Nigeria deep-water operations and legacy claim resolution.
- ❖ Chemicals restructuring results and social cost.
- ❖ Stability of strategic direction under Wael Sawan.

## 9. Conclusion

This evaluation applies the full Tychevia Corporate Method to Shell plc. The analysis identifies a structural short-termism loop constraining transition credibility.

The DCF implies latent value well above current market pricing, suggesting that investor confidence hinges less on cash metrics than on governance adaptation and moral licence to operate. Addressing this gap requires stewardship measures that reconnect financial strength with long-loop coherence.

## 10. Expert Commentary

### 10.1. Summary of John Pedder's Comments

John Pedder, a leading expert on the oil and gas industry, was asked for his views. He:

- ❖ Believes Shell's long-term future lies in Chemicals, and that Shell is underweighting this domain.
- ❖ Recommends reducing Shell's net debt to 10–15 %, unless real opportunities are available to justify higher borrowing.
- ❖ Notes that Shell and BASF have a history of collaboration, suggesting renewed partnership potential in petrochemicals.

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- ❖ Attached *Going Green 3.docx* as context, representing his broader energy-transition view.

## 10.2. Going Green in context

The *Going Green* paper is explicitly contrarian to mainstream UK policy. Its logic runs as follows:

- ❖ **Core argument:** Cutting UK oil & gas production raises global GHG emissions, because imported hydrocarbons (especially LNG) have higher lifecycle emissions.
- ❖ **Policy prescription:** Increase domestic oil & gas output (with lower taxation), while using surplus hydrocarbons for petrochemical feedstock rather than combustion.
- ❖ **Transition vector:** Hydrogen as storage for intermittent renewables; hydrogen integration into gas grids, power generation, and heavy transport.
- ❖ **Industrial implication:** Petrochemicals (and thus Chemicals) become the rational endpoint of the hydrocarbon chain – the value-preserving use of fossil molecules.

In other words, a hydrogen–petrochemical industrial strategy is envisioned, not a rapid electrification or divestment pathway.

## 10.3. Comparison with original Shell paper

The Shell paper already identifies a “Chemicals & Products” Tier 1 domain, but its treatment is superficial – mainly noting cyclical margins and cash-flow stability. The analytical depth sits in LNG, upstream, and governance feedback loops.

From John’s vantage point, that weighting appears imbalanced.

- ❖ **Chemicals as Long-Loop Value:** John would argue this is the domain where Shell can convert declining hydrocarbon reserves into durable industrial assets (materials, polymers, hydrogen-derived fuels).

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- ❖ **Debt discipline:** Your DCF assumes robust cash generation and high distributions (40–50 % CFO). John implies that deleveraging to 10–15 % gearing could better anchor resilience and optionality for capital-intensive chemical partnerships.
- ❖ **BASF collaboration:** This introduces a stewardship dimension you could expand — joint decarbonisation platforms, feedstock sharing, and process innovation alliances.

## 10.4. Tychevia Framework integration

Under Tychevia’s Complex Adaptive System lens:

Dimension	Original Paper	John’s Emphasis	Integrative Opportunity
Strategic Driver	LNG scale-up cash-return loop	Chemicals & Hydrogen industrial decarbonisation loop	Add a second reinforcing loop: “Molecule valorisation carbon-intensity reduction.”
Temporal Focus	2025–2030 cash generation	2030–2040 industrial evolution	Extend Watch List horizon to 2040 for chemicals/hydrogen metrics.
Governance Issue	Short-termism in incentive design	Over-financialisation (debt vs reinvestment)	Add stewardship proposal: “Rebalance distribution policy toward strategic reinvestment in low-carbon chemicals partnerships.”
Transition Narrative	Credibility gap on emissions	Material-chain continuity	Merge into a dual-track narrative: energy + materials transition.

## 10.5. Assessment of Going Green 3.docx

*Going Green* is technically detailed, data-rich, but polemical in tone.

### Strengths:

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- ❖ Lays out a credible hydrogen pathway rooted in UK infrastructure constraints.
- ❖ Quantifies grid imbalance and storage limits, exposing the systemic need for hydrogen buffering.

**Weaknesses (from a corporate-strategy standpoint):**

- ❖ Underplays investor and policy expectations around absolute emissions reduction.
- ❖ Assumes unconstrained regulatory acceptance of fracking and fossil expansion.
- ❖ Frames UK policy as error-correction rather than transition leadership – which could jar with institutional investors or ESG frameworks.

In summary, it presents a valuable counter-narrative: it can feed into the Tychevia “Wicked Problems” frame as a live example of policy dissonance between local emissions and global impact.

**10.6. Recommendations**

- ❖ Add a “Chemicals & Materials” deep-dive subsection within Tier 2 Artefacts – covering value-chain integration, feedstock circularity, BASF/SABIC/JV models, and product carbon transparency.
- ❖ Create a secondary feedback loop:

*Hydrocarbon → Petrochemical valorisation → Emissions efficiency → Licence reinforcement → Investment capacity → Hydrocarbon feedstock continuity.*

- ❖ Extend the Stewardship Proposals:
  - ❖ Introduce a gearing-discipline metric (net debt ≤ 15 %).
  - ❖ Encourage disclosure of R&D and alliance spending in hydrogen and chemical circularity.
- ❖ Contextualise “Going Green” as part of the external evidence ledger under the “Energy Transition Targets & Delivery” domain – illustrating divergent

stakeholder narratives.

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# 11. Glossary

## 11.1. Complex Adaptive Systems

A *Complex Adaptive System* (CAS) is a network of interacting agents whose behaviours co-evolve over time, producing *nonlinear, emergent* patterns that cannot be reduced to the properties of individual parts. CAS adapt through feedback, learning and local rules rather than centralized control, which makes prediction difficult and top-down “fixes” prone to unintended consequences .

### 11.1.1. Origin

CAS theory draws on multiple fields—cybernetics, systems thinking, ecology, evolutionary biology and complexity science. Foundational contributions include work on self-organization and emergence, nonlinearity and chaos and complex networks (e.g., Kauffman[11], Holland[12], Gell-Mann[13], Prigogine[14]). In organisational studies, CAS principles have been applied to understand adaptation, learning, and emergence within firms and institutions [15–18].

### 11.1.2. Key Characteristics

1. **Nonlinearity:** small changes can yield disproportionately large or delayed effects; averages often mislead .
2. **Emergence:** system-level patterns (flow, culture, performance) arise from local interactions and cannot be engineered directly .
3. **Distributed control:** behaviour is guided by local rules, constraints and incentives rather than a single point of command .
4. **Feedback loops:** reinforcing and balancing feedback shape trajectories; interventions often rewire feedback rather than “solve” nodes .
5. **Adaptation and learning:** agents update behaviours based on experience, signals and selection pressures; histories matter .
6. **Path dependence:** current states reflect accumulated past decisions and lock-ins (technological, contractual, cultural) .

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7. **Co-evolution:** subsystems (workforce, finance, digital, estates, public expectations) change in response to each other and the wider environment .
8. **Heterogeneity and redundancy:** diversity of roles, competencies and partial overlaps supports resilience but can add friction .
9. **Sensitivity to boundaries and rules:** metrics, contracts and governance frameworks act as *fitness landscapes* that channel behaviour .

### 11.1.3. Further Interpretation

Viewing a company as a CAS shifts practice from linear “plan–implement–control” to *probe–sense–respond*. Leaders work on *conditions* that enable better patterns—clear purpose, simple rules, transparency of feedback, slack for learning—rather than attempting to micromanage outcomes. Improvement therefore favours:

- ❖ **Safe-to-try experiments** over all-or-nothing rollouts (amplify what works, damp what doesn’t) ;
- ❖ **Constraint design** (standards, incentives, information flows) over heroic effort and one-off programmes ;
- ❖ **Learning infrastructures** (measurement for learning, after-action reviews, communities of practice) over compliance-only regimes ;
- ❖ **Respect for context and variation**—solutions migrate only with adaptation, not copy-paste replication .

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## 11.2. Wicked Problems

The term “Wicked Problems” was introduced by Horst Rittel and Melvin Webber in their 1973 paper “*Dilemmas in a General Theory of Planning*”[19].

### Key Characteristics

They identified ten defining characteristics of Wicked Problems:

1. No definitive formulation.
2. No stopping rule.
3. Solutions are not true-or-false, only good-or-bad.
4. No immediate or ultimate test of solutions.
5. Every solution is a “one-shot operation”.
6. No finite set of potential solutions.
7. Each wicked problem is unique.
8. Wicked problems are symptoms of other problems.
9. Solution depends on problem formulation.
10. Planners have no right to be wrong.

*Return to main text.*

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