

Carbon Tracker of Tracker Group

The Incompatibility of Fossil Fuel Production with Climate Goals: Transition Risks and Stranded Assets

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Carbon Tracker

Identity

Carbon Tracker is an independent non-profit financial think tank funded by EU and US foundations interested in climate.

Vision

To enable a climate secure global energy market by aligning the capital markets with climate reality.

Mission

Mapping the transition for the fossil fuel industry to stay within a “well below” 2 degrees budget.

Strategy

Empower **investors** to identify and switch off capital to the highest cost, highest carbon projects.



Engage with **companies** to re-assess both the viability of such projects and of their business model.



Educate mainstream **financial markets and policy-makers** over the risk of a disorderly transition.



Work with **financial regulators** to bring transparency on carbon and stranded asset risk and the fossil fuel risk premium.



Independent research and thought leadership

Covering key research themes...

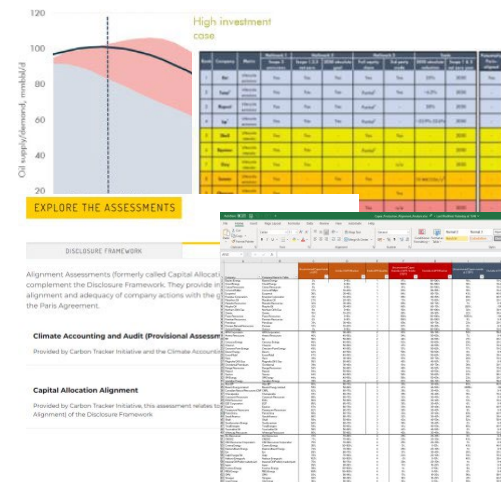
- Financial and strategic implications of the energy transition
- Assessment of corporate climate-alignment
- Key considerations for financial analysts and regulators and governance issues for policymakers

...within a range of tailored research products

1. Reports, Notes and Blogs



2. Analytics & Data



Key reports covered today

- www.carbontracker.org
- Paris Maligned III
- FF Subsidy Reform

3. Company Profiles



Fossil fuel production: incompatible with the energy transition and company risk

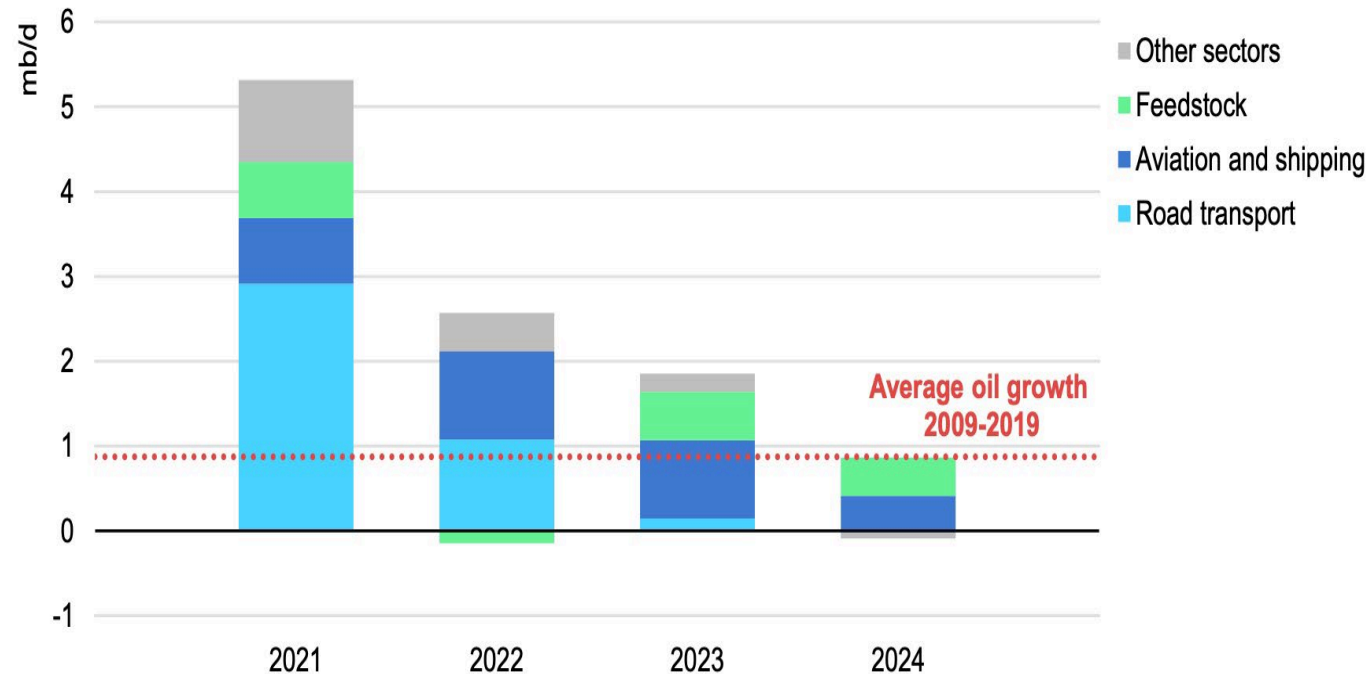
- Continued significant investment in FF production increases two large risks: the risk of slowing the energy transition so missing climate targets, and the corporate risk of stranding assets (capital and labour)
- FF Production subsidies (explicit, implicit, cultural) range from \$1 - \$10 trillion per year depending on definition – in an industry over 100 years old
- Subsidies are sticky – once applied, difficult to remove, plenty of lobby support - send strong signals to fossil fuel producers about government support, encourage investments at the margins
- With the rapid rise of renewable alternatives for transport (oil) and power (gas) oil and gas demand look certain to either peak or plateau very soon via rapid substitution
- The twin intertwined risks are now intensifying: environmental risk from too many assets being run for cash adding to emissions that were never needed, and the increasing risk of stranded oil and gas assets as producers continue to misjudge demand and price signals
- Carbon tracker has analysed major oil company production targets for compatibility with energy transition and climate goals and mitigating these risks: spoiler – they don't do well...



Global FF demand peaking

EVs replace oil demand in transport, meanwhile renewables surge in power too, replacing gas and coal

Global oil demand growth by sector, 2021-2024



IEA. CC BY 4.0.

... in the power sector,
A single journey by a large container ship filled with solar PV modules can provide the means to generate the same amount of electricity as the natural gas from more than 50 large LNG tankers or the coal from more than 100 large bulk ships.
IEA 2024

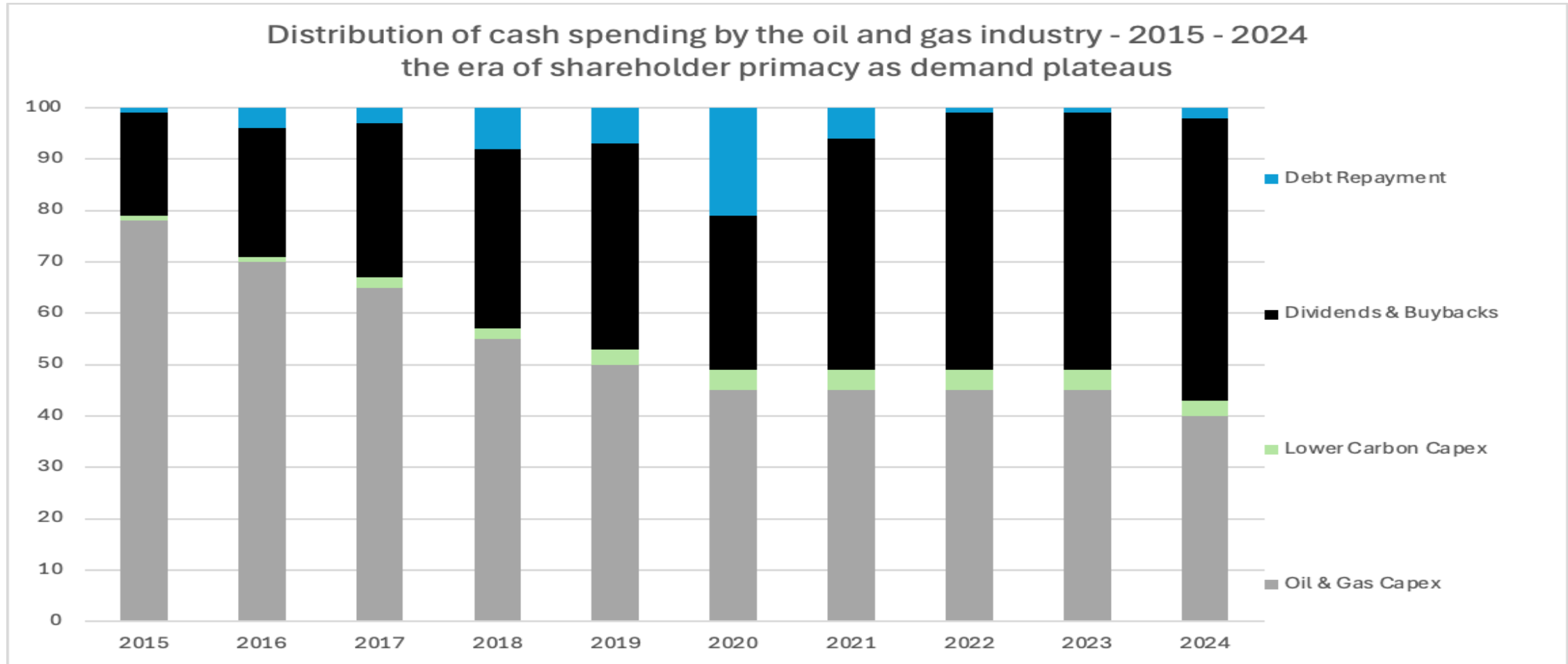
This results in capital expenditure in renewable tech now larger than in fossil fuels, and growing far faster (2024 data):

Global oil and gas capital expenditure
\$550bn, 2% CAGR

Global renewables tech expenditure -
\$710bn, 15% CAGR



Oil and Gas companies beginning to decelerate investments – but



Source – Goldman Sachs / Company Accounts



... overall climate alignment (and thus transition risk) of largest oil and gas producers – still well-off target

Analysis based on six metrics:

1. Investment options
2. Recent project sanctions
3. Production plans



Oil and gas production
(volumes and project
competitiveness)

4. *Greenhouse gas emissions targets*
5. *Methane ambition*
6. *Executive remuneration*



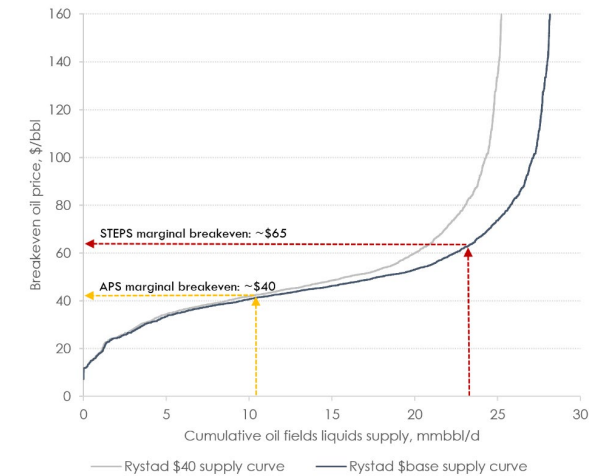
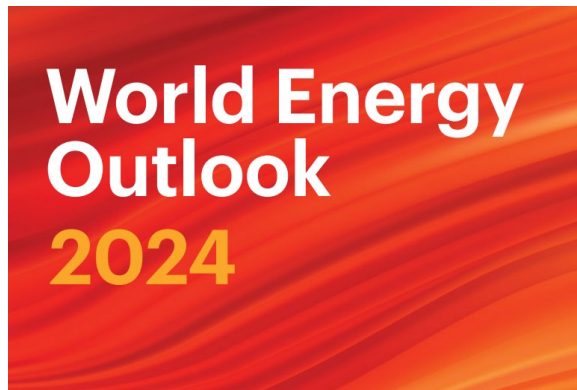
Methodology for Paris Climate scenario compatibility

For the first two metrics (investment options and recent project sanctions), we link:

IEA demand scenarios



global oil and gas supply



To determine whether companies are aligned with climate scenario targets: moderate 1.7 C / slow transition – 2.4 C

Almost all FF companies are increasing production targets

- Almost all are setting FF robust production growth targets
- In addition, most now divesting from (their small) renewable investments
- Justified by beliefs in resilient demand (home-made scenarios) and new framing of energy security in industry and politically
- Despite numerous multilateral declarations (eg G7), limited signs of subsidy reform or removals impact on investment planning

Company	Production Guidance / Target	Target Year	% change in production vs 2023 baseline
ADNOC	Increase crude oil production capacity to 5 Mbbbl/d, and produce an additional 1 bcf/d of gas	2027 (oil) 2030 (gas)	+8% (oil) +10% (gas)
bp	Expecting to grow production to 2.3-2.5mmboe/d "with capacity to increase to 2035"	2030	+4%
Cenovus	Aim to produce 805-845 kboe/d	2025	+6%
Chevron	Expecting ~6% CAGR for production	2024-26	+16%
CNOOC	Aiming to produce 810-830 mmboe annual production	2027	+21%
CNRL	Targeting between 1,510 mboe/d and 1,555 mboe/d of production	2025	+15%
ConocoPhillips	Aiming for >2.5 mmboe/d of production	2029-32	+37%
Coterra	0-5% annual growth in total oil and gas production and 5%+ annual growth in oil production	2024-26	+5% (total) +24% (oil)
Devon	Expecting to produce ~800 kboe/d	2025	+22%
Eni	3-4% underlying CAGR for total production	2030	+27%
EOG	Aiming to produce ~1122 kboe/d total volumes, of which ~505 kbo/d oil and condensate	2025	+14% (total) +6% (oil)
EQT	Aiming to produce 2175-2275 bcfe	2025	+10%
Equinor	Expecting 10%+ oil and gas production growth 2024 – 2027, with production of ~2.2 mmboe/d in 2030	2030	+6%
Expand Energy	Expecting ~7.1 bcfe/d total production with a further ~300 mmcf/d of productive capacity	2026	+6%
ExxonMobil	Increasing Upstream production to 5.4 mmboe/d	2030	+23%
Harbour Energy	Expecting production to average ~450 kboe/d	2025-27	-5%
KPC	Targeting 4.0 mmbbl/d of crude oil production, 2.0 bscf/d of non-associated gas	2035 (oil) 2040 (gas)	+38% (oil) +233% (gas)
Ovintiv	Expecting to deliver production volumes of 595-615 kboe/d	2025	+7%
Occidental	Expecting 1385-1445 kboe/d total production	2025	+16%
PEMEX	Production of liquid hydrocarbons projected to "remain on a platform" of 1.8 mmbbl/d, with gas production increasing to 5 bscf/d	2030	-4% (liquids) +1% (gas)
Petrobras	Aiming to produce 3.2 mmboe/d by 2028, holding flat in 2029	2028-29	+15%
PetroChina	Planning for 1,826.6 mmboe annual production	2025	+4%
PETRONAS	Aiming to increase Malaysia's oil and gas production to 2 mmboe/d by 2025 and beyond	2025	+15%
QatarEnergy	Aiming to increase LNG production by 85% to 142 mpta	2031	+84%
Repsol	Aiming to produce 550-600 kboe/d for the remainder of the decade	2025-30	-4%



Recent project options and sanctions almost all misaligned with transition goals

- Many companies recent project plans mean they are even further misaligned with climate scenarios
- LNG developments account for many of largest recent projects – high risk, high capital, long-term, typically subsidised with investment finance breaks
- LNG sector could be headed for a supply glut, hence corporate risk increasing
- Even new tar sands developments remain

TABLE 3. 15 LARGEST PROJECTS SANCTIONED IN 2023/4 THAT ARE OUTSIDE OF A MODERATE TRANSITION (APS/1.7°C), OR SLOW TRANSITION (STEPS/2.4°C) SCENARIO HIGHLIGHTED IN BLUE

Asset	Country	Approval Year	2023 to 2030 Capex (\$Bn)	Production Start	Resource Theme	Operator
Willow (GMT), US	United States	2023	7.5	2029	Onshore, oil	ConocoPhillips
Port Arthur LNG T1, US	United States	2023	7	2027	LNG	Sempra
Port Arthur LNG T2, US	United States	2023	7	2028	LNG	Sempra
Al Ruwais LNG T1-T2, AE	UAE	2024	6	2028	Onshore, gas	ADNOC LNG
Ruya (x-Gallaf 3-Batch 1), QA	Qatar	2024	5.5	2027	Shelf, oil	QatarEnergy/ TotalEnergies
Kaskida Phase 1 (KC292), US	United States	2024	5	2029	Ultra deepwater, oil	BP
Atapu (P-84), BR	Brazil	2024	5	2029	Ultra deepwater, oil	Petrobras
QatarGas T12 LNG, QA	Qatar	2023	5	2028	LNG	QatarEnergy LNG
QatarGas T13 LNG, QA	Qatar	2023	5	2028	LNG	QatarEnergy LNG
Sepia (P-85), BR	Brazil	2024	4	2029	Ultra deepwater, oil	Petrobras
Trion, MX	Mexico	2023	3	2028	Ultra deepwater, oil	Woodside
Long Lake Northwest, CA	Canada	2023	1.5	2024	Onshore, oil	CNOOC
Sparta (x-N Platte) (GB959), US	United States	2023	1.5	2028	Deep water, oil	Shell
Block 10 (Marsa LNG), OM	Oman	2024	1.5	2028	LNG	TotalEnergies
Mako, GY	United States	2023	1.5	2027	Ultra deepwater, oil	ExxonMobil



Bottom line - major producers remain far from Paris-aligned

- They perform well on only one metric, if any
- Some variation across company Universe – but all graded poorly
- IOCs, NOC, Independents
- Scores = proxies for transition risk exposure

Company	Individual Unweighted Scores (all out of 4)						Overall Grade
	Investment Options	Recent Sanctions	Production Plans	GHG Targets	Methane Targets	Executive Remuneration	
Repsol	2	2	3	2	2	1	D
Harbour Energy	2	2	3	0	1	1	E
EQT	2	4*	1	0	2	2	E
Eni	2	1	0	3	2	1	E
Expand Energy	2	4*	1	0	2	1	F
Shell	2	2	0	1	2	2	F
TotalEnergies	2	1	0	2	2	1	F
bp	2	0	0	2	2	1	F
Equinor	2	1	0	1	2	2	F
CNRL	2	3	1	0	0	1	F
Cenovus	1	4*	1	0	1	1	F
Chevron	1	1	1	1	2	1	F
Occidental	0	1	1	1	2	3	F
Saudi Aramco	3	2	0	0	1	0	F
Suncor	0	4*	1	1	0	2	F
Devon Energy	1	4*	1	0	0	1	G
PetroChina	2	1	1	0	1	0	G
CNOOC	2	2	1	0	0	0	G
Coterra	2	0	1	0	1	1	G
EOG	2	1	1	0	0	1	G
ADNOC	2	2	0	0	2	0	G
Ovintiv	0	4*	1	0	1	1	G
Petronas	2	1	1	0	0	0	G
Petrobras	0	3	1	0	2	0	G
Qatar Energy	2	1	0	0	1	0	G
ExxonMobil	1	2	0	0	1	1	G
ConocoPhillips	0	2	0	0	2	1	H
KPC	2	0	0	0	0	0	H
Sonatrach	2	0	0	0	0	0	H
PEMEX	0	0	2	0	0	0	H
Weight	25%	10%	25%	20%	10%	10%	-



Conclusions, and a final thought

- Despite policy pressures on FF companies, they continue to pursue vigorous FF production plans
- Some capital investment pull-back – but NOCs especially looking to invest consistently to maintain market leadership while they benefit from state subsidies
- Renewable investments by FF firms have all but ceased: this increases risks as they become disengaged with the fast-growing renewable sector (\$700bn+ pa and 15% growth),
- Policy options could include encouragement of FF firms phasing down of investments, as renewables are subsidised to phase up. Governments are still reluctant to grip the subsidy issue at a national level
- Also transparency measures – companies could be required to list their subsidy benefits to corporate profits, and disclose planning assumptions for future subsidies, and plans to manage any reforms or removal – CT continue to analyse these issues
- The energy transition is no longer a future scenario, it's an industrial transformation underway today



Thank you



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- **Responsible investment and stewardship teams:** to inform asset allocation decisions, particularly within “sustainable” financial products, and to inform proxy voting
 - a. Our scoring methodologies outline what best practice looks like
 - b. Our analysis highlights where reputational risk is highest
- **Banks and insurers with net zero commitments:** to assess clients’ Paris alignment, in the screening process and when developing lending policies
- **Mainstream investors with no climate mandate:** to serve as a proxy for transition risk exposure



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