Accela Research
In-depth Sector Report

April 2024

Oil and Gas Majors' 2024 AGMs
The Low-carbon Investment Gap

Empowering climate engagement

22 April 2024
ShuLing@accelaresearch.com

2024 AGMs: The Low-carbon Investment Gap

~$300bn
investment in low carbon alternatives needed between now and FY30

Analysis across five European oil and gas majors shows that current investments in low carbon are insufficient to meet net carbon intensity (NCI) targets (ranging from 15% to 20% FY19-30). To date, majors have delivered little progress on their NCI, declining on average ~4% from FY19-23. TotalEnergies has achieved the highest reduction, declining by 7%. Equinor lags behind its peers, achieving a mere 1% against its -20% NCI commitment. Eni, Shell and BP are on par in delivering ~3% reduction in NCI (excl. offsets). The equivalent of 309GW of renewables is required between FY24-30 to shift the dial on carbon intensity. This requirement is weighted heavily to companies like BP and Shell, whose NCI targets cover the full scope of emissions compared to peers like TotalEnergies (~30% coverage). We estimate 309GW to translate to a ~US$300bn in low carbon investment between now and FY30, assuming a 50:50 investment in solar and onshore wind and excluding the impacts of any capex spent to date in building out a renewables pipeline. Under current company guidance (FY24-30), majors have committed a total of US$166bn, leaving a minimum investment gap of ~US$134bn (~US$19bn p.a). Based on current low carbon targets, we forecast companies will only be ~5% low carbon in FY30 and will fall short of meeting their NCI targets by 1-15%.

Gas not a material lever for lowering emissions intensity

European and Australian majors are guiding to an increase in oil and gas by a combined 2% by FY30, in contrast to the climate imperative to phase down production (~22% reduction according to the IEA Net Zero Pathway). Despite describing LNG as a lower-emission fuel, Shell and TotalEnergies' growing gas sales will not be a material lever for lowering carbon intensity. A 10% increase in gas as a percentage of hydrocarbon sales by FY30 will drive a mere ~3-4% decline in NCI. Instead, a 10% increase in low carbon fuels by FY30 will, on average, decrease NCI 12-14%.

BP leading peers on transition

In this report we launch a new framework to rank European oil and gas transition plans against metrics we define as material in assessing a credible transition. We find BP's transition strategy leading, largely driven by the company's ambition to reduce oil and gas production (-13%), its ambitious low carbon capex targets (44%-50%) and strong low carbon progress to date. Following BP is TotalEnergies, Shell, Eni and Equinor.

Considerations going into AGM's

Minimal progress to date in shifting energy portfolios demonstrates that more investment is needed in low carbon to achieve existing NCI targets. At a minimum, companies need to increase their low carbon investment from FY23 by 14% p.a. to meet existing FY25 low carbon capex targets. Investors should assess the companies' rationale in expanding gas production and its impact on current net carbon intensity goals and ask companies to align capex commitments with the amount of investment required to lower emissions intensity across energy portfolios. Companies could make a material contribution to achieving 1.5C if they invested the necessary capex in renewable power to meet current FY30 targets, at ~US$43bn p.a.

Introduction

Accela Research (Accela) empowers investors engaging companies on decarbonisation by providing up-to-date, strategic insights and engagement support, connecting climate data and financial performance with a focus on accelerating transition.

This report, **Oil and Gas Majors' 2024 AGM's, The Low carbon Investment Gap,** is Accela's annual pre-AGM in-depth on global oil and gas majors, assessing the achievability and investment needed to meet net carbon intensity targets. This report launches Accela's Transition League Table, a new framework to rank European majors' oil and gas transition strategies, incorporating the most critical elements of transition performance.

View Accela's previous pre-AGM report, European Majors' 2023 AGM: Progress towards Low Carbon report on our website. https://www.accelaresearch.com/research

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1. Transition Leaders and Laggards

Following our last AGM report in April 2023, we look at how 7 oil and gas companies (5 European and 2 Australian) have progressed on emissions and low carbon investment since FY19. We find a clear divide between the ambition held by Australian and European majors. While significantly smaller, Australian majors remained focused on the continued growth of oil and gas and steered away from committing to targets related to customer emissions. On the other hand, European majors have a strong ambition to invest and build up their low carbon offerings but are juggling the delivery of emission targets alongside plans to maintain or increase fossil fuel production.

1.1 Comparative transition targets and performance

Key findings

Shell is the only major to update emission targets: During FY23, there were no changes to emission targets across majors except for Shell. Shell introduced a new oil sales ambition (15-20% by FY30) and a range to its FY30 net carbon intensity (NCI) target (15-20%). Eni continues to lead on the ambition of Scope 1,2 and 3 targets. However, the ambition of its NCI target is at the lower end of its European peers (-15% to FY30, vs 14-19% by Shell and 20% by others). Australian majors, Santos and Woodside, carry the lowest ambition for Scope 1 and 2 targets (-30% by FY30) and do not have a target to address downstream emissions (absolute scope 3 or NCI).

Scope 1 and 2 targets on track for most: As of FY23**,** all companies are more than halfway towards meeting scope 1 and 2 emission targets except for Woodside (12% of 30% target, ~80% met by offsets) and Eni (31% of its 70% target). While BP has made the most progress, achieving ~41% of its 50% reduction goal to FY30, divestments account for 80% of this progress. Eni and TotalEnergies made the most progress between FY22-23, achieving a 13% reduction in Scope 1 and 2 emissions within the year.

Scope 3 emissions are increasing for those without a target: Scope 3 emissions have shown an overall increase since FY19 for Equinor (+4%), Santos (51%) and Woodside (+161%, ~127% ex. BHP merger). In contrast, other peers with some form of scope 3 ambition/target have shown an overall decrease (-13% to -26%). The notable increase in Woodside (+161%) and Santos (51%) emissions are partly due to mergers with BHP Petroleum and Oil Search, respectively. Both companies have shown no indication of introducing a scope 3 or NCI target.

Net carbon intensity targets are difficult to progress: In FY23, there was little progress made in achieving NCI targets (-3% to +1% across European majors). Shell achieved the greatest reduction in its NCI (-3%) however, ~50% was driven by offsets. TotalEnergies continues to lead in its progress in reducing its NCI (-7% since FY19), a key driver being increased renewables in its portfolio. Despite progress on Scope 3 reductions across majors, we find these are not translating to progress on NCI targets due to a focus on divestments and insufficient investment in low carbon (see Section 2)

Oil and gas production to increase to FY30: Between FY19-23, Woodside and Santos were the only majors to increase oil and gas production partly due to their respective mergers. Between FY23-30, BP (-13%) and Equinor (-4%) are the only majors guiding to reduced oil and gas production. Collectively, to FY30, oil and gas production is set to change by ~2% to FY30 across the majors. Australian majors, Woodside and Santos, only provide guidance to FY24 and FY28, respectively.

Allocation of capex to low carbon increasing: In FY23, low carbon capex across all majors increased to ~$19bn from $15bn in FY22. In FY23, TotalEnergies allocated the greatest proportion of capex to low carbon (35%), a 47% increase on FY22. To FY30, BP and TotalEnergies continue to hold the greatest ambition for low carbon capex (up to 50%). Woodside carries the least ambition (~12%) followed by Shell (~19%). Between FY22-FY23, all other majors increased their spend on low carbon except for BP (-36%).

Table: The comparative transition targets and performance of oil and gas majors (Europe and Australia).

	BP	Shell	Eni	Total Energies	Equinor	Woodside[1]	Santos[2]	Lead	Lag
Who is largest? (FY23)									
Production (kboe/d)	2,312	2,791	1,655	2,483	2,082	513	251	**SHEL**	**STO**
Total disclosed emissions (MtCO2e)	1,742	1,204	398	450	282	82	39	**BP**	**STO**
Who has the most ambitious targets to FY30? (FY19 base)									
Net carbon intensity	-20%	-19%	-15%	-20%	-20%	no target	no target	**Tied**	**ENI**
Absolute Scope 1 and 2	-50%	-48%	-70%	-44%	-44%	-30%	-30%	**ENI**	**Tied**
Absolute, Scope 3	-30%	0%[3]	-34%	-2%	no target	no target	no target	**ENI**	**Tied**
Whose targets are the most comprehensive?									
Emissions covered by absolute targets	20%	48%	100%	86%	4%	8%	13%	**ENI**	**EQNR**
Who has reduced emissions most (FY19-FY23)									
Net carbon intensity	-3%	-5%	-3%	-7%	-1%	Not disclosed	Not disclosed	**TTE**	**EQNR**
Absolute, Scope 1 and 2	-41%	-29%	-31%	-23%	-22%	-12%	-17%	**BP**	**WDS**
Absolute, scope 3	-13%	-26%	-22%	-15%	4%	161% (127%)	51.4%	**SHEL**	**WDS**
Who has reduced emissions the most in FY23 (FY22-FY23)									
Net carbon intensity	0%	-3%	-1%	-1%	1%	3%	Not disclosed	**SHEL**	**WDS**
Absolute, Scope 1 and 2	1%	-2%	-13%	-13%	1%	20%	-1%	**Tied**	**WDS**
Absolute, scope 3	3%	-2%	-5%	-7%	0%	20% (~4%)	9%	**TTE**	**WDS**
Who has the least reliance on offsets for emissions reduction?									
Offsets (MtCO2e)	n.d	20.00	5.90	n.d	n.d	0.66	n.d	**Tied**	**SHEL**
How much of emission reduction has been met by divestments?									
Scope 1 and 2 target	80%	92%	n.d	n.d	n.d	n.d	n.d	**Tied**	**SHEL**
Who is reducing oil and gas production?									
FY19-FY23	-12%	-24%	-12%	-18%	0%	109% (62%)	21%	**SHEL**	**WDS**
FY23-30	-13%	0%[4]	15%	13% (FY28)	-4%	+4% (FY24)	24% (FY28)	**BP**	**STO**
Who is investing most in low carbon?									
Low carbon capex (FY23)	18%	23%	8%	35%	20%[5]	4%	8%	**TTE**	**WDS**
Low carbon capex (change on FY22)	-36%	+30%	+17%	+47%	+107%	+135%	+36%	**WDS**	**BP**
Guidance (% total capex FY25-FY30)	44-50%	19%[6]	28%	33%	30-50%	12%[7]	24%[7]	**Tied**	**WDS**

Source: Company data, Accela estimates| n.d: not disclosed

[1] Emissions data and FY19 baseline reflects the merger with BHP Petroluem (June 2022), bracketed values reflect estimated progress excluding merger impacts

[2] Santos emissions reported on Jul 22-Jun 23 basis, emissions data and FY19 baseline incorporates merger with Oil Search (Dec 2021)

[3] Shell has a scope 3 target for oil sales only (15-20% by FY30)

[4] Depending integration with LNG, Shell's gas production could grow 8-16%, with total production growing 0-8%.

[5] Equinor low carbon capex presented relative to gross capex

[6] Shell low carbon capex estimated based on guidance of $10-15bn FY23-25 after accounting for FY23 spend

[7] Low carbon capex assumes average run rate of remaining $5bn by FY30 (Woodside) and $3-4.5bn by FY33 capex ambition (Santos)

1.2 Accela Transition League Table

In response to investor interest in understanding which European major is best placed for transition, we have launched the **Accela Transition League Table.** This table reflects the consolidation of key performance metrics we use to monitor oil and gas company transition performance. Our method evaluates performance across four key categories (emissions, oil and gas decline, low carbon capex, and low carbon volumes), assigning scores ranging from 1 (leading) to 5 (lagging) to category sub-indicators (see appendix). Scores are summed across categories, with each equally weighted, to determine a final score for performance.[8]

Key findings

BP's transition plan leads majors across aggregate metrics. This is largely driven by the company's leading ambition to reduce oil and gas production (-13% by FY30) and low carbon capex targets (44%-50%). It has also achieved strong progress to date in building out the company's low carbon offerings.

TotalEnergies is right behind in second, with peer-leading progress in emissions reductions (NCI -7% on FY19, highest of peers), peer-leading low carbon capex in FY23 (35%), and the strongest low carbon volume ambitions across peers. However, TotalEnergies' ranking is impacted by its weak NCI coverage (estimated ~30% of underlying emissions) and high oil and gas production ambitions (13% growth between FY23-30).

Shell edges out Eni: Although Shell leads peers in oil and gas decline between FY19-23 (-24%) and has demonstrated a strong low carbon capex allocation for FY23 (23%), the company's lack of low carbon volume targets and lower capex ambition (~20% in FY25, no target for FY30) impacts its ranking. Eni's relatively strong progress for emissions reductions and peer-leading emission reduction targets are offset by the company's oil and gas production ambition (15% between FY23-30), weak low carbon capex allocation (28% by FY30, no guidance for FY30), and relatively weak build-out of its low carbon offerings, pushing the company behind Shell.

Equinor lags all peers across aggregate metrics, with weak emissions reduction progress, ambition, and coverage overall. The company has kept oil and gas production flat from FY19, while peers have declined production. Minimal progress has been made compared to peers in building out low carbon volumes, as the company aggressively pursues carbon capture and storage (CCS).

Accela Transition League Table: European oil and gas majors' progress and ambition ranked from 1 (lead) to 5 (lag)

Rank #	Company	Transition categories			
		Emissions	Oil and gas decline	Low carbon capex	Low carbon volume
1	BP	2	1	2	1
2	TotalEnergies	4	3	1	1
3	Shell	3	1	4	3
4	Eni	1	5	5	3
5	Equinor	5	4	2	5

Source: Company data, Accela Research estimates

[8] Where a company has not assigned an emission, low carbon volume or capex target, it is assigned a value of 5.

2. Whose NCI targets are most at risk?

Net carbon intensity is a valuable metric for assessing the decarbonisation progress of an oil and gas company's portfolio, with a declining NCI reflective of the inclusion or switch to lower-emission fuels. In assessing FY23's progress in reducing net carbon intensity, we have seen that material decline is very hard to achieve, particularly where declines in oil and gas are not accompanied by growth in low carbon energy.

As Shell demonstrated in FY23, offsets are an easier route to deliver on NCI reductions compared to transitioning portfolios and reducing exposure to oil and gas. NCI progress can be hard to compare as companies can differ in the scope of energy products included[9]. Meeting existing FY30 NCI targets requires a major overhaul in the energy products sold.

In this section, to understand NCI targets at risk, we have looked at the European majors' progress to date, the gap in NCIs to FY30, and the impact of current announced low carbon levers to meet the gap. Australian majors are excluded from the analysis as they do not have an NCI target.

2.1 Net Carbon Intensity progress to date

Key findings:

FY30 emission intensity targets are fast approaching, and little progress has been made. From FY19-23, reductions have been small at -1 to -7%, compared with 15%-20% net carbon intensity reduction targets.

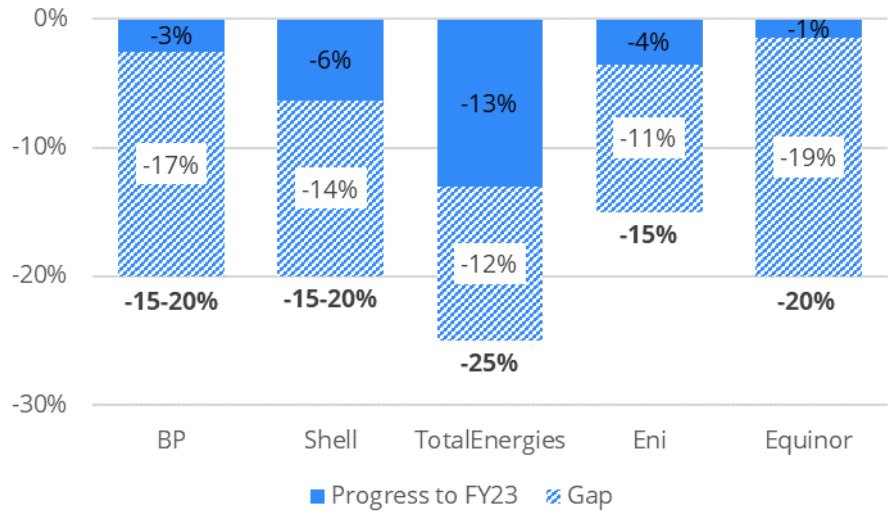
Equinor and BP have the largest task in decreasing net carbon intensity towards targets, needing 19% and 17% reduction, respectively, assuming an FY19 base.

Companies most progressed in reducing emission intensity have relied on offsets (Shell) or a narrowed emissions profile (TotalEnergies): TotalEnergies has made the most progress on its FY30 net carbon intensity (NCI) target to date, achieving over half of the targeted reductions on its FY15 baseline (-13% as of FY23 vs -25% FY30 target). However, based on disclosed oil and gas sales volumes, we estimate the company's NCI target covers just ~30% of total energy sales due to the exclusion of traded oil and gas sales. Low carbon fuel growth amplifies NCI emissions reduction compared to peers with more comprehensive coverage.

Australian company's emission target coverage lags behind international peers. Unlike the European majors, Australian oil and gas companies Santos and Woodside do not have net carbon intensity reduction targets.

[9] See " Chart: Gross emissions included in net carbon intensity vs estimated underlying emissions from energy sales , p.8

Chart: NCI targets – progress between company baseline & FY23, (%)*



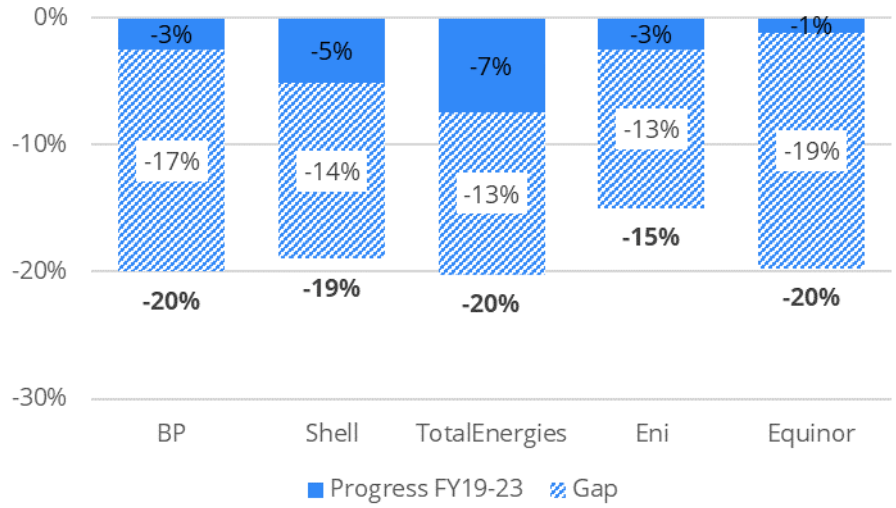
TotalEnergies and Shell have made the most progress in reducing net carbon intensity.

Shell has relied on offsets for around half this reduction.

TotalEnergies has delivered strong progress from its investment in renewables but also benefited from a narrower scope of emissions included in its target.

**Assumes upper end of range for BP and Shell*

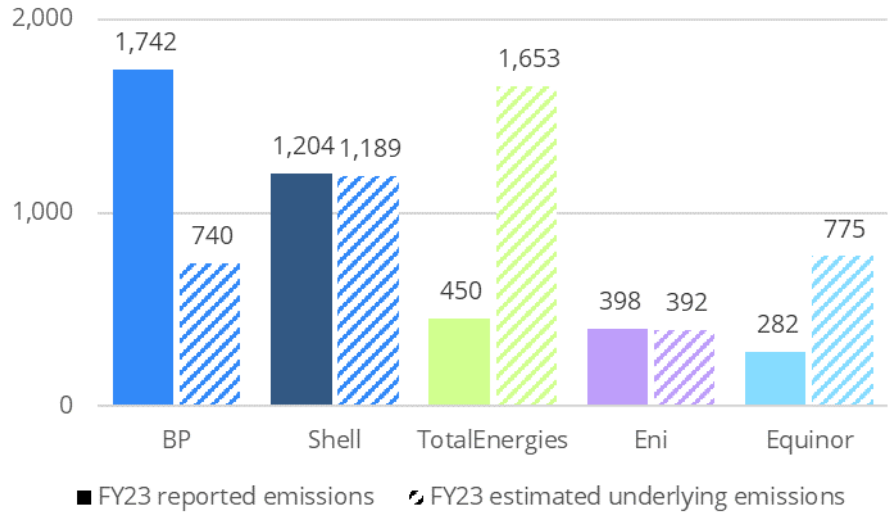
Chart: NCI targets – progress rebased, FY19- FY23, (%)*



Comparing NCI targets from a common FY19 baseline shows that TotalEnergies' target ambition is in line with peers at 20%. Progress to date falls by 7%.

**Assumes upper end of range for BP and Shell*

Chart: Gross emissions included in net carbon intensity vs estimated underlying emissions from energy sales (Mt CO2e)



One of the drivers that impacts NCI reduction is using different boundaries to dictate emissions included.

BP, Shell and Eni appear to have the most comprehensive methodology for measuring emissions from energy sales.

We estimate TotalEnergies reports 27% of emissions from energy sales and Equinor 36%.

Source: Company data, Accela Research estimates

2.2 Impact of low carbon volume targets on emission intensity

Key findings:

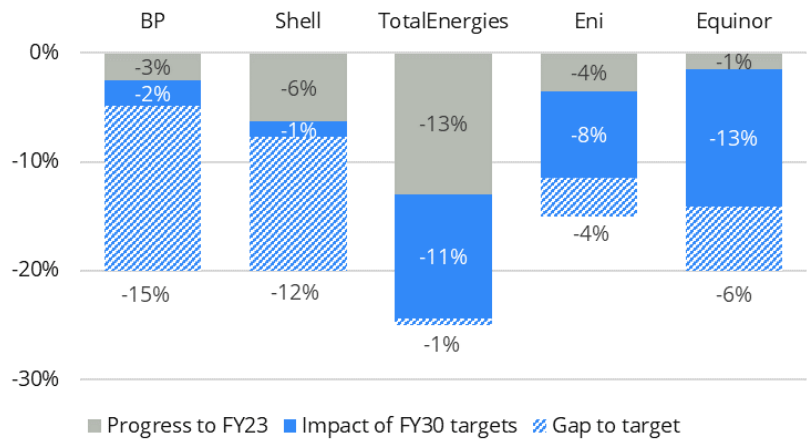
TotalEnergies' comes closest to meeting its NCI: After accounting for FY30 fuel targets[10], we forecast that TotalEnergies will achieve -24% reduction in its reduction (out of -25% on FY15). 6.6% of reductions will be driven by ambitious renewables targets (100 GW gross capacity by FY30, 100 TWh of generation).

BP's NCI target most at risk: BP's is expected to meet only ~5% of its -20% target by FY30, the least progress of its peers. This is due to limited progress on its NCI to date (-3%) and its current low carbon volume targets being insufficient to significantly dent the emission intensity of its total energy sales (including traded oil and gas). Shell's NCI target also appears at risk (gap of -12% by FY30) due to the absence of low carbon volume targets for FY30. We recognise that levers available to decarbonise trading portfolios will differ from those used for decarbonising oil and gas production. We expect that as majors establish power infrastructure, power trading will become an increasing proportion of traded sales.

Carbon capture and storage and offsets likely to play a material role in meeting intensity targets: To date, Eni (-2.4% NCI impact on FY23) and Equinor (-2.8%) are the companies most reliant on CCS targets for NCI reductions. TotalEnergies' has specified up to 10 Mtpa of carbon offsets starting from FY30, which will result in a -1.5% NCI between FY23-30. It is likely that other majors, such as Shell, will also rely on offsets to contribute to NCI reductions, however discrete FY30 targets have not been quantified. Offsets and CCS are expected to contribute a 3% reduction in NCI from FY23-30.

Net carbon footprint (NCF) accounting continues to play a significant role in the impact of FY30 levers: Companies that exclude certain third-party sales (materially traded sales), such as TotalEnergies and Equinor, appear to have an advantage in making progress on NCI targets between FY23-30. Impact of levers for TotalEnergies (-11%) and Equinor (-14%) outpace peers (-1% to -8%).

Chart: NCI targets – progress and low carbon levers, baseline & FY23, (%)



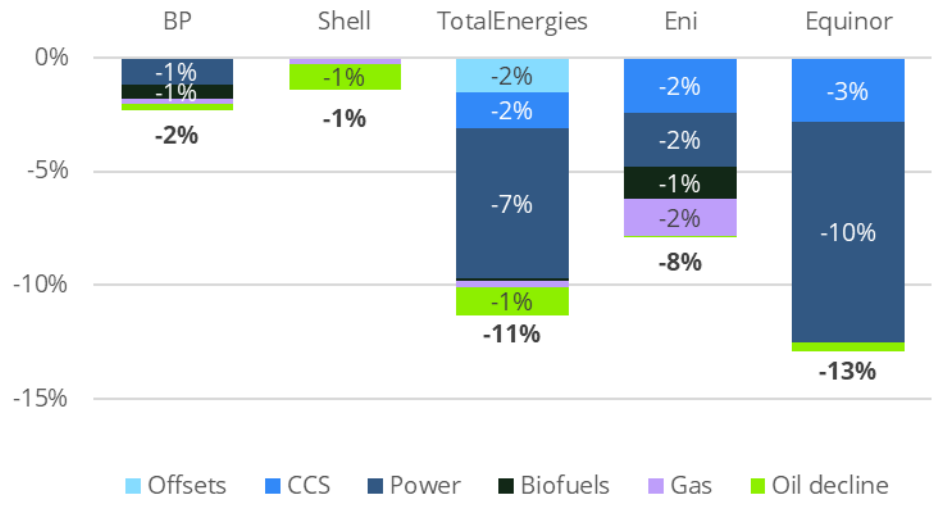
Based on low carbon volume targets to FY30, all European majors will not meet their existing NCI target.

TotalEnergies will come closest to meeting its FY30 target (-24% of 25%), with the use of a narrower scope of emissions amplifying its progress.

Source: Company data, Accela Research estimates

[10] Where a company has not provided an explicit volume target or ambition, this has not been included in the analysis

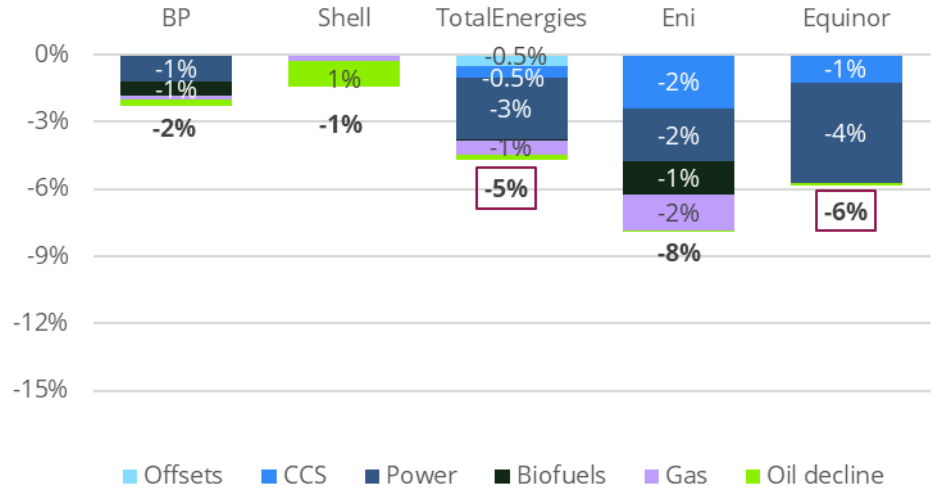
Chart: Impact of individual levers on NCI, FY23-30 (%)



Low carbon levers, particularly power, impact NCI reductions to FY30 for TotalEnergies (-11%) and Equinor (-13%). This is largely due to exclusions of certain third-party and traded sales from NCI coverage.

Offsets and CCS can play a significant role in reducing NCI, accounting for a combined 4% reduction for TotalEnergies, -2% for Eni, and -3% for Equinor.

Chart: Impact of individual levers on NCI incorporating traded oil and gas sales, FY23-30 (%)



By adding back in excluded sales for TotalEnergies and Equinor, the impact of low carbon levers reduces to -5% vs -11% for TotalEnergies, and -6% vs -13% for Equinor.

Source: Company data, Accela Research estimates

2.3 The role of gas as a Net Carbon Intensity lever

Key findings:

Selling more gas can only do so much: As majors look to weight their portfolios more heavily to gas, we find that increasing the weighting of gas in a portfolio by 10% by FY30 will result in a minimal reduction of 2-4% in European majors' net carbon intensities (with all else equal).

Even at ~80% gas sales, intensity reductions remain insufficient: An additional 30% weighting to gas sales would put European majors' gas sales ~70% to 80%. Even with a portfolio shift this dramatic, resultant NCI reductions would be ~9% compared to the additional 10%-20% reduction in net carbon intensity needed from FY23-30.

In contrast, increasing the share of renewables in energy portfolios by 10% would reduce net carbon intensity by ~13% providing more value for decarbonisation.

Table: How net carbon intensity declines with changing energy sale portfolio mix (%)

	BP	Shell	TotalEnergies	Eni	Equinor
Share of gas in energy sales portfolio in FY23?					
Percentage portfolio gas (%)	50%	51%	50%	43%	47%
Gas, share increases by:					
By 5%	-1.7%	-2.4%	-0.8%	-1.5%	-1.5%
By 10%	-3.1%	-3.8%	-2.1%	-3.0%	-3.0%
By 20%	-5.9%	-6.4%	-4.9%	-6.0%	-6.0%
By 30%	**-8.8%**	**-9.1%**	**-7.6%**	**-9.0%**	**-9.0%**
Renewables share increases by 10%	**-13%**	**-14%**	**-13%**	**-13%**	**-12%**

Source: Company data, Accela Research estimates

2.4 Capital expenditure needed to meet Net Carbon Intensity targets

Key findings:

Up to ~US$300bn capital investment in real low carbon alternatives is needed between now and FY30 to shift the dial on carbon intensity. This reflects the upfront cost needed to meet FY30 intensity targets for European majors assuming uptake of 50:50 split of solar PV and onshore wind. We have assumed the midpoint of IEA NZE's current and FY30 capital costs for renewables, ~US$683/kW for solar and ~US1,255/kW for onshore wind. Offshore wind would requiring higher capital expenditure. Bioenergy would require less capex but carry higher operating expenses.This estimate does not consider any capex that has already been spent on developing the renewables pipeline to date.

This equates to 309GW of combined net renewables: We find that majors would require the equivalent of an estimated 309 GW of renewables or ~5,130kboe/d of bioenergy between the 5 companies to reach current FY30 targets. This does not account for any current FY30 low carbon targets. In renewables, BP would require the most (128GW), followed by Shell (88 GW), TotalEnergies (39GW), Equinor (32GW) and Eni (22 GW). Differences in renewable requirements are driven by the existing NCI gap between FY23-30 and scope of energy sales covered in the NCI.

Operational costs mean a combination of renewables and bioenergy may be needed: Although capital costs are higher for renewables, bioenergy is more opex intensive, up to ~5x[11]. Additionally, feedstock cost and availability are limiting factors for bioenergy production, with feedstock costs historically accounting for up to 1/3rd of total bioenergy costs per MWh[12].

Current guidance indicates a ramp-up in low carbon spending is required: If companies ramp up their investment to ~$300bn ($43bn p.a) to meet current targets, these five companies would, on average, contribute 4-6% of the annual global investment needed in renewable power to achieve a 1.5C between now and 2030[13]. Based on current guidance to FY30, companies are expected to spend~$166 bn (FY24-30). This leaves an estimated $134 billion gap in low carbon investment between now and FY30.

Net Carbon Footprints are not like-for-like, impacting the level of low carbon products needed to displace oil and gas:

- **Traded sales for Shell, BP and Eni may naturally shift as demand decarbonises**: Removing estimated traded sales for BP, Shell, and Eni decreases the amount of cumulative investment needed for the European majors to a combined $240bn (247 GW of renewables). By company this implies a gap of $85bn for BP (vs $124bn), $71bn for Shell (vs $85bn), and $17bn for Eni (vs $31bn)**.** Combined, this brings the required amount of renewable capacity across the sector down to 247 GW, with an implied investment of $240bn ($74bn investment gap).
- **Larger NCI footprints increase investment needed:** We estimate that adding back excluded sales into Net Carbon footprints for TotalEnergies and Equinor increases the amount of investment needed to $106bn for TotalEnergies (vs $38bn), and to $71bn for Equinor (vs $31bn). Combined, the total low carbon capex required to meet FY30 NCI targets increases by more than $100bn to ~$408bn ($242bn investment gap).

Table: Low carbon levers that are needed to meet FY30 NCI targets, FY24-30

	BP	Shell	TotalEnergies	Eni	Equinor
What levers could companies use to achieve targets?					
Existing NCI gap to FY30 *	**-17%**	**-14%**	**-12%**	**-11%**	**-19%**
Could be met with:					
Renewables addition (GW)**	128	88	39	22	32
Biofuels blending (kb/d)***	2481	1737	779	524	653
Oil sales decline	>100%	88%	90%	-82%	>100%

Source: Company data, Accela Research estimates | *Does not include the impact of existing FY30 fuel targets **Renewables assume 100% equity share of production and 40% load factor ***Assumes biofuels are blended with oil products, displacing crude oil

Table: Capex needed to meet FY30 NCI targets, FY24-30 ($USbn)

	BP	Shell	TotalEnergies	Eni	Equinor	Sector
Existing cumulative capex commitments low carbon FY24-30*	53	33	42	12	26	**166**
Capex to meet net carbon intensity targets FY24-30						
Additional low carbon capex required	71	53	-	9	5	**134**
Total low carbon capex	124	85	38	21	31	**~300**

Source: Company data, Accela Research estimates, IEA |*Where capex guidance is unavailable, the guidance for the most recent year is used

[11] IEA Bioenergy, Advanced Biofuels – Potential for Cost Reduction, 2020, IEA WEO23
[12] IEA Bioenergy, Advanced Biofuels – Potential for Cost Reduction, 2020
[13] BloombergNEF, Investment Needs of a 1.5°C World, 2022.

3. Progress on transitioning portfolios

In FY23, the European majors spent $18.9bn on low carbon, a ~24% increase on FY22. Current guidance indicates this will ramp up to ~$24bn p.a by FY25. For Australian majors, who commenced disclosure only in FY22, low carbon capex increased 80% to $0.4bn. Despite this increase, the sales portfolio mix of oil and gas companies remains primarily fossil fuels. We find European majors who commenced their transition journey earlier are now better positioned to articulate their low carbon mix and capex by FY30. In contrast, Australian majors are still refining their low carbon proposition, refraining away from providing an FY30 view of their production/sales mix.

Key findings:

FY23 Portfolios remain predominantly fossil fuels: In FY23, the sales portfolio of all majors was predominantly oil and gas (~95%-100%). Shell currently has the highest proportion of low carbon in its sales portfolio (4.6% in FY23) while Equinor has the lowest proportion of low carbon (0.2%). Both Woodside and Santos have no low carbon sales offerings nor targets.

Most majors guiding to increased low carbon capex to FY30: Between FY22-23, all majors have spent a total of $34bn on low carbon. Shell and TotalEnergies have spent the most (~$9.9bn each). Based on forward guidance provided by companies[14], we estimate ~$166 bn to be spent on low carbon between FY24-30. The average annual spend is expected to be increased or sustained across all majors except Shell, which has guided to a 16% reduction in its FY24-25 capex relative to FY23.

Despite increased capex, FY30 sales mix remains unaligned with net-zero: Based on FY30 targets and guidance, we find there will be little change in the sales mix portfolio of European majors. BP is projected to have the highest proportion of low carbon in its sales mix (6.5%), followed closely by TotalEnergies and Eni (both 5.7%). Renewable power will make up more than 50% of low carbon sales for most majors except Eni (40% renewable, 60% biofuels).

Ramp up needed to deliver on targets: For Eni (5.6% low carbon in FY30) and BP (6.5%), their portfolio mix will be delivered by their renewable targets (10-15GW by FY30) and bioenergy targets (both ~90kboed). We find both companies must deliver 4-6x of their current production levels to reach these ambitions. Similarly, TotalEnergies will need to grow its current capacity x4 times to meet its 100GW target. While its current renewable ambition for installed capacity is ~6-10x greater than its peers, it will seek to divest stakes in these assets, maintaining 100TWh of net electricity production. The current impact of this 100TWh target on its FY30 low carbon sales mix (5.7% low carbon) is muted compared to NCI changes due to its oil and gas underlying sales mix and growth ambitions for oil and gas.

For Equinor, its FY30 portfolio (5.3% low carbon) is delivered solely by its renewable target (16GW by FY30). The company, however, has yet to make significant progress in growing its capacity (0.9GW in FY23).

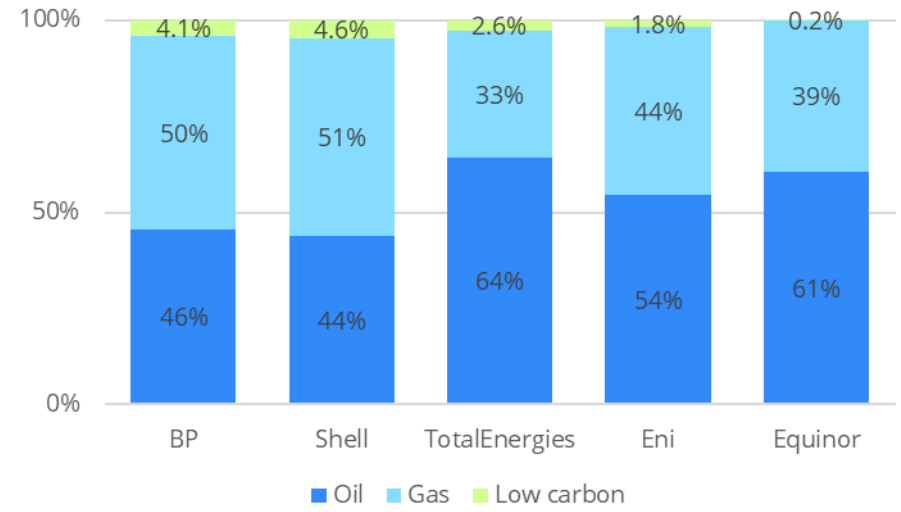
Due to a lack of low carbon volume targets for FY30 from Shell its portfolio remains unchanged for FY30 (4.6% low carbon).

Lower cash flow could put pressure on low carbon capex: In FY23, European majors came off a period of high earnings, with free cash flow down ~47% on FY22. Despite this, across the group distributions have increased (+2% on FY22) to $74bn, alongside group capex (+~15% on FY22) to $87bn. With distributions now between x1.5 to 2 times greater than free cash flow for some majors like BP and Equinor, this is unlikely to be sustainable leading to potential reductions in either distributions or capex allocation in the near future.

Accela estimates vary from company guidance: Our estimates differentiate between gas power and renewable power for low carbon sales, in contrast to Shell and TotalEnergies who report all electricity sales as low carbon. Shell indicates low carbon sales made up ~9% of its portfolio in FY23, and guides to ~14% in FY30. TotalEnergies reports 10% in FY23, guiding to 20% in FY30. Additionally, for TotalEnergies and Equinor, we have added back excluded sales from net carbon footprint calculations.

[14] Where guidance is unavailable, we assume use guidance of the most recent year

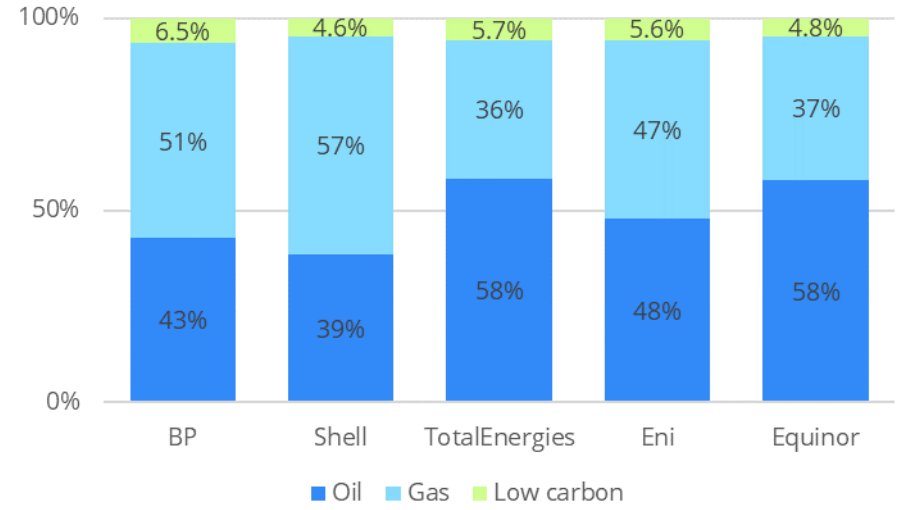
Chart: FY23 estimate energy sales portfolio[15]



Sales portfolios of most European majors remain weighted towards oil and gas. Shell has the highest proportion of low carbon (5%), primarily related to renewable power sales.

Note: TotalEnergies' and Equinor's total portfolios are estimated based on reported sales volumes.

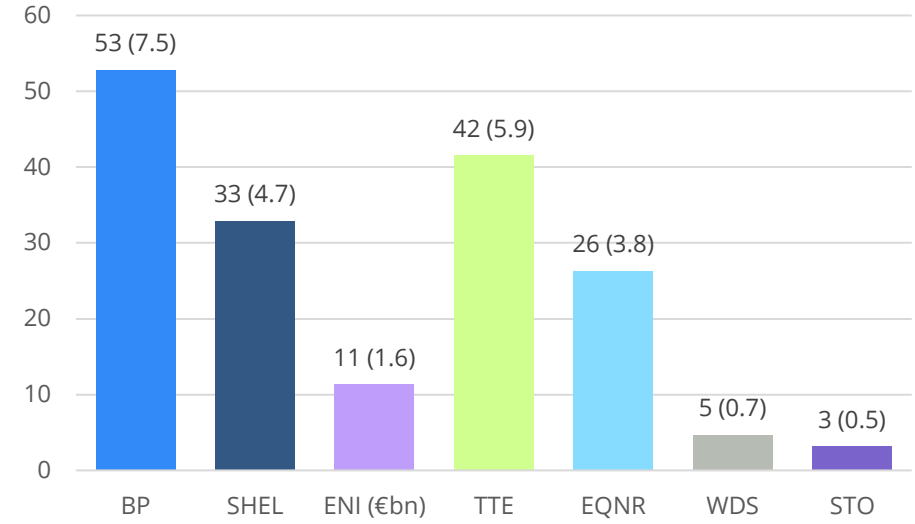
Chart: FY30 energy sales portfolio implied by targets[15]



Based on targets, in FY30, ~4.6% (Shell) to ~6% (BP) of European majors' sales mix will be low carbon.

Renewable power sales are expected to be a major component of the low carbon sales mix for most majors . The exception is Eni and BP for which biofuels make up ~40-54% of low carbon sales.

Chart: Estimated cumulative capex on low carbon (FY24-30), US$, Eni (€bn)



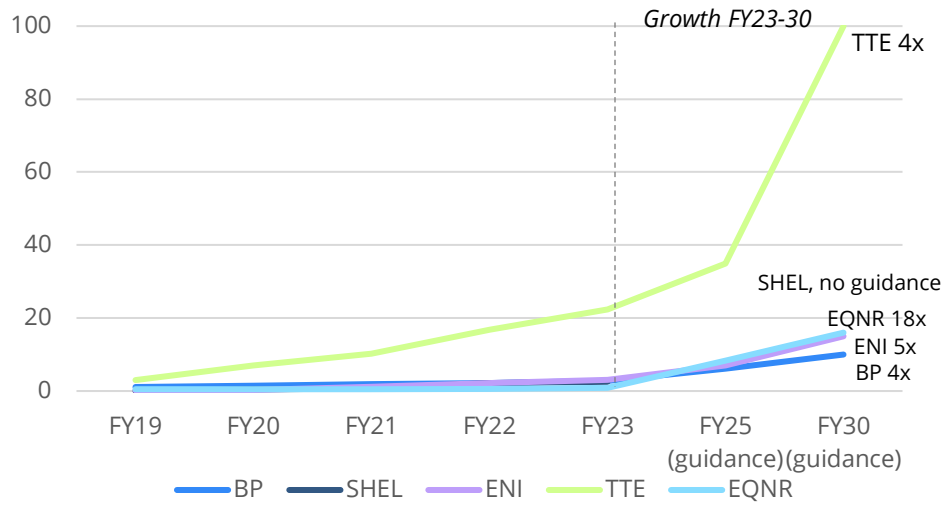
Source: Company data, Accela Research estimates

Between FY24-30, we estimate BP will spend the most on low carbon ($53bn) followed by TotalEnergies ($42bn).

Woodside (WDS) and Santos' (STO) spending based on guidance to invest up to $5bn (by FY30) and $3.3-4.5bn (by ~FY33) in low carbon segments, respectively. *Note: where guidance is unavailable, the guidance for the most recent year is used. Average annual spend to FY30 shown in brackets*

[15] EV charging has not been included in estimated mixes.

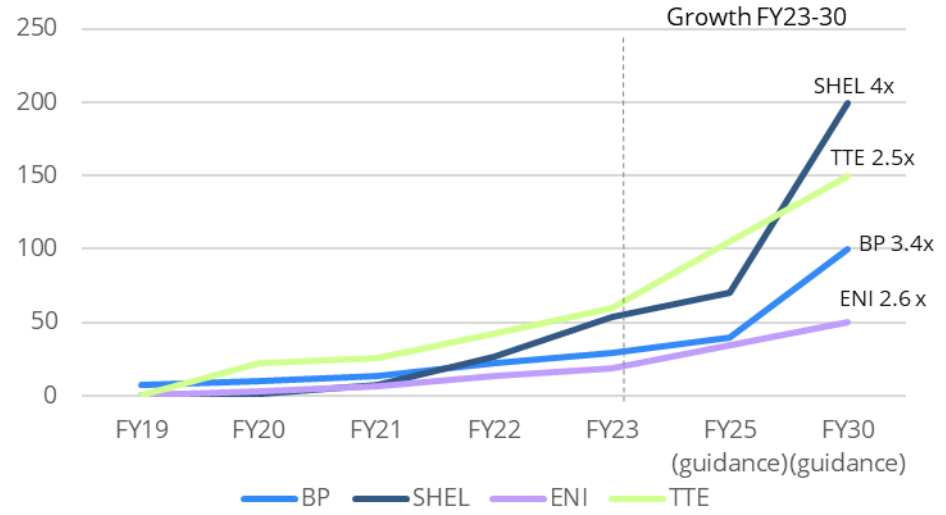
Chart: Renewables installed capacity (GW)



TotalEnergies (TTE) showed the largest growth in renewable capacity in FY23 (+6GW), and continues to lead in its renewable target (100GW by FY30).
Equinor, Eni and BP have lower renewable ambitions, targeting 10-16GW by 2030.

Shell has not provided guidance for its renewable pipeline but in FY23 had 2.5GW of capacity. WDS and STO are not pursuing renewables as part of their decarbonisation strategy

Chart: EV charge points ('000s)

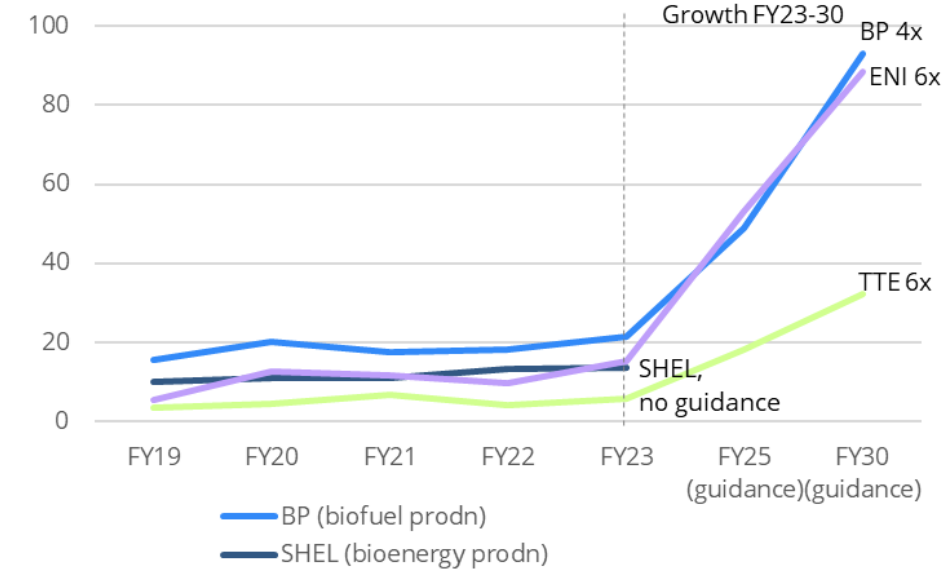


Shell's target for 200k EV charge points by FY30 is the most ambitious of the majors followed by TTE (150k)

Between FY23 and FY22, Shell doubled its EV charging points (+27k), exceeding growth by other majors

WDS and STO are not pursuing EV charging as part of their decarbonisation strategy.

Chart: Bioenergy (kboe/d)



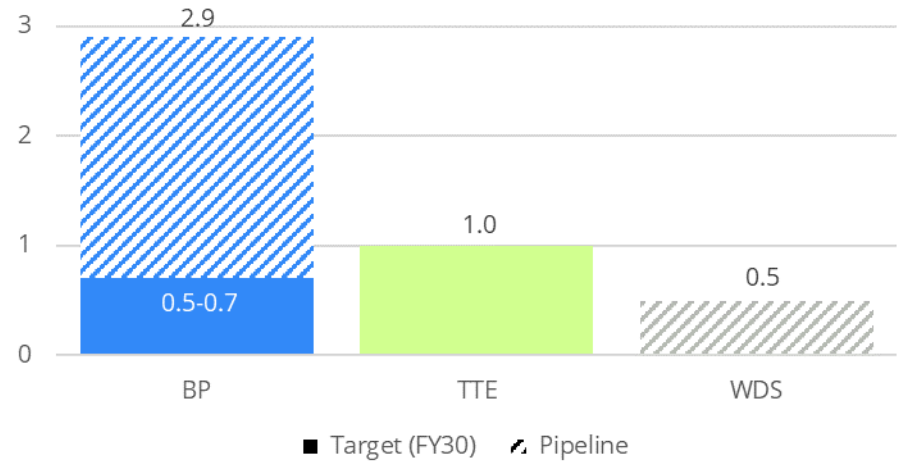
BP, and Eni have guided to similar FY30 production targets in absolute terms (~90 k boe/d).

Shell has not provided any FY30 guidance for FY30 but produced ~14 kboe/d in FY23.

WDS and STO are not pursuing bioenergy as part of their strategy.

Source: Company data, Accela estimates

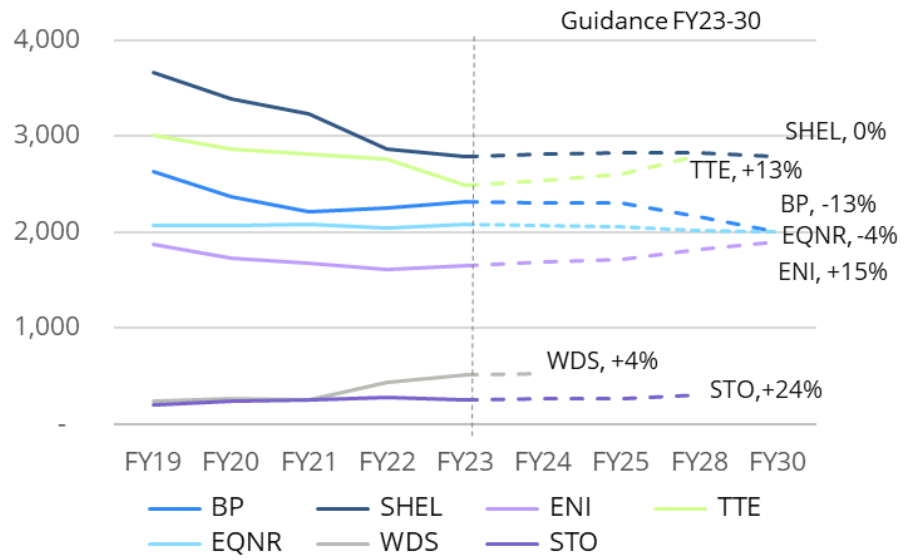
Chart: Hydrogen pipelines and FY30 targets (Mtpa)



Only BP and TTE have set quantifiable hydrogen targets for FY30. Woodside does not have a target but a current pipeline of 0.5 Mtpa.

None of the European majors have disclosed progress on production to date.

Chart: Oil and gas ambition (kboe/d)

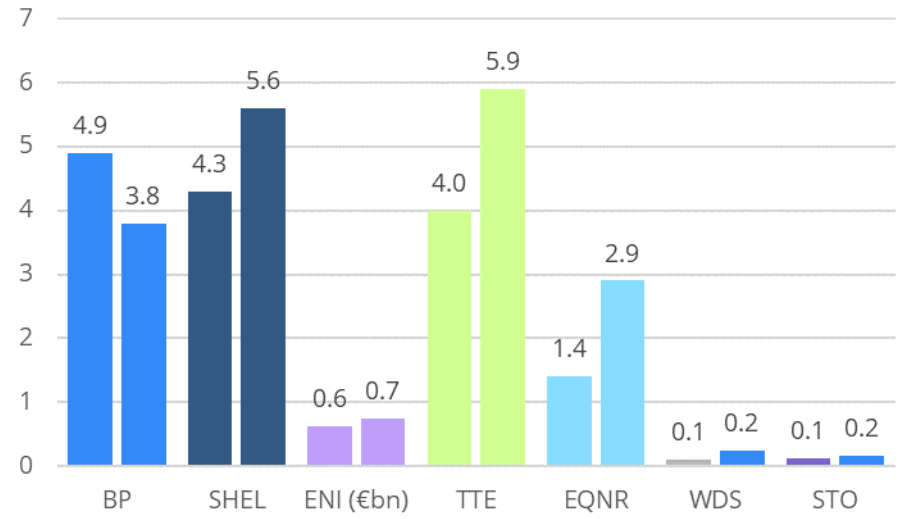


The only majors guiding to reduced production between FY23-30 are BP (-13%) and Equinor (-4%).

TTE production is projected to increase 13% to FY28, while Eni will grow +15% to FY30. Shell has guided to flat oil production, but with plans to grow LNG production 25-30% (FY22-30), total production could grow 0-8%.

WDS has not provided production guidance past FY24.

Chart: Low carbon capex FY22-FY23 (US$bn), Eni (€bn)



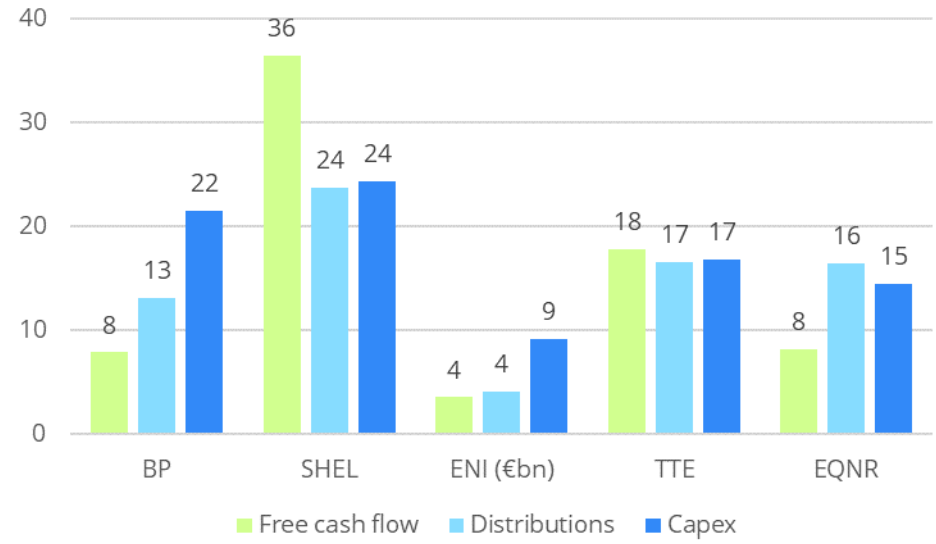
Low carbon capex totalled $19bn in FY23, a 25% increase on FY22. Woodside's increase was the largest at 135%, followed by Equinor (+107%) and TotalEnergies (+47%).

Across FY22-23, a total $35bn has been spent on low-carbon. The biggest spenders have been Shell and TTE (~$9.9bn each).

Distributions continue to exceed low carbon capex (~x4 times greater).

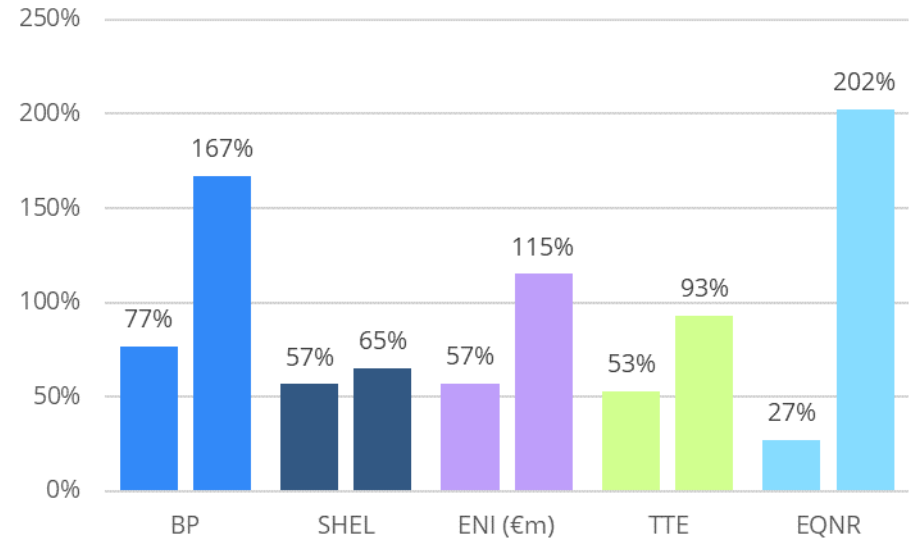
Source: Company data, Accela estimates

Chart: Free cash flow, distributions, and capex FY23 (US$bn), Eni (€bn)



In FY23, distributions and capex exceeded the free cash flow of all majors except Shell and TTE.

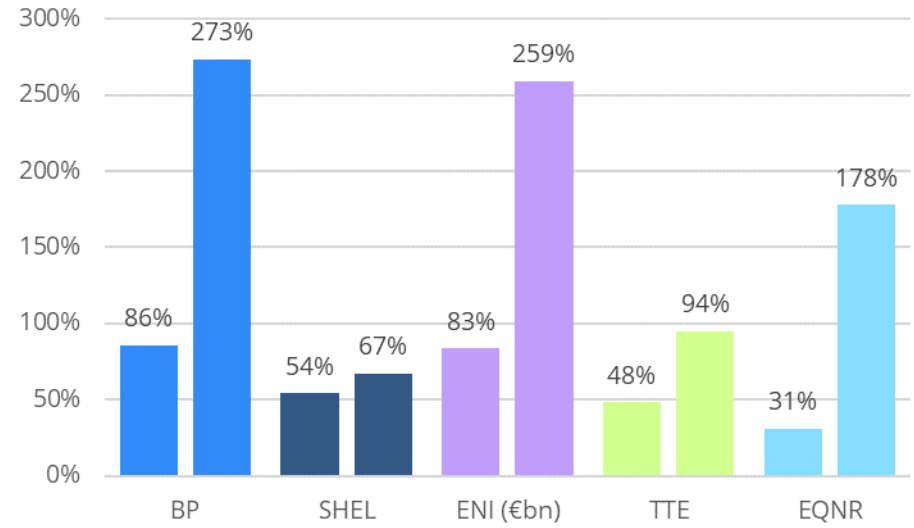
Chart: Distributions relative to free cash flow FY22-23 (%)



As of FY23, distributions are now a higher proportion of free cash flow.

Distributions by Equinor were x2 more its FY23 cash flow followed by BP x1.7.

Chart: Group capex relative to free cash flow (%, FY22-23)



In FY23, BP and Eni spent ~x3 more capex relative to free cash flow.

Source: Company data, Accela estimates

4. Appendix

All currency is US$ unless stated otherwise.

4.1 Transition League Table criteria

Metric	BP	Shell	Eni	TotalEnergies	Equinor
Emissions progress (FY19-23)					
Net carbon intensity	-3%	-5%	-3%	-7%	-1%
Absolute, Scope 1 and 2	-41%	-29%	-31%	-23%	-22%
Absolute, scope 3	-13%	-26%	-22%	-15%	4%
Target ambition (FY19-30)					
Net carbon intensity	-20%	-19%	-15%	-20%	-20%
Absolute Scope 1 and 2	-50%	-48%	-70%	-44%	-44%
Absolute, Scope 3	-30%	-15-20%*	-34%	-2%	-
Target coverage					
Emissions covered by absolute targets	20%	48%	100%	86%	4%
Underlying emissions %	100%	100%	100%	~30%	~40%
Oil and gas progress					
FY19-FY23 growth	-12%	-24%	-12%	-18%	0%
Oil and gas ambition					
FY23-30 growth	-13%	0%	15%	13%	-4%
Low carbon capex progress					
Low carbon capex (% total FY23)	18%	23%	8%	35%	20%
Low carbon capex ambition					
Guidance (% total FY25)	50%	19%	28%	33%	30%
Guidance (% total FY30)	50%	-	-	33%	50%
Low carbon energy progress					
Renewables pipeline (GW)	64.5	46.8	20.0	80.1	9.4
Hydrogen pipeline (Mt pa)	2.9	-	-	0.6	-
Bioenergy (kboe/d)	21.6	13.7	15.3	5.8	-
EV charging (no. points)	29,000	54,000	19,000	60,000	-
Low carbon energy targets					
Renewables target (GW)	10.0	-	15.0	100.0	16.0
Hydrogen target (Mt pa)	0.7	-	-	1.0	-
Bioenergy target (kboe/d)	93.0	-	88.4	32.2	-
EV charging target (no. points)	100,000	200,000	-	150,000	-

Source: Company data, Accela Research estimates | *Ambition only, on FY21. Defaulted to lower ranking behind set targets| Green reflects leading performance and purple reflects lagging performance within a category.

4.2 Low carbon assessments

Table: Low carbon segment offerings

	BP	Shell	Eni	TotalEnergies	Equinor	Woodside	Santos
Low carbon segment name	Transition growth engines	Low carbon energy solutions	Green value chain	Low carbon energies	Renewables and low carbon solutions	New Energy	Santos Energy Solutions
Decarbonisation levers							
Renewables and storage							
Bioenergy							
Hydrogen							
CCUS/CCS							
EV charging and convenience							
Offsets	Not disclosed		Not disclosed		Not disclosed		
Synthetic fuels (e-fuels)							

Source: Company data, Accela Research estimates

Table: Category and sub indicators used to assess transition plans.

Category	Sub-indicator
Emissions	• Emission reduction progress between FY19-23 (Scope 1 and 2, Scope 3, NCI) • Target ambition - absolute and intensity targets rebased to FY19 (Scope 1 and 2, Scope 3, NCI) • Absolute target coverage as percentage of emissions and underlying emissions (FY23) Note: Reliance on offsets divestments were excluded from the criteria due to a lack of disclosures across the sector.
Oil and gas decline	• Percent decline of oil and gas production between FY19-23 • Implied oil and gas production decline between FY23-30
Low carbon capex	• FY23 low carbon capex (% of group) • FY25 low carbon capex targets (% of group) • FY30 low carbon capex targets (% of group)
Low carbon volumes:	• Progress as of FY23 for low carbon (renewable pipeline, hydrogen pipeline, bioenergy production, EV charge points). • Low carbon targets for FY30 (renewable capacity, hydrogen production, bioenergy, EV charging).

Source: Accela Research

4.3 Company tables

BP

AGM date:	Climate transition plan:	Say on Climate Vote:
25 April 2024	Net Zero Ambition Progress Update – March 2024	No

Table: Decarbonisation targets and emission performance

	Baseline		Actuals					Targets		
	Year	Emissions	FY19	FY20	FY21	FY22	FY23	FY25	FY30	FY50
Scope 1 and 2, operational – Absolute (MtCO2e)										
Emissions	**2019**	**54.5**	**54.5**	**45.5**	**35.6**	**31.8**	**32.1**	**43.6**	**27.3**	**-**
% change p.a			-	-17%	-22%	-11%	1%			
% change base year/FY19			0%	-17%	-35%	-42%	-41%	-20%	-50%	-100%
Scope 1 and 2, equity – Absolute (MtCO2e)										
Emissions	**2019**	**51.7**	**51.7**	**45.5**	**39.1**	**35.5**	**33.4**			
% change p.a			-	-12%	-14%	-9%	-6%	*No target*		
% change FY19			0%	-12%	-24%	-31%	-35%			
Scope 3, production – Absolute (MtCO2e)										
Emissions	**2019**	**361**	**361.0**	**328.0**	**304.0**	**307.0**	**314.9**	**306.9**	**252.7**	**-**
% change p.a			-	-9%	-7%	1%	3%			
% change base year			0%	-9%	-16%	-15%	-13%	-15%	-30%	-100%
Scope 3, third party sales – Absolute (MtCO2e)										
Emissions	**2019**	**1,597**	**1,597**	**1,379**	**1,385**	**1,315**	**1,395**			
% change p.a			-	-14%	0%	-5%	6%	*No target*		
% change from FY19			-	-14%	-13%	-18%	-13%			
Total emissions										
Emissions	**2019**	**2,012**	**2,012**	**1,753**	**1,725**	**1,654**	**1,742**			
% change p.a			-	-13%	-2%	-4%	5%	No target		
% change from FY19			-	-13%	-14%	-18%	-13%			
Net Zero Sales , Scope 1,2,3 – Intensity (g CO2e/MJ)										
Intensity	**2019**	**79**	**79.0**	**77.0**	**78.0**	**77.0**	**77.0**	**75.1**	**63.2**	**-**
% change p.a				-3%	1%	-1%	0%			
% change FY19/ base year			0%	-3%	-1%	-3%	-3%	-5%	-20%	-100%
Offsets disclosed (MtCO2e)	None disclosed									

Source: Company data, Accela Research estimates

Table: Capital expenditure (US$bn)

	Actual					Guidance	
	FY19	FY20	FY21	FY22	FY23	FY25	FY30
Low carbon segment (Renewables, Hydrogen, CCS, Power trading)	**0.2**	**0.6**	**1.6**	**1.0**	**1.3**	**3-5bn**	**3-5bn**
% of Group	1%	4%	12%	6%	6%		
plus bio energy, EV charging, future mobility	0.4	0.2	0.6	3.0	1.3		
Low carbon activities	**0.6**	**0.8**	**2.2**	**4.0**	**2.5**		
% of Group	3%	5%	17%	24%	12%		
plus convenience	-	0.3	0.2	0.9	1.3		
Transition Growth Engines	**0.6**	**1.0**	**2.4**	**4.9**	**3.8**	**6-8bn**	**7-9bn**
% of Group	3%	7%	19%	30%	18%		
Upstream	**15.9**	**9.8**	**8.0**	**8.5**	**9.3**		
% of Group	82%	70%	62%	52%	43%		
Midstream/Downstream (not in low carbon energy solutions)	**2.9**	**3.5**	**2.6**	**3.8**	**9.7**		
% of Group	15%	25%	20%	23%	45%		
Group	19.4	14.1	12.8	16.3	21.5	**14-18**	**14-18**

Source: Company data, Accela Research estimates

Table: Fuel volumes

	Units	Actual					Guidance	
		FY19	FY20	FY21	FY22	FY23	FY25	FY30
Oil and gas production	**k boe/d**	**2,637**	**2,375**	**2,219**	**2,254**	**2,312**	**2,300**	**2,000**
% change pa/CAGR FY23-30			-10%	-7%	2%	3%	0%	-2%
LNG portfolio	**Mt p.a**	**15**	**20**	**18**	**19**	**23**	**25**	**30**
% change pa/CAGR FY23-30			33%	-10%	6%	21%	4%	4%
Refining throughput	**k b/d**	**1,749**	**1,627**	**1,594**	**1,504**	**1,411**		
% change pa/CAGR FY23-30			-7%	-2%	-6%	-6%		
Oil and gas sales (based on disclosure)	**k boe/d**	**4,520**	**3,890**	**3,954**	**4,064**	**4,098**		
% change pa/CAGR FY23-30			-14%	2%	3%	1%		
Bio energy production	**k boe/d**	**16**	**20**	**18**	**18**	**22**	**49**	**93**
% change pa/CAGR FY23-30			30%	-13%	4%	17%	51%	23%
Renewable installed capacity	**GW**	**1.1**	**1.5**	**1.9**	**2.2**	**2.7**		**10.0**
% change pa/CAGR FY23-30			32%	31%	16%	23%		21%
Traded electricity	**TWh**	**250**	**214**	**202**	**n.d**	**n.d**		
% change pa/CAGR FY23-30			-14%	-6%	n/a	n/a		
EV Charge points	**No.**	**7,500**	**10,100**	**13,100**	**22,000**	**29,000**	**40,000**	**100,000**
% change pa/CAGR			35%	30%	68%	32%	17%	19%
Hydrogen	**Mt p.a**	**n.d**						**0.5-0.7**

Source: Company data, Accela Research estimates

Shell

AGM date:	Climate transition plan:	Say on Climate Vote:
21 May 2024	Shell Energy Transition Strategy 2024	Yes

Table: Decarbonisation targets and emission performance

	Baseline		Actuals					Targets		
	Year	Emissions	FY19	FY20	FY21	FY22	FY23	FY25	FY30	FY50
Scope 1 and 2, operational – Absolute (MtCO2e)										
Emissions	**2016**	**83**	**80**	**71**	**68**	**58**	**57**		**41.5**	**0**
% change p.a			-	-11%	-4%	-15%	-2%			
% change base year			-4%	-14%	-18%	-30%	-31%		-50%	-100%
% change from FY19			-	-11%	-15%	-28%	-29%		-48%	-100%
Scope 3, equity – Absolute (MtCO2e)										
Emissions	**2016**	**1,545**	**1,551**	**1,305**	**1,299**	**1,174**	**1,147**	*No target*		
% change p.a			-	-16%	0%	-10%	-2%			
% change base year			0%	-16%	-16%	-24%	-26%			
% change from FY19			-	-16%	-16%	-24%	-26%			
Ambition only Scope 3, oil products only – Absolute (MtCO2e)										
Emissions	**2021**	**569**	**-**	**-**	**569**	***not disclosed***	**517**		**455**	
% change p.a			-	-	-	-	-			
% change base year			-	-	-	-	-9%		-15-20%	
% change from FY19			-	-	-	-	-			
Net Carbon Intensity, Scope 1,2,3 – Intensity (g CO2e/MJ)										
Intensity	**2016**	**79**	**79**	**78**	**75**	**77**	**76**	**68.7**	**63.2**	**0**
% change p.a			-	-4%	3%	-1%	-3%			
% change base year			-1%	-5%	-3%	-4%	-6%	-9-13%	-15-20%	-100%
% change from FY19			-	-4%	-1%	-3%	-5%	-12%	-19%	
GHG emissions included in NCI (net)		**1,645**	**1,646**	**1,384**	**1,375**	**1,240**	**1,185**			
Offsets disclosed (MtCO2e)		**0.0**	**2.2**	**3.9**	**5.1**	**4.1**	**20.0**			

Source: Company data, Accela Research estimates

Table: Capital expenditure (US$bn)

	Actual					Guidance
	FY19	FY20	FY21	FY22	FY23	FY24-25
By segment						
Renewables & Energy Solutions	**1.1**	**0.9**	**2.4**	**3.5**	**2.7**	**4-5**
% of Group	5%	5%	12%	14%	11%	20%
o/w: Low carbon energy solutions (power, H2 & CCS)				2.9	2.3	
Marketing	**1.8**	**1.8**	**2.3**	**4.8**	**5.6**	**3**
% of Group	7%	10%	12%	19%	23%	12%
o/w: Low carbon energy solutions (EVs, bioenergy)				1.4	3.3	
Non-energy products				1.5	0.9	
Chemicals & Products	**7.3**	**4.2**	**5.2**	**3.8**	**3.2**	**3-4**
% of Group	30%	24%	26%	15%	13%	16%
o/w: Non-energy products				2.4	1.4	
Upstream & Integrated gas	**13.3**	**10.7**	**9.7**	**12.4**	**12.5**	**13**
% of Group	56%	60%	49%	50%	51%	52%
Corporate	**0.4**	**0.3**	**0.2**	**0.3**	**0.4**	
% of Group	2%	1%	1%	1%	2%	
By fuel type						
Low carbon energy solutions				**4.3**	**5.6**	**2.2-4.7**
% of Group				17%	23%	~19%*
Oil & gas				**20.5**	**18.8**	**20**
% of Group				83%	77%	81%
***o/w:* non-energy products**				**3.9**	**2.3**	
% of Group				16%	9%	
Group	**23.9**	**17.8**	**19.7**	**24.8**	**24.4**	**22-25**

Source: Company, Accela Research estimates |*Shell capex assumes the upper bounds of guidance provided and accounts for spend in FY23 (~$5.6bn)

Table: Fuels

		Actual					Guidance	
	Units	FY19	FY20	FY21	FY22	FY23	FY25	FY30
Oil and gas production	**k boe/d**	**3,665**	**3,386**	**3,237**	**2,863**	**2,791**		**2,791**
% change p.a, FY23-30 CAGR			-8%	-4%	-12%	-3%		0%
Oil and NGLs	**k boe/d**	**1,875**	**1,803**	**1,739**	**1,506**	**1,505**		**1,400**
% change p.a, FY23-30 CAGR			-4%	-4%	-13%	0%		-1%
Gas production*	**k boe/d**	**1,790**	**1,583**	**1,498**	**1,357**	**1,286**		**1,391-1,491**
% change p.a, FY23-30 CAGR			-12%	-5%	-9%	-5%		1%-2%
LNG portfolio	**Mt p.a**	**74**	**72**	**64**	**66**	**67**		**86**
% change p.a, FY23-30 CAGR			-3%	-11%	3%	2%		4%
Refining throughput	**k b/d**	**2,564**	**2,063**	**1,639**	**1,402**	**1,349**		
% change p.a, FY23-30 CAGR			-20%	-21%	-14%	-4%		
Total oil and gas sales**	**k boe/d**	**8,613**	**8,138**	**7,733**	**7,336**	**7,079**		
% change p.a, FY23-30 CAGR			-6%	-5%	-5%	-4%		
Total refined product sales	**k boe/d**	**6,561**	**4,710**	**4,458**	**4,203**	**4,124**		
% change p.a			-28%	-5%	-6%	-2%		
Bio energy production	**k boe/d**	**10.0**	**11.0**	**11.0**	**13.2**	**13.7**		
% change p.a, FY23-30 CAGR			10%	0%	20%	4%		
Renewable installed capacity	**GW**	**-**	**0.4**	**0.7**	**2.2**	**2.5**		

% change p.a, FY23-30 CAGR				59%	219%	13%		
Traded electricity	**TWh**	**-**	**252**	**247**	**243**	**279**		
% change p.a, FY23-30 CAGR				-2%	-2%	15%		
EV Charge points	**No.**	**-**	**1,000**	**7,000**	**27,000**	**54,000**	**70.000**	**200,000**
% change p.a, FY23-30 CAGR				600%	286%	100%	14%	21%

Source: Company data, Accela Research estimates | *Depending on integration with LNG, Shell gas production could grow 1-2% CAGR, **Estimated based on company disclosures

Eni

AGM date:	Climate transition plan:	Say on Climate Vote:
15 May 2024	2024 Capital Markets Update 2023 Annual Report	No

Table: Decarbonisation targets and emission performance

	Baseline		Actuals					Targets				
	Year	Emissions	FY19	FY20	FY21	FY22	FY23	FY25	FY30	FY35	FY40	FY50
Scope 1 and 2, operational – Absolute (MtCO2e)												
Emissions	**2018**	**44**	**42**	**38**	**41**	**40**	**39**					
% change p.a				-8%	6%	-2%	-2%			*No target*		
% change FY19				-8%	-2%	-4%	-6%					
Scope 1 and 2, Equity, Eni Net Carbon Footprint – Absolute (MtCO2e)												
Emissions	**2018**	**37.20**	**37.6**	**33.0**	**33.6**	**29.9**	**26.1**	**22.3**		**-**		
% change p.a				-12%	2%	-11%	-13%	-9%				
% change base year			1%	-11%	-10%	-20%	-30%	-40%		-100%		
% change FY19			0%	-12%	-11%	-20%	-31%	-41%		-100%		
Scope 1 and 2 (Net - Upstream, Carbon only) – Absolute (MtCO2e)												
Emissions	**2018**	**14.80**	**14.8**	**11.4**	**11.0**	**9.9**	**8.9**	**5.2**	**-**			
% change p.a				-23%	-4%	-10%	-10%					
% change base year			0%	-23%	-26%	-33%	-40%	-65%	-100%			
% change FY19			0%	-23%	-26%	-33%	-40%	-65%	-100%			
Scope 3 – Absolute (MtCO2e)												
Emissions	**2018**	**461**	**459**	**401**	**415**	**379**	**359**					
% change p.a				-13%	4%	-9%	-5%			*No target*		
% change FY19				-13%	-10%	-17%	-22%					
Net zero emissions (scope 1, 2 and 3) – Absolute (MtCO2e)												
Emissions	**2018**	**505.0**	**501.0**	**439.0**	**456.0**	**419.0**	**398.0**		**328.3**	**227.3**	**101.0**	**-**
% change p.a				-12%	4%	-8%	-5%					
% change base year			0%	-1%	-13%	-10%	-17%		-35%	-55%	-80%	-100%
% change FY19			0%	-12%	-9%	-16%	-21%		-34%	-55%	-80%	-100%
Net carbon intensity (scope 1, 2, 3) - Intensity (g CO2/MJ)												
Emissions	**2018**	**68.0**	**68.0**	**68.0**	**67.0**	**66.0**	**65.6**		**57.8**		**34.0**	**0.0**
% change p.a				0%	-1%	-1%	-1%					
% change base year			0%	0%	-1%	-3%	-4%		-15%		-50%	-100%
% change FY19			0%	0%	-1%	-3%	-4%		-15%		-50%	-100%
Offsets disclosed (MtCO2e)				1.5	2.0	3.0	5.9					

Source: Company data, Accela Research estimates

Table: Eni capital expenditure (€bn)

	Actual					Guidance
	FY19	FY20	FY21	FY22	FY23	FY24-27
By segment (€bn)						
Plenitude & Power segment (Organic)	**0.4**	**0.3**	**0.4**	**0.6**	**0.7**	**1.4 p.a**
% of Group	4%	6%	6%	6%	6%	
Upstream (Organic)	**7.0**	**3.5**	**3.9**	**6.4**	**7.1**	
% of Group	77%	69%	49%	56%	61%	
Midstream/Downstream (Organic)	1.0	0.9	0.9	1.0	1.3	
% of Group	11%	17%	11%	9%	11%	
Group (Organic)	**8.4**	**4.6**	**5.2**	**8.1**	**9.2**	**9 p.a**
Acquisitions/divestments	**0.8**	**0.4**	**2.7**	**3.3**	**2.6**	**-2 p.a (net divestments)**
% of Group	8%	8%	34%	29%	22%	
Group (Net of acquisitions/divestments)	**9.1**	**5.0**	**8.0**	**11.4**	**11.8**	**7 p.a**
Green value chain (Plenitude + Enilive)						**1.9 p.a**
Plenitude	0.3	0.2	0.4	0.5	0.6	1.4 p.a
Enilive	n.d					0.5 p.a

Source: Company data, Accela Research estimates

Table: Eni summary fuel volumes

		Actual					Guidance	
	Units	FY19	FY20	FY21	FY22	FY23	FY25	FY30
Oil and gas production	**k boe/d**	**1,871**	**1,733**	**1,682**	**1,610**	**1,655**	**1,722**	**1,901**
% change p.a, FY23-30 CAGR			-7%	-3%	-4%	3%	2%	2%
LNG portfolio	**Mt p.a**	**7.4**	**7.0**	**8.0**	**6.9**	**7.1**	**18* (FY26)**	
% change p.a, FY23-30 CAGR			-6%	15%	-14%	2%	49%	
Refining throughput	**k b/d**	**529**	**480**	**550**	**545**	**550**		
% change p.a,			-9%	15%	-1%	1%		
Oil and gas sales (based on disclosure)	**k boe/d**	**2,898**	**2,571**	**2,671**	**2,404**	**2,256**		
% change p.a			-11%	4%	-10%	-6%		
Bio energy production	**k boe/d**	**5.5**	**12.5**	**11.8**	**9.6**	**15.3**	**53.0**	**88.4**
% change p.a, FY23-30 CAGR			128%	-6%	-18%	59%	86%	28%
Renewable installed capacity	**GW**	**0.2**	**0.3**	**1.1**	**2.2**	**3.0**	**7.0 (FY26)**	**15.0**
% change p.a, FY23-30 CAGR			76%	270%	93%	36%	53%	26%
Electricity sales	**TWh**	**39**	**38**	**45**	**41**	**38**		
% change p.a,			-4%	18%	-9%	-8%		
EV Charge points	**No.**		**3,400**	**6,200**	**13,100**	**19,000**		**50,000**
% change p.a, FY23-30 CAGR				82%	111%	45%		15%

Source: Company data, Accela Research estimates | *FY26 target is for LNG volumes under contract, actuals reflect sales volumes

TotalEnergies

AGM date: 24 May 2024

Climate transition plan: Sustainability & Climate 2024 Progress Report, Energy & Climate: Our Orderly Energy Transition

Say on Climate Vote: Yes

Table: Decarbonisation targets and emission performance

	Baseline		Actuals					Targets		
	Year	Emissions	FY19	FY20	FY21	FY22	FY23	FY25	FY30	FY50
Scope 1 and 2 (Group/Global) – Absolute (MtCO2e)										
Emissions	**2015**	**46**	**44.3**	**38.4**	**35.4**	**39.0**	**34.0**	**38.0**	**25.0**	**-**
% change p.a				-13%	-8%	10%	-13%			
% change base year			-4%	-17%	-23%	-15%	-26%	-17%	-46%	-100%
% change FY19				-13%	-20%	-12%	-23%	-14%	-44%	-100%
Scope 3 (Group/Global) - GHG protocol cat 11 – Absolute (MtCO2e)										
Emissions	**No base year**		**410**	**350**	**370**	**381**	**355**	**400**	**400**	**100**
% change p.a				-15%	6%	3%	-7%			
% change FY19				-15%	-10%	-7%	-13%	-2%	-2%	-76%
Scope 3 (worldwide oil products) – Absolute (MtCO2e)										
Emissions	**2015**	**350**	**335**	**270**	**255**	**246**	**227**	**245**	**210**	
% change p.a				-19%	-6%	-4%	-8%			
% change base year			-4%	-23%	-27%	-30%	-35%	-30%	-40%	
% change FY19				-19%	-24%	-27%	-32%	-27%	-37%	
Scope 1,2,3 (Europe) – Absolute (MtCO2e)										
Emissions	**2015**	**280**	**258**	**239**	**241**	**215**	**236**		**196**	
% change p.a				-7%	1%	-11%	10%			
% change base year			-8%	-15%	-14%	-23%	-16%		-30%	
% change from FY19			0%	-7%	-7%	-17%	-9%		-52%	
Total disclosed emissions – Absolute (MtCO2e)										
Emissions	**2015**	**n.d**	**454**	**388**	**405**	**420**	**389**			
% change p.a				-15%	4%	4%	-7%	No target		
% change from FY19				-15%	-11%	-8%	-14%			
Lifecycle carbon intensity , Scope 1,2,3 – Intensity (g CO2e/MJ)										
Intensity	**2015**	**73**	**68.6**	**65.7**	**65.0**	**64.2**	**63.5**	**62.1**	**54.8**	**-**
% change p.a				-4%	-1%	-1%	-1%			
% change base year			-6%	-10%	-11%	-12%	-13%	-15%	-25%	-100%
% change from FY19				-4%	-5%	-6%	-7%	-10%	-20%	-100%
Offsets (MtCO2e)	**None disclosed**									

Source: Company data, Accela Research estimates

Table: Capital expenditure (US$bn)

	Actual					Guidance		
	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY30
By segment (US$ bn)								
Low carbon energies	**1.0**	**2.0**	**3.0**	**4.0**	**5.9**	**~$5.9bn**	**$4.5-6bn**	**$4.5-6bn**
% of Group	6%	15%	23%	25%	35%	33%	33%	33%
Upstream	**13.8**	**10.0**	**8.0**	**10.5**	**10.7**			
% of Group	79%	77%	60%	64%	63%			
Midstream/Downstream (ex low carbon)	**3**	**1**	**2**	**2**	**0**			
% of Group	15%	8%	17%	11%	2%			
Group	**17.4**	**13.0**	**13.3**	**16.3**	**16.8**	$17-18bn	14-18bn	$14-18bn

Source: Company data, Accela Research estimates

Table: Fuels

		Actual					Guidance	
	Units	FY19	FY20	FY21	FY22	FY23	FY25	FY30
Oil and gas production	**k boe/d**	**3,014**	**2,871**	**2,819**	**2,765**	**2,483**		**2,795**
% change p.a, FY23-30 CAGR			-5%	-2%	-2%	-10%		2%
LNG portfolio	**Mt p.a**	**34**	**38**	**42**	**48**	**44**		
% change p.a			12%	10%	15%	-8%		
of which equity production	**Mt p.a**	16	18	17	17	15		24
Refining throughput	**k b/d**	**1,671**	**1,292**	**1,181**	**1,472**	**1,436**		
% change p.a			-23%	-9%	25%	-2%		
Oil and gas sales (based on disclosure)	**k boe/d**	**8,581**	**8,153**	**8,806**	**9,235**	**9,211**		
% change p.a		-	15%	4%	5%	-88%		
Bio energy production	**k boe/d**	**3.5**	**4.5**	**6.9**	**4.3**	**5.8**		**32.2**
% change p.a, FY23-30 CAGR			28%	52%	-38%	37%		39%
Renewable installed capacity	**GW**	**3.0**	**7.0**	**10.3**	**16.8**	**22.4**	**35.0**	**100.0**
% change p.a, FY23-30 CAGR			133%	47%	64%	33%	25%	24%
Traded electricity	**TWh**	**46.0**	**47.3**	**56.6**	**55.3**	**52.1**		
% change p.a		-	3%	20%	-2%	-6%		
EV Charge points	**No.**	**-**	**22,000**	**26,000**	**42,000**	**60,000**		**150,000**
% change p.a, FY23-30 CAGR				18%	62%	43%		14%
Hydrogen production	**Mt p.a**	n.d						1.00
CCS capacity	**Mt p.a**	n.d						>10Mt p.a

Source: Company data, Accela Research estimates

Equinor

AGM date:	Climate transition plan:	Say on Climate Vote:
14 May 2024	2023 Progress on our Energy transition plan	No

Table: Decarbonisation targets and emission performance

	Baseline			Actuals				Targets			
	Year	Emissions	FY19	FY20	FY21	FY22	FY23	FY25	FY30	FY35	FY50
Net scope 1 and 2 (operated, Group) – Absolute (MtCO2e)											
Emissions	**2015**	**16.6**	**14.9**	**13.6**	**12.1**	**11.5**	**11.6**		**8.3**		
% change p.a				-9%	-11%	-5%	1%				
% change base year			-10%	-18%	-27%	-31%	-30%		-50%		
% change FY19			0%	-9%	-19%	-23%	-22%		-44%		
Upstream CO_2 intensity - Intensity (kg CO2/boe)											
Emissions			**9.8**	**8.0**	**7.0**	**6.9**	**6.7**	**8.0**	**6.0**		
% change p.a				-18%	-13%	-1%	-3%	5%	-2%		
% change FY19				-18%	-29%	-30%	-32%	-18%	-39%		
Scope 3 (own production) – Absolute (MtCO2e)											
Emissions			**259**	**271**	**269**	**269**	**270**				
% change p.a				5%	-1%	0%	0%		*No target*		
% change FY19				5%	4%	4%	4%				
Total disclosed emissions – Absolute (MtCO2e)											
Emissions			**274**	**285**	**281**	**280**	**282**				
% change p.a				4%	-1%	0%	1%		*No target*		
% change FY19				4%	3%	2%	3%				
Net Carbon Intensity (scope 1,2,3) - Intensity (kg CO2/boe)											
Intensity	**2019**	**67.8**	**67.8**	**67.8**	**67.1**	**66.5**	**67.0**		**54.4**	**40.8**	**-**
% change p.a				0%	-1%	-1%	1%				
% change FY19/ base year			0%	0%	-1%	-2%	-1%		-20%	-40%	-100%
Offsets disclosed (MtCO2e)	Not disclosed		-	0.007	0.005	0.041	0.069				
Carbon capture and storage (MtCO2e)			0.00	1.10	0.30	0.50	0.80				

Source: Company data, Accela Research estimates

Table: Capital expenditure (US$bn)

	Actual					Guidance	
	FY19	FY20	FY21	FY22	FY23	FY25	FY30
By segment							
Renewables segment	**0.2**	**0.0**	**0.5**	**0.3**	**2.0**		
% of Group	1%	0%	5%	3%	14%		
plus: CCUS, hydrogen, other low carbon	0	0	0	1	1		
Renewables & Low Carbon Solutions*	**0.3**	**0.4**	**0.9**	**1.4**	**2.9**	**4**	**-**
% of Group	2%	4%	11%	14%	20%	30%	>50%
Upstream	**13.2**	**8.5**	**7.5**	**8.3**	**11.5**	**10**	**10**
% of Group	89%	87%	88%	83%	79%		
Midstream/Downstream (not Renewables & Low carbon)	**1.3**	**0.8**	**0.1**	**0.3**	**0.1**		
% of Group	9%	9%	1%	3%	1%		
Group (organic)	**14.8**	**9.8**	**8.5**	**10.0**	**14.5**	**13**	

Source: Company data, Accela Research estimates | Equinor provides percentage of gross capex for Renewables & Low carbon Solutions, which includes project financing. We have assumed net capex reflects the same percentage as gross capex.

Table: Fuels

		Actual					Guidance	
	Units	FY19	FY20	FY21	FY22	FY23	FY25	FY30
Oil and gas production	**k boe/d**	**2,074**	**2,070**	**2,079**	**2,039**	**2,082**		**2,000**
% change p.a, FY23-30 CAGR			0%	0%	-2%	2%		-1%
LNG portfolio	**Mt p.a**	n/a	n/a	n/a	n/a	n/a		
% change p.a, FY23-30 CAGR								
Refining throughput	**k b/d**	**229**	**213**	**235**	**211**			
% change p.a, FY23-30 CAGR			-7%	10%	-10%			
Oil and gas sales (based on disclosure)	**k boe/d**	**4,090**	**4,033**	**3,986**	**3,929**	**4,411**		
% change p.a, FY23-30 CAGR			-1%	-1%	-1%	12%		
Renewable installed capacity	**GW**	**0.5**	**0.5**	**0.5**	**0.6**	**0.9**		**16.0**
% change p.a, FY23-30 CAGR			0%	0%	20%	50%		51%
Renewable & Decarbonised energy production	**TWh**	**1.8**	**1.7**	**1.6**	**1.6**	**1.9**		**80.0**
% change y/y, FY22-30 CAGR			-5%	-6%	6%	18%		36%
CCS capacity	**Mt p.a**	n.d						**10**

Source: Company data, Accela Research estimates

Woodside

AGM date:	Climate transition plan:	Say on Climate Vote:
24 April 2024	Thriving through the energy transition	Yes

Table: Decarbonisation targets and emission performance

	Baseline		Actuals					Targets		
	Year	Emissions	FY19	FY20	FY21	FY22**	FY23	FY25	FY30	FY50
Scope 1 and 2, Operational (MtCO2e)– Absolute (MtCO2e)										
Emissions			**8.8**	**9.2**	**8.9**	**9.6**	**9.2**			
% change p.a				4%	-3%	7%	-4%		*No target*	
% change FY19				4%	1%	8%	4%			
Scope 1 and 2, Equity - Absolute (MtCO2e)										
Emissions			**3.3**	**3.6**	**3.5**	**5.4**	**6.2**			
% change p.a				9%	-1%	51%	15%		*No target*	
% change FY19				9%	7%	63%	87%			
Scope 1 and 2, net equity - Absolute (MtCO2e)										
Emissions	**2016-20**	**6.32***	**3.2**	**3.2**	**3.2**	**4.6**	**5.5**	**5.4**	**4.4**	
% change p.a				0%	0%	43%	20%			
% change base year				-49%	-49%	-27%	-12%	-15%	-30%	
% change FY19				0%	0%	43%	71%			
Scope 3 - Absolute (MtCO2e)										
Emissions			**28**	**33**	**37**	**61**	**73**			
% change p.a				18%	13%	63%	20%			
% change from FY19				18%	33%	118%	161%		*No target*	
Total disclosed emissions – Absolute (MtCO2e)										
Emissions			**37**	**42**	**46**	**70**	**82**			
% change p.a				15%	9%	52%	17%		*No target*	
% change from FY19				15%	26%	91%	123%			
Lifecycle carbon intensity , Scope 1,2,3 – Intensity (g CO2e/MJ)										
Intensity			**-**	**-**	**58.0**	**63.0**	**65.0**			
% change p.a						9%	3%		*No target*	
% change from FY19										
Offsets (MtCO2e)			0.00	0.00	0.31	0.76	0.66			

Source: Company data, Accela Research estimates | *For 2023 Woodside's base year emissions have been rebased to 6.32 MtCO2e to take into account BHP merger (prior base was 5.19 MtCOe). ** BHP merger occurred June 2022

Table: Capital expenditure ($bn)

	Actual					Guidance	
	FY19	FY20	FY21	FY22	FY23	FY24	FY30
By segment							
New Energy	**-**	**-**	**-**	**0.1**	**0.2**		**$5bn by FY30**
% of Group	0%	0%	0%	2%	4%		
Upstream	**1.3**	**2.0**	**2.7**	**4.4**	**5.9**		
% of Group	100%	100%	100%	98%	96%		
Group	**1.3**	**2.0**	**2.7**	**4.5**	**6.1**	**5.5**	

Source: Company data, Accela Research estimates

Table: Fuels

		Actual					Guidance	
	Units	FY19	FY20	FY21	FY22	FY23	FY25	FY30
Oil and gas production	**k boe/d**	**245**	**275**	**250**	**432**	**513**		
% change p.a,			12%	-9%	73%	19%		
LNG portfolio	**Mt p.a**	**-**	**-**	**9**	**10**	**11**		
% change p.a		-	-	-	20%	4%		
Oil and gas sales (based on disclosure)	**k boe/d**	**201**	**275**	**309**	**471**	**552**		
% change p.a		-	37%	12%	52%	17%		
CCS capacity	**Mt p.a**	n.d						**3**

Source: Company data, Accela Research estimates

Santos

AGM date:	Climate transition plan:	Say on Climate Vote:
11 April 2024	Energy for progress: Sustainability and Climate Report	No

Table: Decarbonisation targets and emission performance

	Baseline		Actuals*					Targets		
	Year	Emissions	2018-19	2019-20	2020-21	2021-22	2022-23	24-25	29-30	49-50
Scope 1 and 2, Operational– Absolute (MtCO2e)										
Emissions			**6.4**	**8.3**	**8.6**	**8.6**	**6.2**			
% change p.a				31%	3%	0%	-28%	*No target*		
% change FY19				31%	35%	35%	-3%			
Scope 1 and 2, Equity - Absolute (MtCO2e)										
Emissions	**Jul 19-Jun 20**	**5.9**	**3.9**	**5.9**	**5.1**	**5.0**	**4.9**		**4.1**	**-**
% change p.a				53%	-14%	-2%	-1%			
% change base year				0%	-14%	-16%	-17%		-30%	-100%
% change FY19			0%	53%	32%	29%	28%			
Scope 1 and 2 - Intensity (g CO2e/MJ)										
Emissions	**Jul 19-Jun 20**	**55**	**57**	**55**	**52**	**52**	**51**		**33.0**	
% change p.a				-4%	-5%	0%	-2%			
% change base year				0%	-5%	-5%	-7%		-40%	
% change FY19			0%	-4%	-9%	-9%	-11%			
Scope 3, equity - Absolute (MtCO2e)										
Emissions			**22**	**24**	**30**	**30**	**33**			
% change p.a				13%	25%	-1%	9%			
% change from FY19				13%	40%	39%	51%	*No target*		
Total disclosed emissions – Absolute (MtCO2e)										
Emissions			**28**	**33**	**39**	**39**	**39**			
% change p.a				17%	19%	-1%	1%	*No target*		
% change from FY19				17%	39%	38%	39%			
Offsets disclosed (MtCO2e)			n.d							

Source: Company data, Accela Research estimates | *Santos reports emissions on a July 1 to Jun 30th basis, in line with the Australian financial year

Table: Capital expenditure (US$bn)

	Actual					Guidance	
	FY19	FY20	FY21	FY22	FY23	FY24	FY33
By segment							
Santos Energy Solutions	**-**	**-**	**-**	**0.1**	**0.2**		**$3-4.5bn by FY33**
% of Group	0%	0%	0%	6%	8%		
Upstream	**1.0**	**0.9**	**1.4**	**2.1**	**1.9**		
% of Group	100%	100%	100%	94%	92%		
Group	**1.0**	**0.9**	**1.4**	**2.2**	**2.0**	**2.85***	

Source: Company data, Accela Research estimates |*Guidance for major capex and sustaining capital

Table: Fuels

c		Actual					Guidance	
	Units	FY19	FY20	FY21	FY22	FY23	FY25	FY30
Oil and gas production	**k boe/d**	**207**	**244**	**253**	**283**	**251**	**261***	
% change p.a,		-	18%	4%	12%	-11%		
LNG portfolio	**Mt p.a**	**3**	**4**	**5**	**6**	**5**		
% change p.a,		**-**	45%	6%	29%	-6%		
Oil and gas sales (based on disclosure)	**k boe/d**	**357**	**404**	**393**	**424**	**364**		
% change p.a, FY23-30 CAGR		-	13%	-3%	8%	-14%		
CCS capacity	**Mt p.a**	n.d.						**10**

Source: Company data, Accela Research estimates |* 6% CAGR from FY24-28

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