

Aspiration in the right direction, more evidence needed

SOL has a vision for a fossil-free future by FY50

SOL is the second largest emitter in South Africa, providing 40% of the country’s petrol and diesel, and 35% of aviation fuel. The majority of earnings in FY21 are from its Chemicals business. SOL is an important player in South Africa’s decarbonisation. It’s encouraging that SOL has now set absolute GHG emission reduction targets covering ~91% of scope 1, 2 and 3. As a unique business, where we estimate carbon feedstock contributes at least ~28.7Mt CO₂e (~43% of scope 1 and 2 GHG emissions), transition to a lower-carbon feedstock will be key. By FY50, SOL aspires for its business to be fossil-free. Resolution 3 asks shareholders to endorse the company’s Climate Change Report 2021, which demonstrates the company’s support for the goals of the Paris Agreement.

More evidence needed

SOL has provided insufficient data for an independent assessment on whether the company can meet its targets. For its scope 1 and 2 targets, it is difficult to quantify the emissions savings from a coal-to-gas switch. There is high execution risk in its strategy as it depends on access to affordable gas supply and existing gas fields are in decline post FY24. For SOL to meet its FY30 target, it requires ~170 PJ p.a of gas (3.6 Mt p.a) for feedstock. For its scope 3 target, as at FY21 SOL has already achieved 13% of its 20% reduction target. Stopping coal exports could provide an additional 13% reduction, allowing SOL to overachieve its target.

Our view

Our analysis shows that to maintain its FY19 volumes, SOL will need additional feedstock to its stated gas requirements. We believe investors need more quantitative information on alternative sustainable carbon, such as biomass. SOL states it will not be 1.5C aligned by FY30 and we believe its current financial constraints may be limiting its ambition. With the additional US\$8.5bn announced at COP26 to support South Africa in increasing the pace of its decarbonisation, investors deserve to see a business plan that leapfrogs over gas to green hydrogen before FY30. Given progress to date, SOL should consider increasing its scope 3 reduction target.

Chart: SOL annual Feedstock Consumption (TWh), FY17-F30

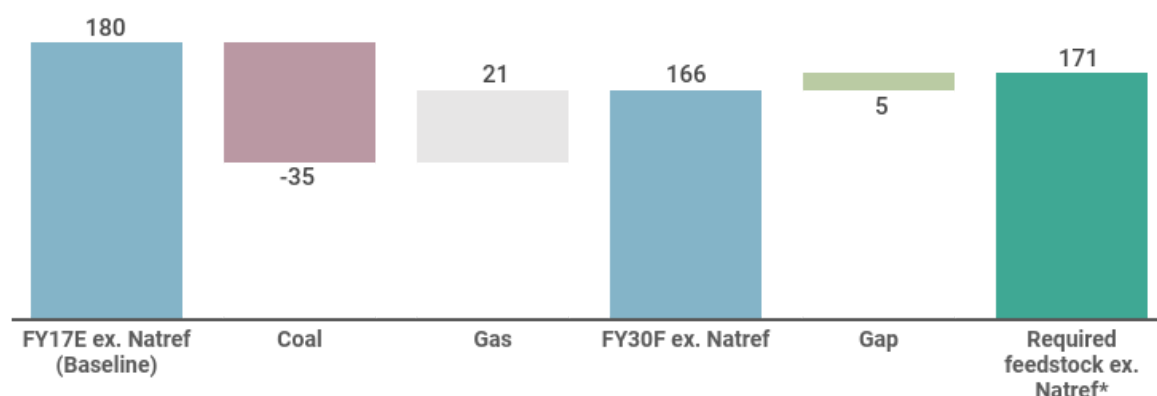


Chart: GCI | Source: Company Data, CDP, GCI Estimates | *Based on FY19 Consumption

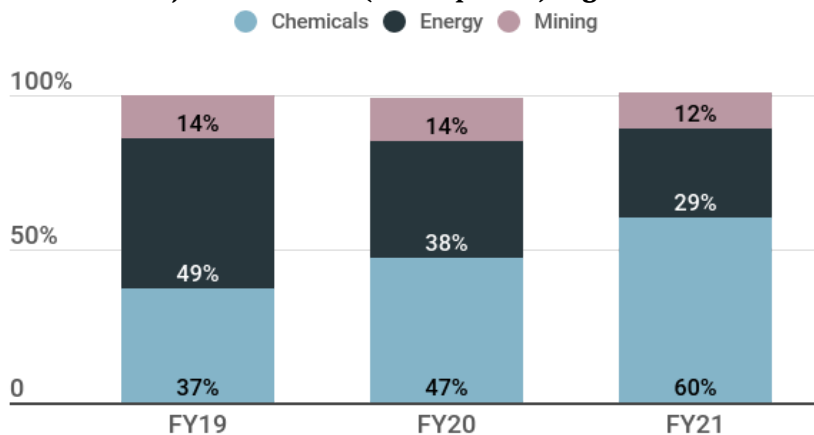
1. What is SOL today?

SOL is an international energy and chemical company. It has energy and chemical operations in South Africa, chemical operations in North America and Europe, and some operations in Asia. In South Africa, coal feedstock produces synthetic fuels and chemicals at Secunda, and gas and oil feedstock produces chemical products at Sasolburg (taken from its Natref JV). Currently, SOL relies on South African coal and Mozambican gas for carbon feedstock, heat, and electricity to these sites. SOL provides ~40% of South Africa’s petrol and diesel and ~35% of South Africa’s aviation fuel.

Earnings by segment

SOL’s Chemicals segment’s contribution to Group Adjusted EBITDA (ex-Corporate) increased from ~37% in FY19 to ~60% in FY21.¹ This was driven by a combination of lower earnings from Energy due to the COVID-19 impact and increased earnings from Chemicals.²

Chart: SOL Adjusted EBITDA (ex-Corporate) segment contribution (%)



Chemicals contributed to 60% of SOL’s FY21 earnings; up from 37% in FY19.

Chart: GCI | Source: Company Data, Global Climate Insights Estimates

Chart: SOL Adjusted EBITDA (ex-Corporate) by segment (Rbn)

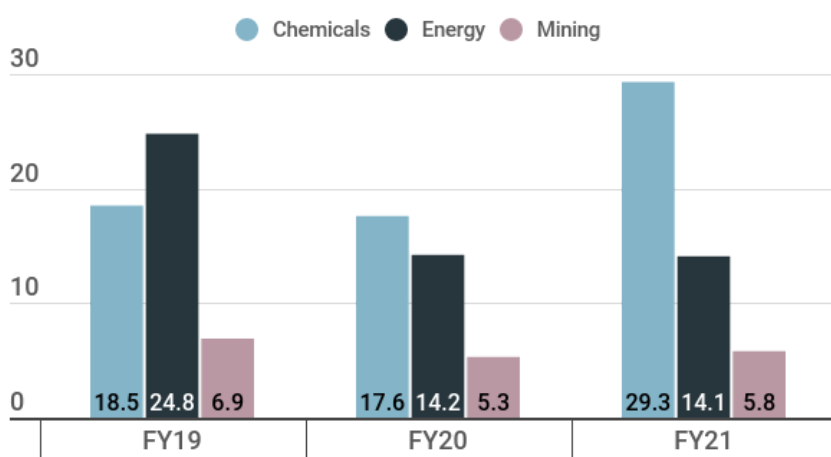


Chart: GCI | Source: Company Data, Global Climate Insights Estimates

¹ [SOL, 2021, Annual Financial Statements for the year ended 30 June 2021](#)

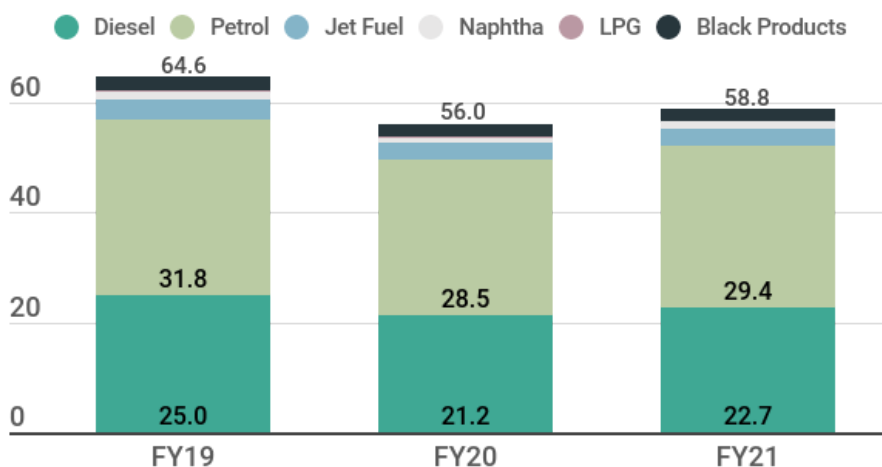
² [SOL, 2021, Production and Sales Metrics for the year ended June 2021](#)

Products

In FY21, SOL sold 58.9 million barrels of energy products, with petrol and diesel accounting for 88% and jet fuel 3%. The total energy products sold in FY21 increased by 5% from FY20, although they were 10% lower than FY19. SOL sold 7,248 kt chemical products in FY21, which increased 10% from FY19. The most significant contributor was from base chemicals, which accounts for 52% of FY21 production. SOL's mining segment sells its excess coal internationally, which was 2.6 Mt in FY21.

Chart: Fuels Segment annual production volumes (mm bbl)

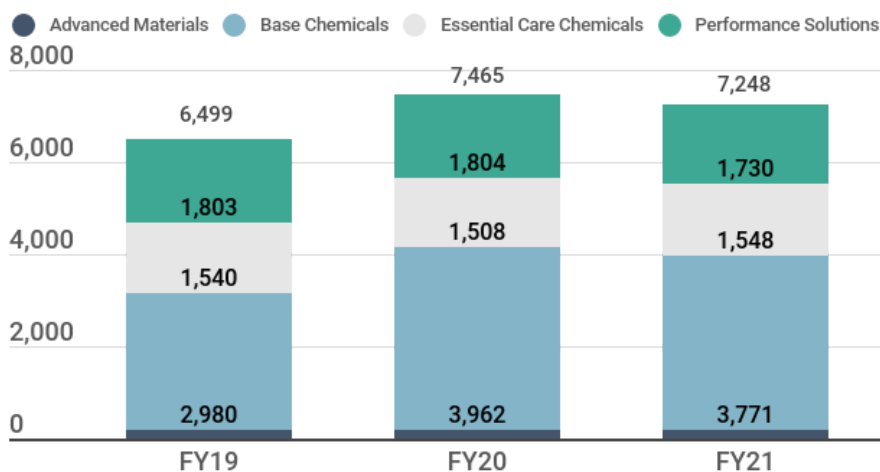
*Includes production from 49% stake in ORYX GTL JV



Diesel and petrol account for ~88% of production volumes for Fuels.

Chart: GCI | Source: Company Data, Global Climate Insights Estimates Global Climate Insights

Chart: Chemicals annual production volumes (kt)



Advanced Materials (specialty aluminas, carbon and cobalt catalyst)

Base Chemicals (polymers, explosives, waxes)

Essential Care Chemicals (alcohols and surfactants)

Performance Solutions (solvents, waxes)

Chart: GCI | Source: Company Data, Global Climate Insights Estimates Global Climate Insights

2. Decarbonisation strategy

Unlike other energy businesses, SOL has very significant scope 1 emissions (57% of total). The Secunda operations are energy-intensive and have a low carbon efficiency. Crucial to decarbonisation is the source of carbon feedstock it needs to produce synthetic and chemical products. SOL's climate change strategy announced updated absolute GHG emission reduction targets, differentiated between scope 1 and 2, and scope 3.

Table: SOL GHG emission reduction targets and levers

FY30 Targets	FY30 Levers
<p>Scope 1 and 2 for South Africa - Energy and Chemicals³ (excl Natref, FY17 base): 30% reduction</p>	<ul style="list-style-type: none"> • Procurement of renewable energy for its business operations. • A gradual transition from coal to gas sourced feedstock. • Energy efficiency improvements.
<p>Scope 1 and 2 for International Chemicals (FY17 base): 30% reduction</p>	<ul style="list-style-type: none"> • Purchase of renewable electricity. • Energy and process efficiency. • Carbon Capture Utilisation and Storage (CCUS).
<p>Scope 3 for South Africa - Energy and Chemicals (FY19 base): 20% reduction</p>	<ul style="list-style-type: none"> • Scaling back coal exports. • Longer-term transition to sustainable fuels.
FY50 Targets	FY50 levers
<p>Net zero for scope 1, 2 and 3 for the above operations.</p>	<ul style="list-style-type: none"> • Preferred pathway: Transition to a sustainable carbon source, green hydrogen and renewable energy

Source: Company data, Global Climate Insights estimates

The main lever for SOL to reach net zero emissions in FY50 is to transition out of fossil fuels, using more sustainable feedstocks, green hydrogen, and renewable energy electricity generation. We have assessed SOL's FY30 target. Given the lack of detail, we have not reviewed its FY50 target but note the ambition.

³ The Chemicals Business at Secunda and Sasolburg are integrated into the South Africa energy targets.

Key exclusion from the existing targets

SOL does not have specific methane targets, even though emissions are stated on a CO₂ equivalent basis (CO₂e) basis. SOL's CO₂e disclosures are scope 1 and 2 targets and include methane emissions from mining, but exclude methane emissions from its Mozambique operations.

Our view:

The key for SOL to meet its 30% reduction target for scope 1 and 2 emissions lies in addressing the CO₂e that originates from its feedstock. SOL states that for operations at Secunda, 48% of scope 1 and 2 emissions are produced from generating electricity, heat and steam, and 50% are emitted from production processes including feedstock consumption.⁴

As at FY21, SOL has achieved a 13% reduction in scope 3 emissions (20% target off a FY19 base), where scaling back coal exports could provide up to an additional 13% reduction on FY19 if completely ceased. SOL may be able to deliver scope 3 GHG emissions reductions above its 20% target by introducing more sustainable carbon or migrating to lower-carbon products.

The strategy does not consider the recent announcements made at COP26, where a new ambitious, long-term Just Energy Transition Partnership was created to support South Africa's decarbonisation efforts. US\$8.5 bn has been committed to helping South Africa finance innovative technical developments and investments, including electric vehicles and green hydrogen, which will have a significant impact on the pace of transition for South Africa.⁵

⁴ [SOL, 2019, Climate Change report](#)

⁵ [France, Germany, UK, US and EU launch ground-breaking International Just Energy Transition Partnership with South Africa](#) (2021).

2.1. Scope 1 and 2 GHG emission reduction targets

Most of SOL's scope 1 and 2 GHG emissions are from its South African Energy and Chemicals business. Under SOL's target, these emissions will reduce from 63.9 Mt CO₂e in FY17 to 44.7 Mt CO₂e in FY30. Scope 1 and 2 GHG emissions from its International Chemical business were 2.8 Mt in FY17, which under SOL's target will reduce to 2.0 Mt by FY30. Collectively, these GHG emissions account for 98% of SOL's disclosed scope 1 and 2.

Table: SOL Scope 1 and 2 GHG emission reduction targets

Emissions included	Base Year	Base Year CO ₂ e Mt	FY21A	FY26	FY30	FY50
Scope 1 and 2						
South Africa - Energy and Chemicals ⁶ , excl Natref	2017	63.9	-1% to date	5%	30%	Net Zero
International - Chemicals	2017	2.8*	*	20%	30%	Net Zero
Total		66.7				

Source: Global Climate Insights, Company data. * Note SOL's scope 1 and 2 target for its International Chemicals business includes an additional 600k CO₂e in the base year (FY17), to reflect the impact of Lake Charles at full production. It is not currently possible to compare FY21 GHG emissions for this business to the FY17 base on a like for like basis.

SOL's FY30 GHG emission reduction target for scope 1 and 2 emissions has three core components:

- Procurement of renewable energy:
 - Procurement of 1,200 MW for Secunda (800 MW by SOL, 400 MW by Air Liquide), enough to power Secunda at full capacity. However, electricity from the grid may still be required depending on renewable energy load factors.
 - Direct purchases of renewable energy for SOL's International Chemicals business.
- A shift from coal to gas: coal intake reducing 9 Mt p.a and gas feedstock increasing 40-60 PJ p.a.
- Energy efficiency improvements: SOL aims to achieve a 30% energy efficiency by FY30 from a FY05 baseline, including an undisclosed amount to be performed by CCUS for the International Chemical business.⁷

At its 2021 Capital Market Day SOL has separately stated that it expects to require ~2% of sustainable carbon by FY30 and 5%-10% sustainable carbon by FY40+ (not explicitly stated in SOL's GHG emission reduction targets). We expect that this will be required if SOL expects to maintain or grow its FY19 production levels.

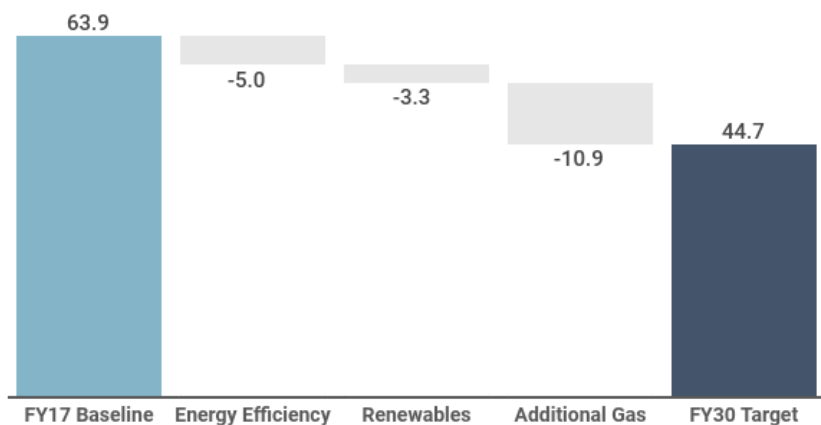
SOL has not disclosed the expected contribution for each of its decarbonisation activities across its scope 1 and 2 targets. However, SOL has indicated the proportionate contribution from its scope 1 and 2 target for its South Africa - Energy and Chemicals (excl. Natref) GHG emission reduction target, as shown in the chart below. Between FY17 and FY30, scope 1 and 2 GHG emissions for its South African business are expected to decline 19.2Mt. The implied reduction from each lever is as follows:

⁶ The Chemicals Business at Secunda and Sasolburg are integrated into the South Africa energy targets.

⁷ [SOL Limited, Form-20F, for the year ended 30 June 2021](#)

- 10.9 Mt reduction, the shift of feedstock from coal to gas, ~17 percentage points of the 30% reduction.
- 5.0 Mt reduction from energy efficiency, ~8 percentage points of the 30% reduction.
- 3.3 Mt reduction from renewable energy, ~5 percentage points of the 30% reduction.

Chart: SOL indication of South African scope 1 and 2 GHG emissions reduction from decarbonisation levers between FY17-30 (Mt CO2e)



SOL indicates that switching from coal to gas feedstocks will account for ~57% of its South African scope 1 & 2 FY30 emissions reduction targets.

Chart: GCI | Source: Company Data, Global Climate Insights Estimates Global Climate Insights

Our view: Based on SOL's data, if SOL can secure sufficient gas, it will be able to achieve its scope 1 and 2 targets. However there is a risk to its gas supply which we discuss in section 3. Currently, SOL's public disclosure is complex and it is not possible for us to test SOL ability to achieve its targets. SOL uses different baselines for its various emissions targets, with adjustments for assets like Lake Charles, which makes it harder for investors to support its plans with clarity. Given recent COP26 announcements, the gas supply risk, and the need for visionary ambition to achieve a 1.5C, investors need SOL to better demonstrate the merits of its strategy compared to a direct path to green hydrogen before FY30.

2.2. Scope 3 GHG emission reduction targets

SOL's scope 3 target is to deliver a 30% reduction in GHG emissions relating to 'Use of Sold Products' from its South Africa Energy and Chemicals business. This accounts for 80-84% of total disclosed scope 3 GHG emissions. SOL does not yet measure its scope 3 GHG emissions for its international business.

Table: SOL Scope 3 GHG emission reduction targets

Emissions included	Base Year	Base Year CO2e Mt	FY21A	FY26	FY30	FY50
Scope 3						
South Africa - Energy and Chemicals ⁸	2019	35.6	13% to date	-	20%	Net Zero

Source: Global Climate Insights, Company data

⁸ The Chemicals Business at Secunda and Sasolburg is integrated into the South Africa energy targets.

It appears that the main driver for reducing scope 3 emissions is scaling back coal exports; reductions in fossil fuel volumes are expected to occur post 2026. SOL's long term transition to sustainable carbon sources will also drive a reduction in scope 3 GHG emissions; however, SOL has not set targets as part of its emission reduction plan. We note that at its 2021 Capital Markets day, SOL indicated it is seeking to use ~2% sustainable carbon by FY30 and 5%-10% sustainable carbon by FY40+.⁹

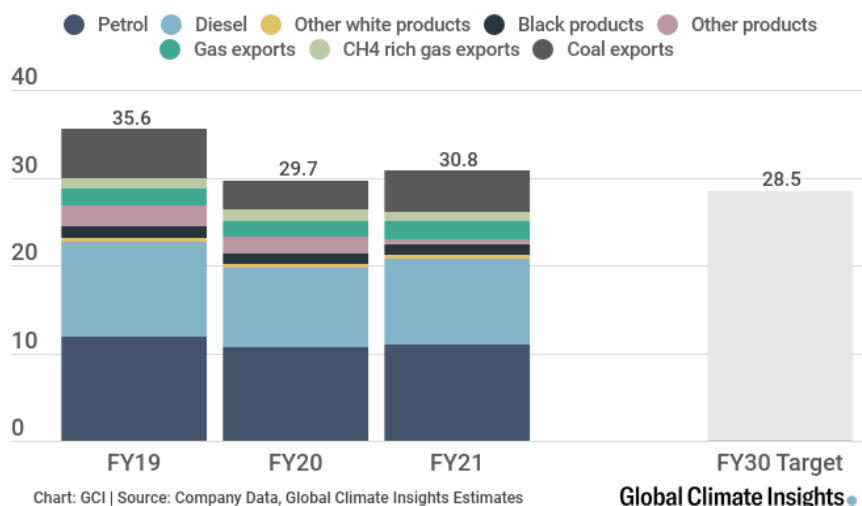
The chart below estimates the historical (FY19-FY21) scope 3 GHG emissions by product based on SOL energy product sales.¹⁰ Our bottom-up estimates broadly align to the scope 3 GHG emissions from Use of Sold Products as disclosed by SOL. Other white products as defined by SOL include aviation fuel, naphtha and LPG. Black petroleum products include crude oil, furnace oil, fuel oil and tar.

Our analysis investigates the change in scope 3 GHG emissions (Use of Sold Products) from the FY19 baseline, and seeks to understand the key drivers of SOL's emission reduction target. As of FY21, scope 3 GHG emissions for Use of Sold Products were 30.8Mt, 13% less than FY19. If SOL were to cease exports of coal completely, this would deliver a 13% reduction on FY19. Under this scenario, SOL would therefore be able to expand production and increase scope 3 GHG emissions by 6% (from FY19) and still meet its 20% scope 3 reduction target. We believe this highlights the potential for SOL to set more ambitious scope 3 targets.

Our view:

We want SOL to quantify options it has to further decrease scope 3 GHG emissions including mix of lower-carbon products. Biofuels, including sustainable aviation fuels, may have a role to play in this mix, but it is unclear how much these products could contribute to SOL volumes and the relative carbon intensity for scope 3 compared to existing products.

Chart: Scope 3 'Use of Sold Products' GHG emissions by product (Mt CO2e) for FY19-30



If SOL were to cease coal exports, this would deliver a 13% reduction in targeted scope 3 emissions on FY19.

⁹ ['Leading the energy transition' webinar presentation](#) at Capital Markets Day 2021, 22nd September 2021

¹⁰ The emission factors we use are taken from EPA and DEFRA and assume these energy products are combusted.

2.3. Alignment with the Paris Agreement goals

To be aligned with the highest ambition of the Paris Agreement in keeping temperature rise below 1.5C, companies need to set their sights on halving absolute emission reductions by FY30.¹¹ We recognise that as a chemicals business, this task requires visionary ambition and leadership. Indeed, SOL stated it will not be 1.5C aligned by FY30. Currently, we forecast SOL’s share of South African national emissions will increase from 19% in FY19 to 21% in FY30, this includes SOL’s South African scope 1, 2 and 2 GHG emissions.¹² While we acknowledge the role in other sectors in contributing to South Africa’s goals, we believe this divergence suggests that more ambition is needed. It highlights the moral responsibility of fuel suppliers and their role in the decarbonisation of a country.

The recent announcements at the COP26 on climate finance for South Africa’s decarbonisation will provide the capital and momentum for accelerating green hydrogen in South Africa. We encourage investors to consider this in their assessment of SOL’s plans. SOL should demonstrate to investors that it has considered strategies unconstrained by its own financial position, which would allow it to respond to external changes in the event that additional financing becomes available.

Chart: Absolute GHG emissions SOL (Actual FY17-FY20), South Africa (Actual 2017) (Mt CO₂e)

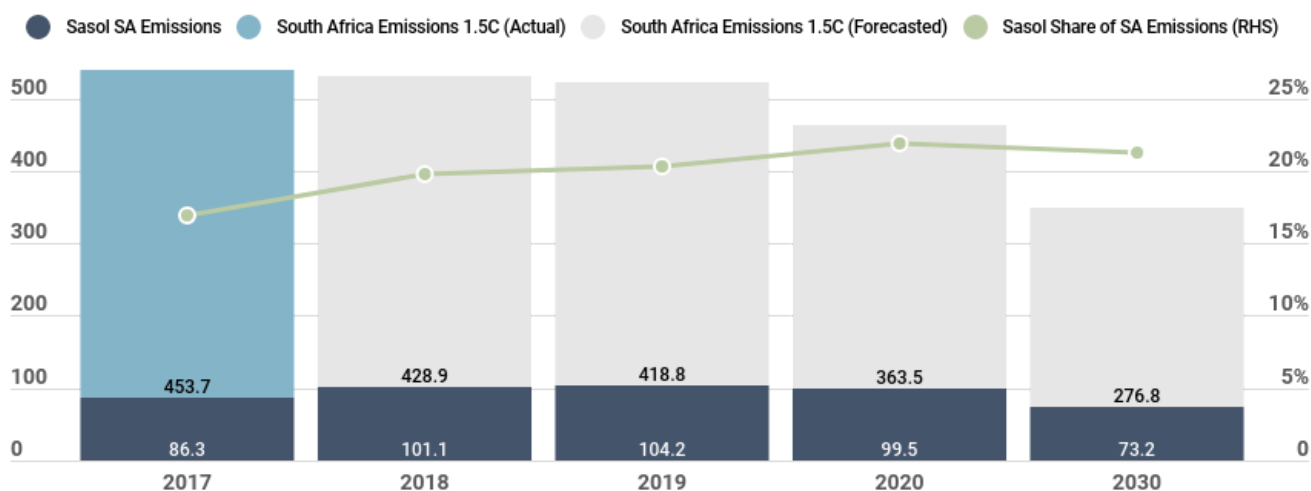


Chart: Global Climate Insights | Source: Company Data, Global Climate Insights Estimates

Source: Company data, Carbon Action Tracker (Climate Analytics and NewClimate Institute). [South Africa updated its first Nationally Determined Contribution under the Paris Agreement \(2021\)](#).¹³

2.4. The Importance of alternative feedstocks

SOL’s proposed climate strategy requires the company to change the mix of feedstock used at its South Africa Energy and Chemicals business, as the coal to liquids process is highly energy-intensive and has a low carbon efficiency. SOL expects around 10.9 Mt (~57%) of its 19.2 Mt CO₂e reduction between FY17 and FY30 to come from the switch in feedstock from coal to gas. In addition, SOL states that for Secunda’s scope 1 and 2 GHG

¹¹ <https://unfccc.int/news/halving-emissions-by-2030-is-new-normal-race-to-zero-anniversary>

¹² In the event that SOL will meet its emission targets and South Africa will achieve its conditional NDC inline with 1.5C.

¹³ We use SOL’s actual reported emissions between FY17 and FY19. We note that SOL improved the accuracy of its emissions reporting in FY19 which partly contributes to the increase in comparison to FY17.

emissions of 57.4 Mt in FY21, that 48% are from consuming/generating energy, heat and steam, and 50% from processes including the consumption of feedstock.

From SOL's current disclosures, we cannot verify the importance of feedstock to SOL's scope 1 and 2 GHG emission reduction target. However, assuming SOL estimates are accurate, there is a large potential to further reduce scope 1 and 2 emissions by increasing the feedstock transition. Our analysis below seeks to understand the potential benefits that SOL may obtain from further changes to feedstock.

To define SOL's current feedstock mix, we use data from CDP for FY19 and FY20 for the amount and energy content of feedstocks, and estimate FY17, FY18 and FY21 based on disclosed internal coal and gas used (excludes Natref JV products). We estimate that in FY21, the SOL feedstock on a TWh basis was 85% from coal and 15% from gas. By FY30, we estimate SOL will source 70% of its feedstock from coal and 30% from gas on a TWh basis.

Chart: SOL Feedstock Consumption by Fuel ex. Natref (TWh), FY17-F30

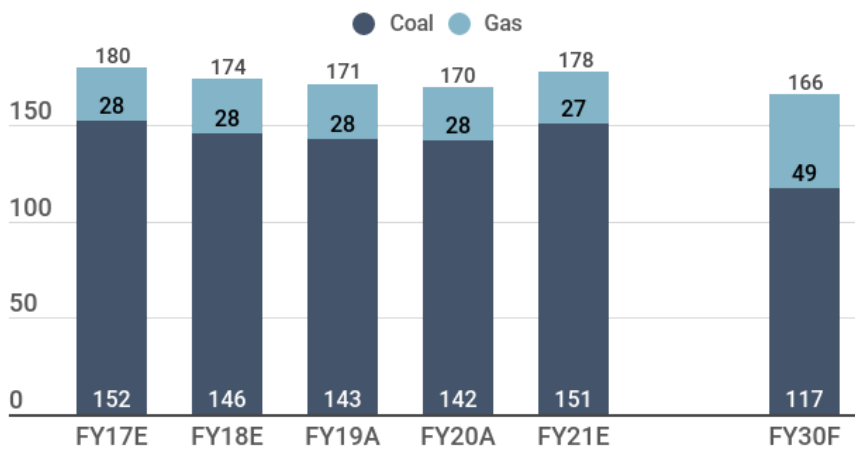


Chart: GCI | Source: Company Data, CDP, Global Climate Insights Estimates

In FY21 we estimate the SOL feedstock on a TWh basis was 85% from coal and 15% from gas.

By FY30, we estimate SOL will source 70% of its feedstock from coal and 30% from gas on a TWh basis.

Chart: SOL annual Feedstock Consumption (TWh), FY17-F30

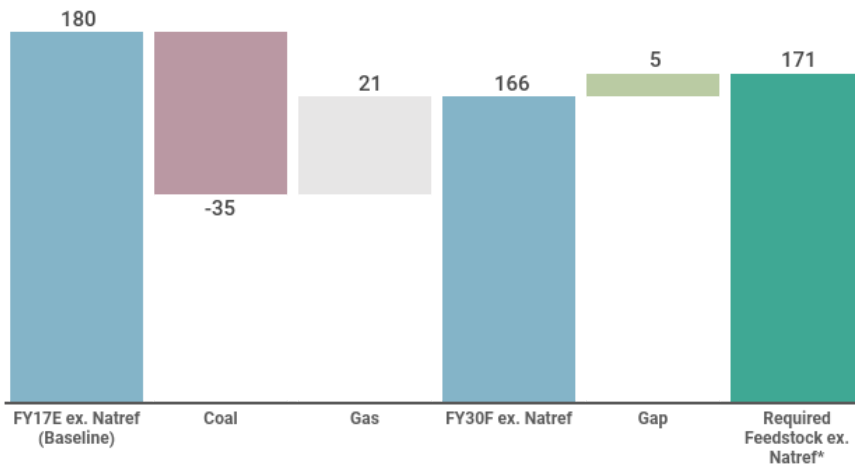


Chart: GCI | Source: Company Data, CDP, GCI Estimates | *Based on FY19

We believe 5 TWh of sustainable carbon feedstock will be required for SOL to maintain its FY19 production volumes.

To calculate SOL feedstock requirement in FY30 we have taken the estimated feedstock in FY17 and made the following changes:

- 35 TWh reduction from coal representing a 6 Mt decrease in coal for feedstock. We have assumed 6 Mt of the 9 Mt reduction is included for feedstock.¹⁴
- 21 TWh increase from gas, reflecting an increase in gas of 60 PJ on current production.

This results in a feedstock of 165 TWh (ex-Natref). However, if we assume SOL maintains production at FY19 levels, it would require an additional 5 TWh from other feedstocks such as sustainable carbon (e.g. biomass). This is broadly aligned with SOL's statement of ~2% of feedstock from green hydrogen and biomass/biofuels by FY30.¹⁵ Our estimates for FY30 imply that ~20 Mt p.a of coal will be used for SOL feedstock by FY30.

Execution risk

Access to gas supply

From the information available today it appears that SOL has only confirmed access to ~10% (15/170 PJ p.a) of the gas it will need by FY30.¹⁶ To meet its target by FY30, SOL will require a total of 170 PJ p.a of gas (3.6 Mt p.a) for feedstock. Currently, it requires around 110 PJ p.a of gas and sources it from Mozambique's Temane and Pande gas fields, which are in decline.¹⁷ Alternative sources of gas supply include expanding its operations in Mozambique, sourcing gas from the international market, or opening up new South African gas fields (which could conflict with 1.5C alignment according to the IEA). However, relying solely on gas imports would require a new import terminal near Maputo with a capacity of ~3.6 Mt p.a, which is larger than the currently suggested 2 Mt p.a for the LNG import terminal in Maputo.¹⁸ This terminal will also supply industries in Mozambique with gas, which indicates that more than 50% of supply could be at risk in this scenario.

Biomass

Reliance on gas supply is both challenging and risks locking South Africa into longer-term use of gas. SOL could replace its coal with a sustainable feedstock, like biomass. SOL has not set explicit targets for sustainable carbon to contribute to its GHG emission reduction. SOL has demonstrated it has the in-house knowledge through its Brunsbüttel facility in Germany to implement sustainable feedstock technologies, and the Secunda plant can use carbon feedstock today.¹⁹

Our view: Investors would benefit from understanding how much investment is required to increase SOL's pace of transition from using coal feedstock to biomass, while also reducing its reliance on insecure gas supply. Additional information on the type and amount of biomass needed and how feasible this may be to replace feedstock in the next 10 years would also be desirable. Given biomass has a lower carbon efficiency than gas, the quantum of feedstock will be higher.

¹⁴ This is based on the CDP disclosure for FY19 of use of coal across steam, energy and feedstock.

¹⁵ ['Leading the energy transition' webinar presentation](#) at Capital Markets Day 2021, 22nd September 2021

¹⁶ 292Bcf as reported in [SOL, 2021, Annual Integrated Report 2021](#), over an assumed 20-year period (15PJ/y)

¹⁷ [SOL Limited, Form-20F, for the year ended 30 June 2021](#)

¹⁸ [Total, Gigajoule deal brings \\$350m Maputo LNG import terminal a step closer \(engineeringnews.co.za\)](#)

¹⁹ [SOL, 2021, SOL Climate Change Report 2021](#)

4. SOL's GHG emissions

The table below sets out the total GHG emissions across scope 1, 2 and 3 as disclosed by SOL, which was 105.6Mt in FY21, an increase of 2% on FY20. SOL currently sets targets against ~91% on its FY21 GHG emissions. Coal from seven underground mines and gas from Mozambique are key inputs to SOL's operations. SOL has not disclosed how methane emissions from the coal mines in South Africa are mitigated and further reduced. SOL does not currently measure and disclose methane emissions from its Mozambique operations.

Table: SOL GHG emissions disclosed (Mt CO₂e)¹⁸

Emissions type	FY20	FY21
Scope 1	59.4	60.0
Scope 2	6.6	7.1
Scope 3	37.6	38.5
Total GHG emissions disclosed	103.6	105.6
Total GHG emissions included in targets	94.3	96.3
% GHG emissions included in targets	91%	91%
GHG emissions excluded from targets:	9.3	9.3
Natref	1.1	1.3
Mozambique	0.3	0.4
Scope 3 - Other disclosed	7.9	7.6
Scope 3 - Chemicals, not disclosed	-	SOL to assess
Scope 1 and 2 - Mozambique Operations (CO ₂ , CH ₄)	not included, CH ₄ not reported	not included, CH ₄ not reported
Methane emissions (Scope 1)²⁰	2.9	3.2

Source: Company data. Note: we have not included the Lake Charles adjustment of 0.6 Mt CO₂e in the above table.

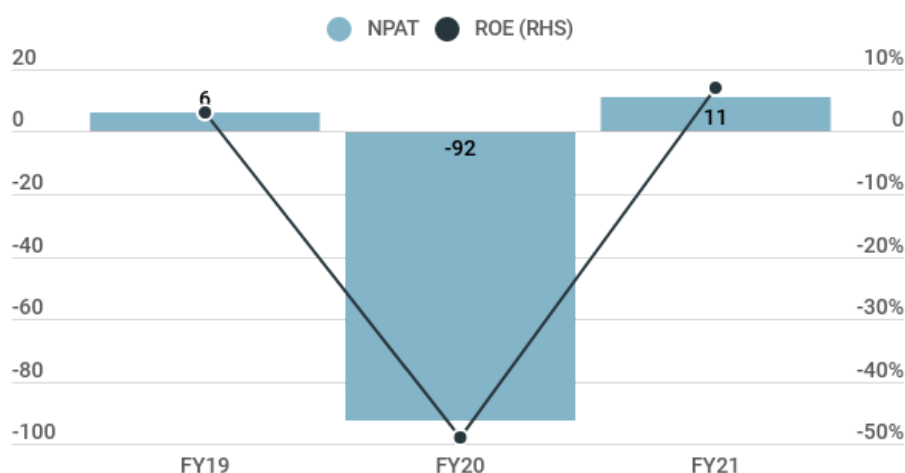
We believe it is important for investors to be able to clearly see the GHG emissions disclosed by companies, including to assess what proportion of total scope 1, 2 and 3 emissions a company has set emission reduction targets against.

²⁰ True Non-CO₂e (CH₄ and N₂O) emissions in CO₂e will be higher using AR6 100 year Global Warming Potentials (GWP) from Table 7.SM.7 in [IPCC, 2021, AR6 Climate Change 2021: The Physical Science Basis](#) given the GWPs have increased significantly over the last decade.

5. Financials

In FY21, SOL delivered an NPAT of R10,532m, exceeding the FY20 NPAT loss of -R91,917m. Return on Invested Capital (ROIC) was 6.8% in FY21, up from -29.5% in FY19. Return on Equity (ROE) was ~7% in FY21 and -49% in FY20. Due to high gearing and losses, SOL has not paid a dividend for the last five halves. SOL is partway through the implementation of SOL 2.0 including reducing its cost base, increasing margins (Chemicals and Energy), and changing its operating structure. This weaker financial position is likely to constrain SOL's ability to invest in its transition. By FY25, SOL is targeting an ROIC of 12-15% (US\$55 oil per barrel). SOL expects to pay 36% core headline EPS with debt below US\$5bn.

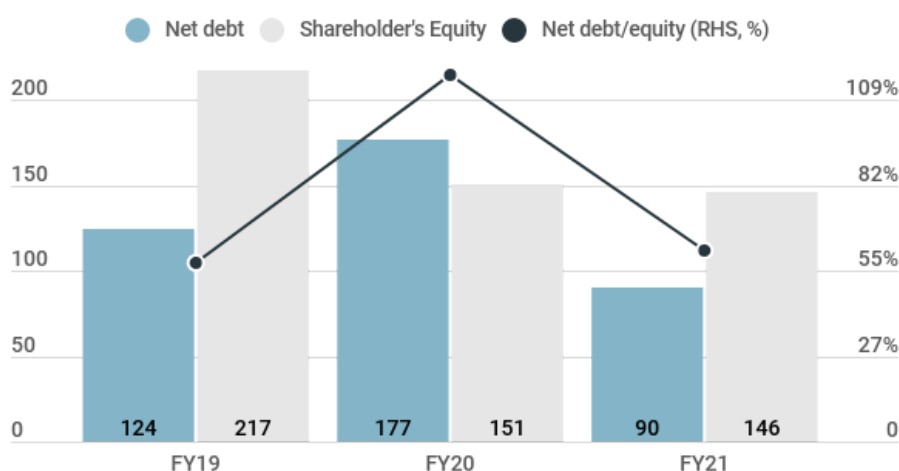
Chart: NPAT (Rand bn) & ROE (%)



SOL ROE increases from 3% in FY19 to 7% in FY21.

Chart: GCI | Source: Company Data, Global Climate Insights Estimates Global Climate Insights

Chart: Net debt and shareholders equity (R bn) & net debt/equity (%)



SOL net debt has decreased from R124bn to R90bn between FY19-21. However, net debt/equity has increased from 57% to 61%.

Chart: GCI | Source: Company Data, Global Climate Insights Estimates Global Climate Insights

SOL has indicated that future capital expenditure will amount to R20-25bn p.a to maintain its asset base and comply with environmental requirements. R15-25bn cumulative expenditure will be allocated to its climate transition (sustainability capex) from FY22 to FY30, implying an average of 9%-11% of total capital investment between FY22-FY30. This range assumes that annual sustainability capex is proportional to total annual capex.

Although SOL has provided a range of the capex required to fund its transition strategy until FY30, it has not quantified how that capex will be spent. Therefore it is difficult to assess how well SOL is positioned to execute on its plan. SOL has stated that they will trial, develop and take FID on a Carbon Capture Utilisation and Storage (CCUS) project for the International Chemicals business but has not disclosed the expected cost. The investment required by SOL into green hydrogen, which we expect to be an essential fuel for it going forward, has not yet been quantified.

SOL has stated that it expects to increase returns while undertaking its climate transition. It will be partly funding investment in higher cost feedstock with efficiency gains. It also expects International returns to increase above the weighted average cost of capital (10%) as the business ramps up.

Our view: SOL's strategy is at an inflexion point. It must demonstrate high climate ambition in order to secure the capital it needs to invest in innovative technologies past coal and gas. The Just Energy Transition Partnership with South Africa, just announced last week (2 November) brings renewal to the conversation of capital allocation. US\$8.5bn is on the table but it is not for 'gas as a transition fuel'. It provides a new opportunity for SOL to leapfrog over insecure gas supply to green hydrogen.

Chart: SOL Capital Expenditure FY19-21 vs Indicated Forward Total and sustainable Capex (R bn)

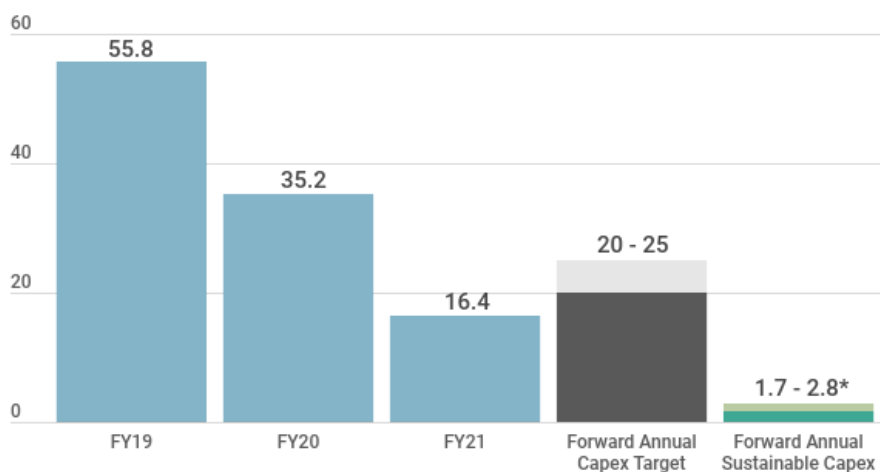


Chart: GCI | Source: Company Data, Global Climate Insights Estimates



SOL indicates that future capex will be R20-25bn per year, we estimate an average of 9%-11% allocated towards sustainability capex.

Sustainability capex refers to capital associated with sustaining through lower-carbon feedstocks, transforming the existing portfolio and investments in new sustainable businesses.¹⁹

*Based on a cumulative expenditure of 25-30 Rbn by FY30.²¹

²¹ [SOL, 2021, SOL Climate Change Report 2021](#)

6. Climate Voting summary

SOL is seeking shareholder approval for its climate change strategy at its AGM on 19 November 2021. This is SOL's first vote on its updated climate change plan presented at its Capital Markets day (September 2021). We understand the company is planning to have an annual vote to allow shareholders to voice their views on the adequacy and progress of its climate change strategy.

Our view:

- SOL has committed to absolute reduction in GHG emissions by FY30 that covers a material amount (91%) of its FY21 disclosed GHG emissions (scope 1, 2, 3). It has also stated that it does not rely on the use of carbon offsets or additional divestments to reach its FY30 targets. We see this as positive.
- However, SOL states it will not be aligned 1.5C by FY30. It has not provided evidence that its strategy will be in alignment with 1.5C aligned post-FY30 and, from the information disclosed, it is not possible for us to verify. If South Africa reduces its emissions in alignment with 1.5C, SOL's share (scope 1, 2, 3) of South Africa's GHG emissions will increase from 19% in FY19 to 21% in FY30.
- SOL's key lever in reducing GHG emissions is a switch out of coal feedstock. However, it is reliant on insecure gas supply, with unclear cost, placing emission reduction targets at risk.
- There appears to be more room for ambition in SOL's scope 3 emission target, given it has achieved 13% of the 20% reduction by FY21, and could achieve another 13% from the full scale back of coal exports.
- We believe SOL should provide investors with plans and costs for an alternate path not reliant on insecure gas. Bringing forward sustainable carbon for feedstock and the use of green hydrogen before FY30. Currently it is unclear to us how much SOL's ambitions have been constrained by access to finance. The right strategy could access the new \$8.5bn financing announced at the COP26.

The wording that SOL has put forward in its resolution is as follows.

SOL non-binding advisory resolution number 3: To endorse, on a non-binding advisory basis, the Company's 2021 Climate Change Report which sets out SOL's climate change ambition, strategy and its actions, and which:

- demonstrates the Company's support for the goals of Articles 2.1(a) and 4.1 of the Paris Agreement, as set out in its 2030 and 2050 emission reduction roadmap, in particular, its just transition plans towards a low carbon future "holding the increase in global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1,5°C above pre-industrial levels";
- sets out its **short-, medium- and long-term quantitative greenhouse gas reduction targets (scope 1 and 2)** in support of the goals of Articles 2.1(a) and 4.1 of the Paris Agreement for its operations in Eurasia, the United States and South Africa; and
- sets out its **medium- and long-term quantitative greenhouse gas reduction targets (scope 3: category 112)** and commitment to continue work to set out its scope 3 greenhouse gas emissions' baseline and other targets.

Summary climate voting assessment

We have reflected on the resolution put forward by SOL and summarised SOL's position against what we see as the key aspects of a credible climate strategy.

Table: GCI's 2021 climate vote summary assessment for SOL

Section 1: Targets and Strategy

Does the company have short-term (~2025) and medium-term (~2035) emissions reduction targets that meet the following criteria?

• Absolute	✓
• 95%+ of scope 1, 2, 3 emissions (This allows us to understand the materiality of GHG emission reduction targets)	×
• Aligned with a 1.5 degree pathway	Disclosure not sufficient to assess

For these targets and timeframes:

<ul style="list-style-type: none"> Identify and quantify actions leading to emissions reduction <u>GCI comment</u>: Key activities have been identified but materiality of these activities on GHG emission reduction has not been consistently quantified. 	Partly
<ul style="list-style-type: none"> Identify and quantify contribution of carbon offsets, CCUS, divestments and avoided emissions. <u>GCI comment</u>: SOL has stated it will not need to rely on divestments to reach its FY30 target. SOL doesn't expect to use carbon offsets pre FY30. CCUS use has not been quantified. 	Partly for FY30 only
<ul style="list-style-type: none"> Commit to and demonstrate how capital expenditure is aligned <u>GCI comment</u>: SOL has announced its intended capital expenditure range of ~R1.7-2.8bn p.a and committed to not funding new coal mines, however, it has not committed to align capex with the Paris Agreement. 	×

Section 2: Climate Lobbying

• Does the company obtain an InfluenceMap score of C+ or above?	×
	Score: C-

Section 3: Climate Governance

<ul style="list-style-type: none"> Is executive remuneration linked to the targets set out above? <u>GCI comment</u>: SOL has not yet set 1.5C aligned targets and linked each target to remuneration. However, it has made substantial progress in linking remuneration from FY20. 	Partly
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Source: Global Climate Insights, Company data

Appendix

Remuneration

Table: SOL retrospective remuneration and future target

Target	Sep 2021
Target FY21 (retrospectively applied)	<p>SOL did not have remuneration targets that specifically included the delivery of its GHG emission reduction targets. However, as set out in SOL's Integrated Report in FY21, SOL retrospectively applied a 10% weighting to the Group Executive Committee (GEC) short-term incentives (STI) in FY21 for delivering its climate change program, of which it received an 11.17% score. This was awarded for:</p> <ul style="list-style-type: none"> • Releasing the FY30 and FY50 GHG roadmaps. • Selecting the short-list of bidders to provide 600 MW of Renewable Energy. • A 0.4% year-on-year improvement on Energy Efficiency.
Target FY22	<p>SOL's LTI plan references the delivery of its Scope 1 and 2 - South Africa FY24 GHG emission reduction targets when assessing performance. This forms part of its 25% weighting for ESG detailed below.</p> <p>In FY22, 20% of the GEC STI will be linked to "advancing sustainability" including:</p> <ol style="list-style-type: none"> 1. Reducing GHG Emissions via securing Power Purchase Agreements (PPA's) for SOL's FY25 renewables target, a 1% energy efficiency improvement (30 June 2021 baseline), and securing PPAs that will save 0.65 Mt CO₂e by 2024 (15% weighting); and 2. Shifting to lower-carbon products and green hydrogen by setting up the new sustainable business venture, establishing two sustainable synthetic fuels (PtX) partnerships, and competition of two feasibility studies submitted for approval (5% weighting). <p>In FY22, 25% of the Long-Term Incentives (LTI) for the GEC will be linked to a "Holistic Focus on ESG", which includes:</p> <ol style="list-style-type: none"> 1. A 3.8% reduction (equating to 2.36 Mt p.a. CO₂e) in Scope 1 and Scope 2 emissions from a FY17 baseline by end FY24 for the Energy Business. 2. 60% Renewable power for its Chemical operations in Europe and America by the end of FY24. 3. Within 6% of the DJSI inclusion score by November 2023. <p>We note in FY21 25% of SOL's LTI incentives were linked to increases in production, which works against GHG emission reductions required under its decarbonisation strategy.</p>

Source: Company data.

Governance and reporting

Table: SOL governance and reporting link to its climate transition strategy

Area	Prior	Sep 2021
Climate engagement	Associations are not fully disclosed. SOL's association review is focused on policy views rather than actual lobbying activity.	<p>Completed audit of alignment with industry associations on climate policy.</p> <p>This audit did not recognise how key industry associations are engaged in lobbying activities misaligned with the Paris Agreement, nor set out how misalignments will be addressed. We would like to see the inclusion of relevant third-party assessments of industry lobbying activities.</p>
Climate governance	<p>The board committee of Safety, Social and Ethics Committee (SSEC) is responsible for climate change.</p> <p>SOL has not disclosed a review of its board climate competencies. Muriel Dube, its non-executive director, has climate experience.</p>	<p>No change to internal reporting on climate governance.</p> <p>Historically, SOL has rejected shareholder led resolutions at its AGM. Shareholder resolutions can be part of a constructive dialogue with shareholders, in addition to existing engagements.</p>
TCFD	SOL has been a TCFD supporter since September 2018 and sign-posts TCFD disclosures. A 1.5C scenario has not been included in its scenario analysis.	SOL incorporates their own 'Accelerating to 1.5°C' scenario, however, this results in a 1.5-1.7°C range by 2050.

Source: Company data

SOL implied GHG emissions trajectory

We note that SOL has improved the accuracy of its scope 3 calculations from FY17 to FY19, accounting for the lower FY17 contribution. Our chart is based on disclosed company information.

Chart: SOL Absolute GHG Emissions (Mt CO₂e) FY17-F21 (Actual) and FY26 and FY30 target

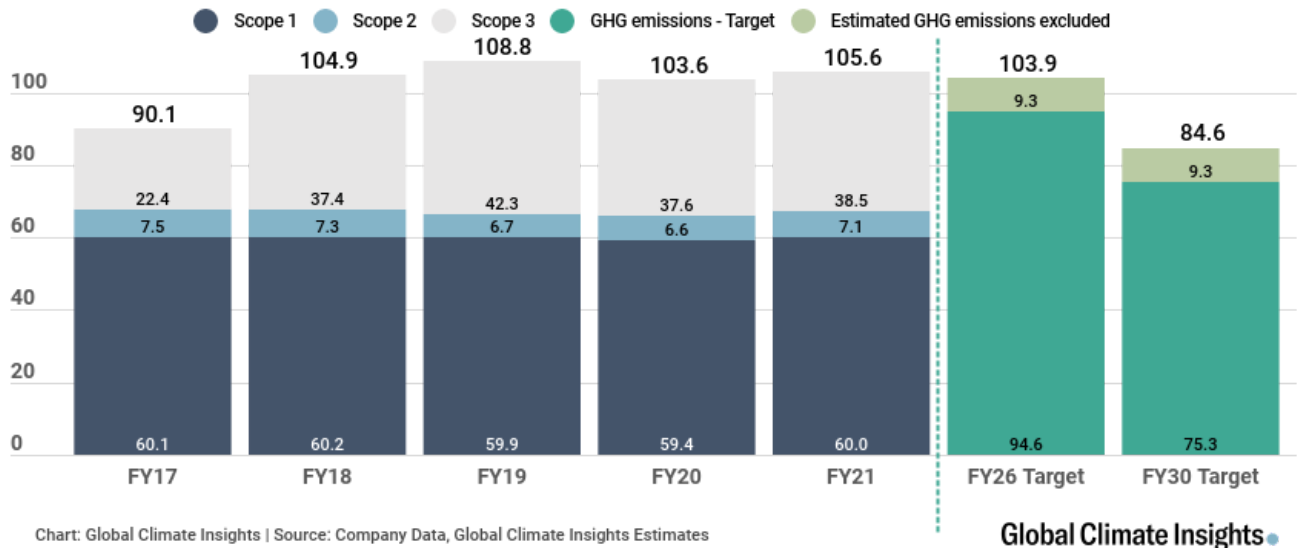
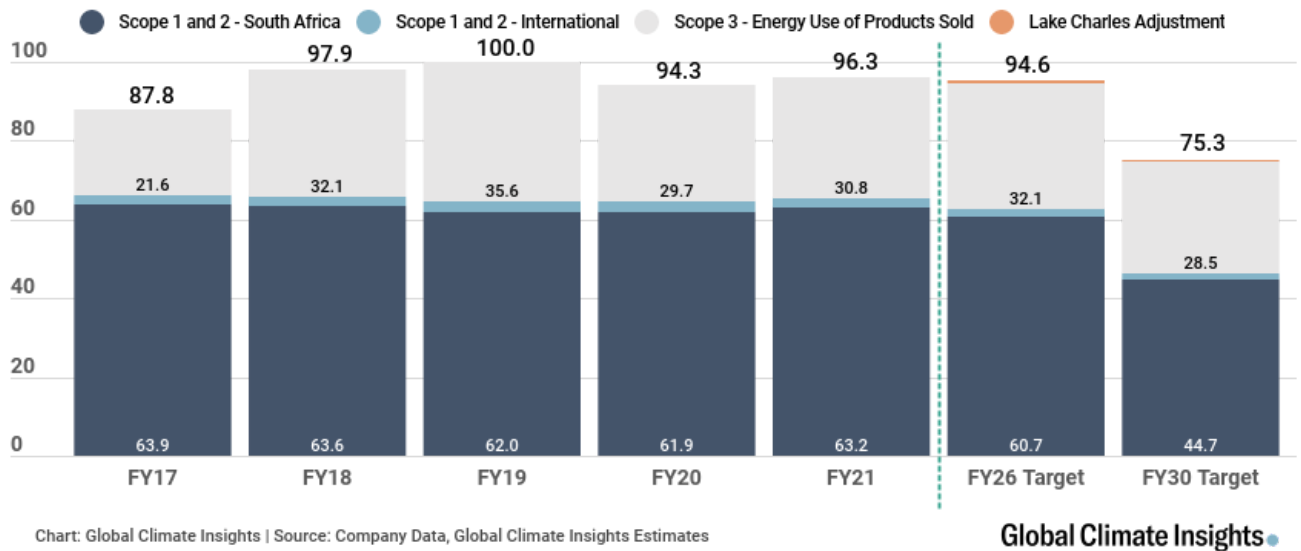


Chart: SOL Absolute GHG Emissions included in targets (Mt CO₂e) FY17-F21 (Actual) and FY26 and FY30 target



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