

Sasol is committed to reduce its greenhouse gas emissions



Case for change

“The scientific evidence for warming of the global climate system is unequivocal.”

IPCC 5th Assessment Report
2014

- The world is experiencing significant climate change impacts.
- We acknowledge that we have a role to play and reducing greenhouse gas emissions from our operations is necessary.
- Our approach hinges on three pillars:

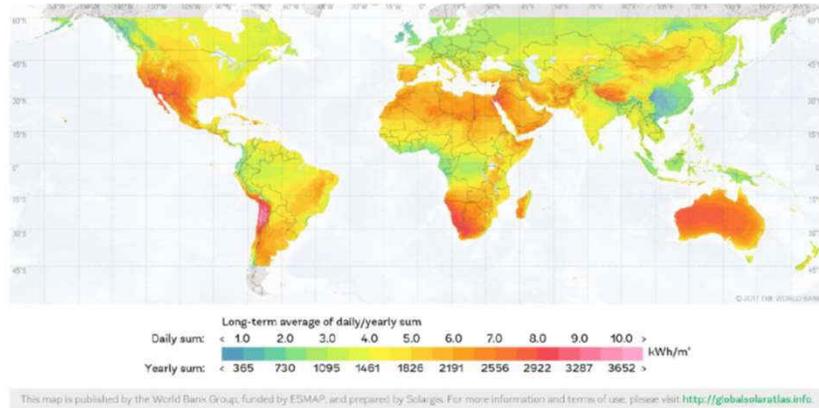


Our climate change response forms part of our broader sustainability journey

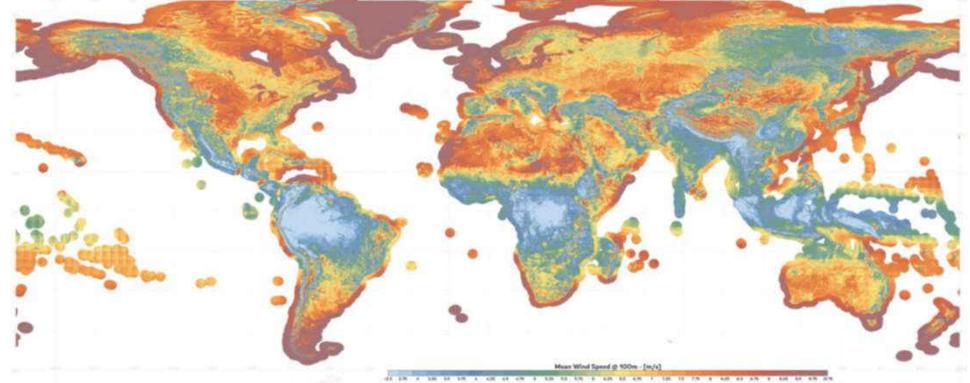
South Africa – Stable, Good Infrastructure, Great Renewable Potential



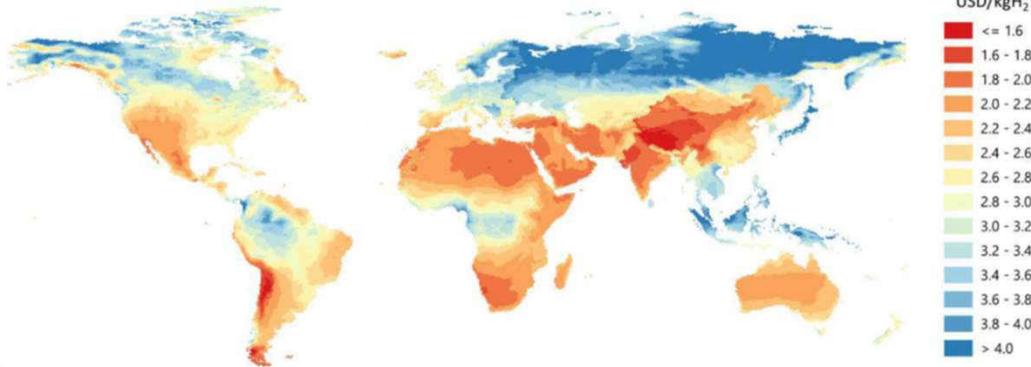
Global solar resource map of direct normal irradiation



Global wind speed map at 100 m above ground level

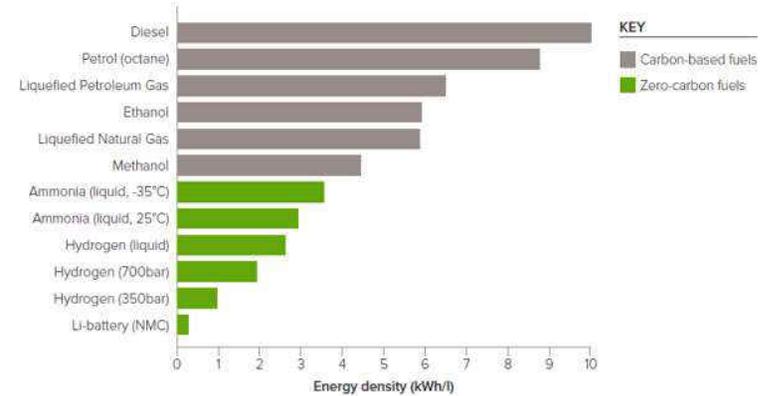


Hydrogen costs from hybrid solar PV and onshore wind systems in the long term



Moving Hydrogen

The volumetric energy density of a range of fuel options.

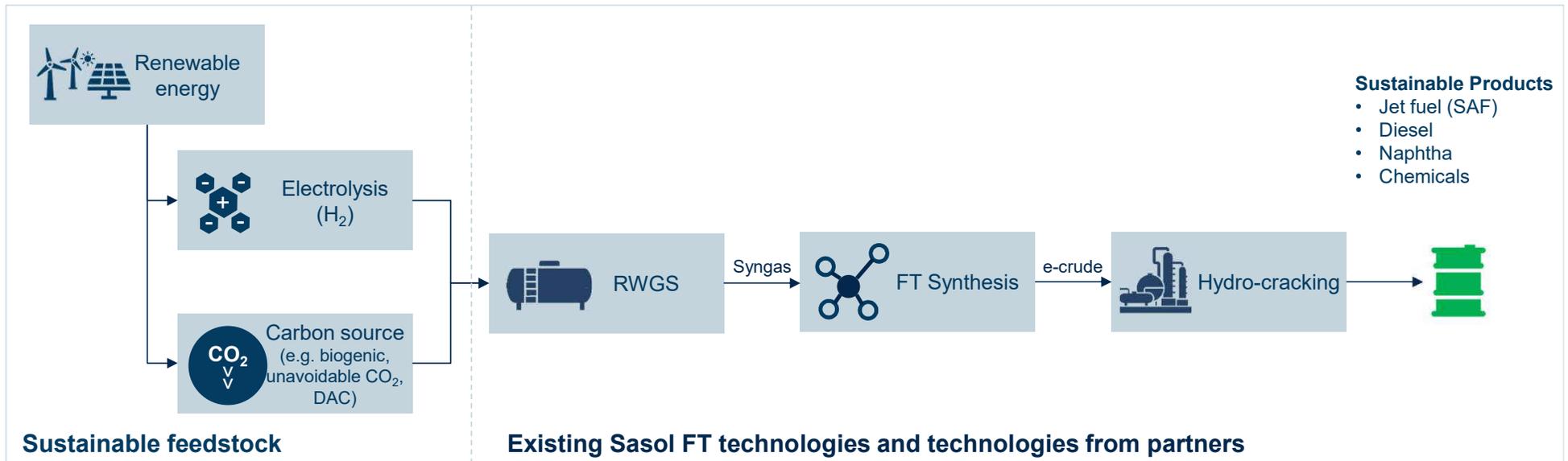


The power to liquids and high value chemicals (PtX) landscape is developing rapidly, presenting a global opportunity for Sasol's proprietary FT technology



PtX technology for Sustainable Aviation Fuel (SAF) market based on a sharply declining cost curve (cost of green electricity and hydrogen electrolyzers) and highest GHG emission elimination. PtX is also a promising pathway to lower carbon intensity chemicals.

Fischer Tropsch-based PtX process to produce power fuels, including carbon neutral kerosene for jet fuel



RWGS: Reverse Water Gas Shift Reaction | SAF: Sustainable Aviation Fuel | FT: Fischer Tropsch | PtX: power to liquids and chemicals | DAC: direct air capture | Unavoidable CO₂ as defined by applicable standards

Refining our Fischer-Tropsch licensing offering for smaller-scale global deployment and enhancement via next generation FT catalysts



Business objective:

As a leader in Gas-To-Liquids technology, Sasol has a licensing offering for large scale (> 30 000 bbl/day) application and is developing cost-effective technology offerings at smaller scales. Most global market opportunities for PtL (powerfuel) projects are at a small scale (<5 000 bbl/day) and by Sasol developing and optimising its smaller scale licensing offering, will enable an increase in licensing royalty earnings and possible equity investments opportunities in the future.

Visualisation:

From:



34 000 bbl/day GTL licensing package



To:



Cost competitive
2 500 to 10 000 bbl/day PtL
licensing package

Sasol competitive advantages:



Sasol has a golden key i.e. **proprietary proven technology** that is fit for purpose for XtL applications.



Sasol has **over 70 years of experience with Fischer-Tropsch** technologies & catalyst development. We have many experts who can maintain our competitive offering relative to other FT technology providers.



Sasol has **unlocked its technology for access to others** and is enabling projects through licensing ventures (e.g. Uzbekistan GTL)



Sasol has **strategic partnerships in place** with other technology companies (e.g. Haldor Topsoe) who have **competitive small scale upstream and downstream technology offerings to enhance PtL.**

Key Success Factors:

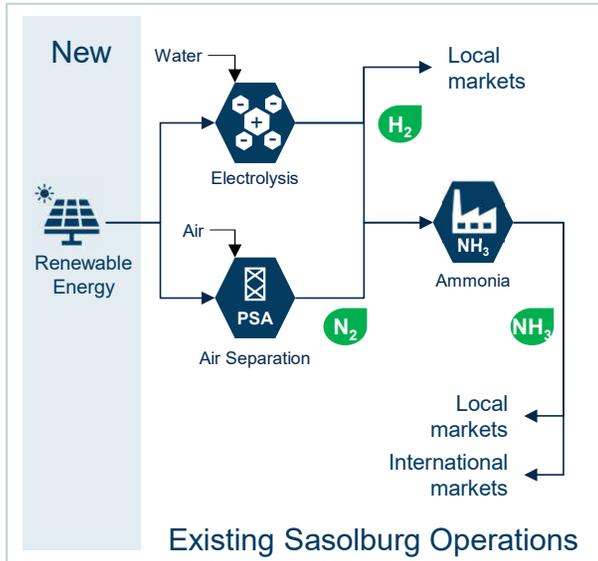
- **Research funding** for developing optimised technology offering based on our **next generation catalyst (Opportunity 4a)** which will have a significantly higher yield to SAF and therefore lower SAF production costs
- **Development funding** for process optimisation for small/medium scale technology licensing offering.
- **Participation in proof of concept PtL projects**

Sasol assets and proprietary FT technology will support South Africa's energy transition

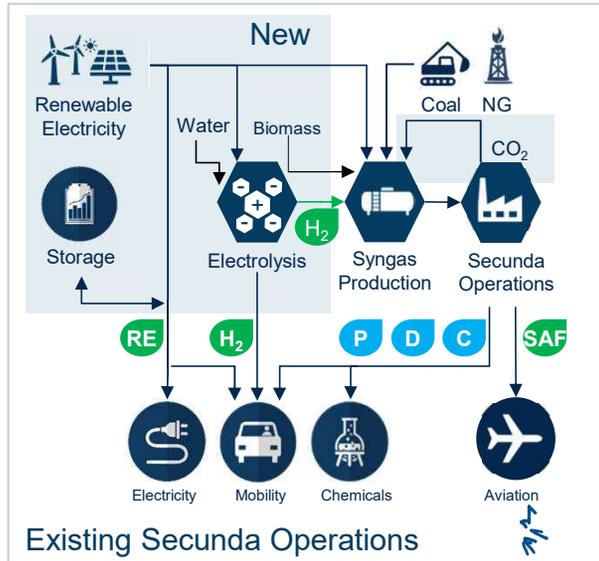


ILLUSTRATIVE

Explore converting Sasolburg equipment into green hydrogen and/or ammonia production

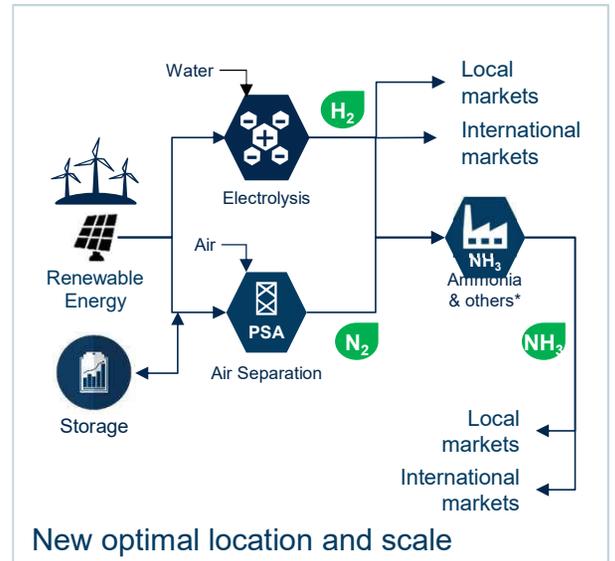


Incubating sustainable solutions by leveraging Secunda assets



Note: the concept enabled by proportional or allocated accounting of green hydrogen and biomass

Explore greenfield hydrogen projects



*Note: others, for example PtX provided viable renewable carbon sources identified

SAF: Sustainable Aviation Fuel | PSA: Pressure Swing Absorption Plant | NG: Natural Gas | P, D, C: Sustainable Petrol, Diesel & Chemicals | N₂: nitrogen | H₂: hydrogen | RE: Renewable energy | NH₃: Ammonia

Hydrogen has the potential to reshape the South African energy landscape



Critical enablers to boost hydrogen economy development

	Strategy and targets	South Africa needs a Hydrogen Strategy – nationally coordinated with action plans and clear targets
	Regulation and licensing / permits	Regulatory consistency and coordinated project approvals to activate the market and assist early projects is required
	Infrastructure	Promote infrastructure developments via PPPs and collaboration among actors to capture local and export market infrastructure synergies
	Value chain	Maximise value creation across hydrogen value chain through local and international partnerships
	Financing and incentives	Facilitate access to affordable finance by attracting FDI and international development institutions
	Coordination and partnerships	Create partnerships and joint ventures to share knowledge and expertise while diversifying investment risk
	Research and Development	Promote research and innovation projects on hydrogen technologies nationally and with international partners
	Skilled labour	Develop programmes for hydrogen-related education and training focusing on new skills required for anticipated job creation opportunities

Sasol is stepping up to play a leading role in South Africa’s hydrogen journey



THANK YOU

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