

## Sasol and its GTL Value Proposition Adding Value to US Gas Resources LSU Energy Summit, October 18, 2011







## Sasol - a truly integrated company

Sasol Limited			
South African energy cluster	International energy cluster	Chemicals cluster	Specialist services
Sasol Mining	Sasol Petroleum International	Sasol Olefins & Surfactants	Sasol Technology
Sasol Synfuels	Sasol Synfuels International	Sasol Polymers	Sasol Financing
Sasol Gas		Sasol Solvents	
Sasol Oil			







# Sasol's integrated business model - converting coal and gas into liquid fuels and chemical products







### Sasol's synfuels plant in Secunda



Produced more than 1.6 billion barrels of high quality fuels from coal and gas



### The GTL process









#### Capacity of GTL reactors increasing



#### Enhanced performance through increased volumetric conversion efficiency

\* Feasibility study





## GTL fuel – a world class product

- Colourless, clean burning fuel for use in diesel and jet engines
- High cetane number, virtually sulphur and aromatics free
- Convenient and easy to use
- Can be used "pure" or as blend with conventional diesel
- Naphtha a diluent for oil sands bitumen



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- Compatible with existing engine technology and distribution infrastructure
- Enables the development of new generation internal combustion engine technologies with improved engine efficiency and further reduction of vehicle pollutant emissions

• Meets Euro 5 specifications



clean, clear product





## GTL fuel finding widespread application



Demonstration of first passenger flights in September 2010 on fully synthetic jet fuel



In 2006, a Toyota Hilux Raider, drove from Johannesburg to Qatar on GTL diesel only



The oil from the Toyota fuelled by GTL diesel compared to the oil from the Toyota running on normal diesel after the GTL challenge



The US airforce has tested GTL/CTL fuel in B-52s and B-1Bs



On 1 Feb 2008, an Airbus A380 flew on GTL fuel





#### Environmental performance - local air quality benefits

Greenhouse gas (GHG) impact, measured on a life cycle basis, is comparable to a modern, efficient petroleum refinery

High cetane number and very low levels of sulphur and aromatics in GTL Diesel ensure a more efficient and cleaner-burning combustion environment







# Sasol offers a proven alternative solution to meeting growing global energy and chemical demand







## Oryx GTL, Sasol's GTL flagship

#### in operation and highly successful





- Joint venture between Qatar Petroleum (51%) and Sasol (49%)
- 32 400 bbl/d design capacity, producing ultra-low sulphur diesel, naphtha and LPG
- Stable operation (80-90% capacity utilisation)
- Instantaneous production record of 36 860 bbl/d achieved
- Production to be increased by 10% through de-bottlenecking
- Investigating the possibility of an expansion

Highly profitable venture with handsome returns to shareholders





### **Commercial scale reactors**







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## View from the sky







#### GTL an attractive economic proposition in North America

Crude oil prices expressed as a multiple of natural gas prices



\* Source: EIA





### Value adding expansion potential







## GTL – A first of a kind in the US



- Leading edge, commercial technology that can be implemented immediately
- Energy diversity and security
- Integrated value chain opportunities and synergies (upstream and chemicals)
- Flexibility in transportation fuels industry
  - Fungible products that do not rely on complex contractual chains
  - Commercial alternative to conventional production of diesel and jet fuel
  - Superior quality fuels to meet stringent specifications (Euro 5)
- Environmental footprint on par with modern, efficient petroleum refining

A value adding alternative to unlock natural gas resources





## Economic growth for all stakeholders



A GTL facility in the US (~ 4 mtpa) has the potential to create significant macroeconomic benefits in the form of:

- Direct employment of more than 850 people
- Employment of more than 5,500 people (at peak) during the construction phase
- Direct capital investment of up to US\$ 10 billion over a period of 3 – 4 years
- Increase in foreign exchange savings and improvement in balance of payment
- Increase in economic growth (GDP)
- Increased fiscal revenue

#### A GTL Industry could be a significant contributor to the national and state economy





### A GTL partnership – Sasol and State of Louisiana

- Sasol believes its GTL value proposition could unlock mutually beneficial economic benefit for both partners
- Sasol is conducting a feasibility study in Louisiana over the next 18 months
  - Production of ~ 2 or 4 mtpa
  - The project could create up to 850 permanent positions and up to approximately 5,500 jobs during peak construction periods



Governor Bobby Jindal, Governor of Louisiana Joint Announcement (13 September 2011)





## Thank You Michael Hayes; Corporate Affairs Manager