

## **Purpose**

The purpose of this document is to:

- provide an update on progress with our world-scale ethane cracker and derivatives units, currently under construction near Lake Charles, Louisiana United States (US); and
- provide updated guidance on total project costs, schedule and expected earnings from the project.

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#### FORWARD-LOOKING INFORMATION

Sasol may, in this document, make certain statements that are not historical facts and relate to analyses and other information which are based on forecasts of future results and estimates of amounts not yet determinable. These statements may also relate to our future prospects, developments and business strategies. Examples of such forward-looking statements include, but are not limited to, statements regarding exchange rate fluctuations, volume growth, increases in market share, total shareholder return, executing our growth projects (including LCCP), oil and gas reserves, cost reductions, our Continuous Improvement (CI) initiative and business performance outlook. Words such as "believe", "anticipate", "expect", "intend", "seek", "will", "plan", "could", "may", "endeavour", "target", "forecast" and "project" and similar expressions are intended to identify such forward-looking statements, but are not the exclusive means of identifying such statements. By their very nature, forward-looking statements involve inherent risks and uncertainties, both general and specific, and there are risks that the predictions, forecasts, projections and other forward-looking statements will not be achieved. If one or more of these risks materialise, or should underlying assumptions prove incorrect, our actual results may differ materially from those anticipated. You should understand that a number of important factors could cause actual results to differ materially from the plans, objectives, expectations, estimates and intentions expressed in such forward-looking statements. These factors are discussed more fully in our most recent annual report on Form 20-F filed on 28 August 2018 and in other filings with the United States Securities and Exchange Commission. The list of factors discussed therein is not exhaustive; when relying on forward-looking statements to make investment decisions, you should carefully consider both these factors and other uncertainties and events. Forward-looking statements apply only as of the date on





## **PROJECT UPDATE**

#### Introduction

The Lake Charles Chemicals Project (LCCP) consists of a world-scale 1,5 million ton per year ethane cracker and six downstream chemical units which is currently under construction adjacent to Sasol's existing chemical operations, near Lake Charles, Louisiana.

### **Key project metrics**

Total project normalised output 1,77 mtpa Ethane consumption 100 000 bpd Ethylene production 1,54 mtpa First unit (LLDPE) beneficial operation February 2019 Last unit (Guerbet) beneficial operation January 2020 US\$10,9 billion Capex spent to date (31 December 2018) Overall project completion 94% 84% Construction completion Total project capex (including contingency and weather provision) US\$11,6 - 11,8 billion US\$1,3 billion EBITDA expected in FY22

#### **Project update**

As at the end of December 2018, engineering and procurement activities were substantially complete and construction progress was at 84%. Our overall project completion was 94% and capital expenditure amounted to US\$10,9bn.

The first derivative unit, linear low-density polyethylene (LLDPE), produced first product in January 2019 and beneficial operation is expected in February, approximately two months behind schedule. Utilities to support the early process units were fully operational by end November 2018. These utilities together with LLDPE, will comprise ~ 40% of the facility's existing total cost.

The productivity rate for the overall project closely tracked management's estimate until the latter part of Q4CY2018. During this period several factors, within and beyond the control of management, negatively impacted the completion schedule and associated cost for the remaining units. These factors can be summarised as follows:

- Additions to scope
  - Late scope additions for the Cracker as a result of incomplete engineering work not timeously identified;
  - Increased scope to ensure process safety for the Cracker and Ethylene Oxide/Ethylene Glycol (EO/EG) unit due to defective carbon steel forgings. The impact was fully assessed late in Q4 CY2018 leading to a one month delay;
- A cumulative month of work being lost as a result of excessive rainfall in Q4 CY2018;
- Productivity losses exacerbated by high absenteeism around public holidays and construction rework since end November 2018; and
- Schedule delays of the remaining units will result in additional overhead costs.

As part of the interim financial year project assurance review process, specific focus was placed on the impact these factors may have on the project's overall cost and schedule. The outcome of this process is summarised in this document.

## 2. CHANGES TO PREVIOUS GUIDANCE

The updated guidance, taking the impact of these factors into account, can be summarised as follows:

	Updated guidance	Previous guidance
Capital cost	US\$11,6 - 11,8bn (including a US\$200m contingency and weather provision)	US\$11,13bn
Project schedule (BO dates)	protision,	034.1,133.1
LLDPE	February 2019	December 2018
EO/EG	June 2019	February 2019
Cracker	July 2019	February 2019
LDPE	August 2019	March 2019
Ziegler	November 2019	H2CY19
ETO	December 2019	H2CY19
Guerbet	January 2020	H2CY19
EBITDA*		
FY19	US\$ 165 – 195m loss	US\$110 - 160m
FY20	US\$0,7bn	US\$1bn
FY21	US\$1,2bn	US\$1,3bn
FY22	US\$1,3bn	US\$1,3bn

<sup>\*</sup> All EBITDA are quoted in nominal terms. Based on Ethane @ US\$36 c/gal and oil @ US\$66 /bbl in real terms.

It is estimated that a US5c/gal change in the ethane price will have an impact of approximately US\$75m on an annual EBITDA at steady state.

The schedule above implies that over 80% of the total 1,77 mtpa output from LCCP will reach beneficial operation (BO) in August 2019 and will then follow a planned ramp-up schedule. The Ziegler and Ethoxylate (ETO) units will reach BO in November and December respectively, resulting in 95% of LCCP capacity reaching BO by end of CY2019; the Guerbet unit BO has moved to January 2020. These plants will also follow a market driven ramp-up schedule.



# Factors impacting capital cost estimate

As mentioned, several controllable and uncontrollable factors negatively impacted the project's schedule and overall cost estimate. The increase in the cost estimate (inclusive of actual and future allowance) can be categorised as follows:

US\$11,13 billion	
US\$180 million	<ul> <li>Increased scope to ensure process safety for Cracker and EO/EG due to defective carbon steel forgings, with the full impact assessed late in Q4CY2018. This resulted in higher material costs to replace a significant amount of defective units.</li> </ul>
	<ul> <li>Underestimation of existing scope items that require higher repairs or additional work in the completion of EO/EG, Cracker and remainder of the UO&amp;I units.</li> </ul>
	<ul> <li>As part of the revised estimate, allowances were made for additional potential scope items and associated construction hours required. These allowances are estimated at approximately US\$70 million.</li> </ul>
US\$45 million	<ul> <li>Rainfall in Lake Charles for the period September through December 2018 was 33 inches (838mm), more than recorded during Hurricane Harvey.</li> </ul>
	<ul> <li>The number of days with rain and rain affected days in Q4 CY2018 compared to Q4CY2017 amounted to 56 vs 27 and 41 vs 20.</li> </ul>
	<ul> <li>An estimated 600 000 hours (20 days) were lost due to weather with craft labour off-site. In addition, it was also estimated that 224 000 hours were lost with craft labour waiting for improved weather conditions before continuing work.</li> </ul>
US\$155 million	<ul> <li>Productivity rates were maintained at planned rates to September 2018.</li> <li>Between November 2018 and January 2019, a significant increase in productivity losses were experienced as a result of much higher than planned absenteeism rates around public holidays resulting in incomplete crews at various work fronts.</li> </ul>
	We have also confirmed a heightened increase in poor quality of construction work causing rework on several work fronts.
	<ul> <li>Although several management interventions were implemented, an increase in the project's overall costs was incurred.</li> </ul>
	<ul> <li>As part of the updated estimate we have included allowances in the event that productivity rates do not recover to pre-September 2018 levels. A further allowance was made for slower ramp-down curves as units reached the end of construction completion. These allowances amount to US\$120 million.</li> </ul>
US\$70 million	<ul> <li>Looking forward, trends in delays experienced during Q4 CY2018 were extrapolated for the remaining plants resulting in a time extension for construction and commissioning.</li> </ul>
	<ul> <li>The updated estimate of US\$70 million allows for two months of construction delay and one-month concurrent commissioning delay.</li> </ul>
US\$200 million	<ul> <li>In addition to the above, further allowance has been made for possible rain delays and other unforeseen events until the project's completion.</li> </ul>
	US\$180 million  US\$45 million  US\$155 million

## LCCP fundamentals remain intact

Despite the revised cost and schedule, we still consider the LCCP to be a sound strategic investment that is of significant importance to Sasol's future growth and will generate value for our shareholders for many years into the future. LCCP will transform the existing Lake Charles site into an integrated, multi-asset site that will allow fixed and infrastructure costs to be spread over multiple product lines, and provide future opportunities for investment in additional downstream chemical facilities.

Further benefits include:

- the attractive position of the LCCP on the global ethylene cost curve places LCCP in a competitive position to successfully endure market volatility;
- production of low-cost polyethylene produced from the two new, large polyethylene facilities that make use of world-class technology;
- improving earnings stability throughout commodity chemical cycle;
- anticipated margin expansion through securing long-term supply and removing offsite toll-processing;
- anticipated earnings growth as technology and application development further increase value through products into differentiated and specialised markets;
- full value chain integration with the existing ethoxylation units at Lake Charles;
- allowing for further LCCP expansion or other site specific investment opportunities in future;

## 3. CAPITAL EXPENDITURE

The LCCP's expected remaining capital cash flow requirements can be summarised as follows:

Cumulative capital expenditure as at 31 December 2018	\$10,9bn*
Cumulative cash flow as at 31 December 2018	\$10,4bn
Projected capital expenditure (cash flow)	H2FY19 - \$0,9bn
	FY20 - \$0,7bn
Claims and incentives between FY20 – FY23	(\$0,4bn)

<sup>\*</sup> Includes accruals of US\$0,5 bn

### **Abbreviations**

BO – beneficial operation

CY – calendar year

EBITDA – earnings before interest, tax, depreciation and amortisation

 ${\sf EO/EG-ethylene\ oxide/ethylene\ glycol}$ 

 ${\sf ETO-ethoxylates}$ 

FY – financial year

LCCP – Lake Charles Chemicals Project

LDPE – low density polyethylene

LLDPE – linear low density polyethylene

mtpa – million tons per annum

PE – polyethylene

UO&I – utilities, offsites and infrastructure