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To: Honorable Members of the Joint Legislative Committee on the Budget

From: Greg Albrecht, Chief Economist, Legislative Fiscal Office
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Subject: Act 704 of 2014 Evaluation, Sasol Chemicals (USA) LLC

Act 704 of the 2014 Regular Session requires a standard set of economic and financial information be submitted to the Joint Legislative Committee on the Budget (JLCB) for projects that involve a state commitment in excess of \$10 million over the term of a project. The Act requires the Legislative Fiscal Office to provide an evaluation of the submitted project's economic and fiscal impact assessment.

Act 704 of 2014 Provisions

- a) State Commitment: The estimated benefits provided to Sasol over a twelve-year projection horizon (2014 – 2025) are \$281.3 million; composed of \$145.2 million of statutory state incentive benefits, \$1.1 million of FastStart program costs provided by LED, \$20 million for a training facility and associated equipment at SOWELA Technical Community College, and a \$115 million grant reimbursement of project costs.
- b) Analytical Model and Inputs: Estimates of the economic impact in Louisiana of the construction and operation of the Sasol facilities were provided by Professor Dek Terrell (Executive Director) and Stephen Barnes (Director), of the LSU Division of Economic Development, in their report dated August 25, 2015. They utilized a state level IMPLAN input-output model of Louisiana. This is a commercially available and widely used economic impact analysis model. According to the LSU impact analysis, the main source of input data for the resulting economic impacts are the planned hiring and expenditures reported to LED by the firm and then provided by LED for this analysis. Direct construction and operational employment and wages were provided. Direct construction employment ramps up and then subsides over an eight year period of 2014 – 2021, beginning with 700 jobs and \$48.2 million of wages in 2014, peaking at 5,572 jobs and \$603.3 million of wages in 2019, before falling off to construction completion in 2021 with 435 jobs and \$47 million in wages. Operational employment ramps up over a ten-year period, beginning in 2014 with 41 jobs and \$3.5 million of wages and reaching full operational capacity in 2023 with 1,272 jobs and \$140.2 million of wages. Future monetary values are adjusted to 2015 dollar values by discounting future nominal dollar values by a 2.49% factor reflecting the annual average yield curve of 20-year U.S. Treasury bond yields at the time of the impact analysis (August 20, 2015). While the impact analysis is carried out to the year 2030, this review only considers the analysis through 2025, and only in nominal dollar terms. *The last year of reported state costs provided to the project is 2025, and Act 704 requires that the comparison of costs and benefits be for the same time period.*
- c) Economic Impacts:
 - i) Value Added is estimated for each of the eight years of the construction phase and for each year of the operational horizon of the analysis. Value added attributable to construction varies considerably from year-to-year as a function of the nature of the particular components and facilities associated with this project; an ethane cracker and associated derivative plastics and chemical plant, and gas-to-liquids facility. Value added from construction is estimated to total some \$5.7 billion in nominal dollars. Value added attributable to operations ramps up steadily over the ten-year period from 2014 – 2025, totaling some \$29.4 billion in nominal dollars. Value added is the difference between an

industry's or establishment's total output and the costs of its intermediate inputs, the sum of which is gross domestic product, the broad headline measure of economic activity, although it includes components that do not necessarily reflect economic impacts on the households of the economy.

- ii) Household Earnings are estimated for each of the eight years of the construction phase and for each year of the operational horizon of the analysis. As with value added, household earnings attributable to construction also varies considerably from year-to-year. Household earnings from construction are estimated to total some \$4.4 billion in nominal dollars. Household earnings attributable to operations ramps up steadily over the ten-year period from 2014 - 2025, totaling some \$4.0 billion in nominal dollars. Household earnings are composed of all forms of employment income and benefits, including proprietor income. This concept is the most important reflection of economic impact on the population of the economy.
- iii) Employment is estimated for each of the eight years of the construction phase and for each year of the operational horizon of the analysis. However, other than the direct employment ramp-up reported for construction and operations by the firm itself, the analysis does not provide a table of explicit estimates of each year's total employment, except for first year of full capacity operations of 2023. A column graph of each year's employment results is provided, though, so rough estimates of total employment can be visually discerned, with each column color-coded to distinguish direct construction and operational employment from indirect/induced employment. Total employment effects on the economy vary considerably during the construction phase, with approximately 1,500 jobs estimated in 2014, then peaking at over 16,000 in 2019 at the height of construction. Construction winds down significantly in 2021 and by 2023 operations are fully ramped up and total economy-wide employment totals in excess of 6,000 with slight annual growth after that as the firm's direct wage bill grows. Employment is defined as the annual average of monthly jobs. A job lasting 12 months is equal to 2 jobs lasting 6 months each or 3 jobs lasting 4 months each etc. A job can be either full-time or part-time, and no distinction is made. This concept of employment is consistent with the standard concepts utilized by the U.S. Department of Labor.
- d) Impacts By Industry: Value added, household earnings, and employment are estimated for 8 broad industry sectors for the 2023 year of full capacity operations. For all three metrics, the large bulk of economic impact (80% - 96%) occurs in 3 sectors; manufacturing, mining, and services. While the analysis does not explain this distribution of impact, large portions of impact obviously occur in the manufacturing and mining sectors within which the firm and many of its suppliers operates. Induced consumption effects will typically be strong in the service sector, and the trade sector, which is fourth largest in impact. Professional and technical inputs to the firm are also likely to be significant in the service sector. Impacts step down significantly across the remaining sectors.
- e) Fiscal Costs: LED reports the following state incentives provided to the firm over the 2014 - 2025 period, (1) Competitive Project Payroll Incentive Program (R.S. 51:3121) payroll subsidies of 15% of eligible payroll totaling \$73.6 million, (2) Quality Jobs Program (R.S. 51:2451) payroll subsidies of 6% of eligible payroll totaling \$25.9 million, (3) Enterprise Zone Program (R.S. 51:1787) sales tax rebates of 4% of eligible purchases totaling \$45.7 million, (4) LED FastStart Program expenses for training development and delivery, and recruitment and selection totaling \$1.1 million, (5) Performance-Based Grants of 20% of project costs relating to the Cracker facility and the GTL facility totaling \$115 million and, (6) a training facility and associated equipment at the SOWELA Technical Community College totaling \$20 million. The Competitive Projects, Quality Jobs, and Enterprise Zone benefits, totaling \$145.2 million, are unappropriated direct payments to the firm from current tax collections remitted by all taxpayers, although the Enterprise Zone payments rebate documented sales tax amounts paid on project construction materials. FastStart Program expenditures are appropriated within the budget of LED. The analysis provided indicates or suggests that the SOWELA training facility be funded with federal Community Development Block Grant funds. The analysis provided also indicates or suggests that the performance-based grant be funded with either state general fund monies, Mega-Fund monies (a general fund equivalent) or capital outlay funds (presumably bond proceeds). LED also indicates that the firm will participate in the Industrial Tax Exemption Program, which abates local property taxes. The firm/project is likely to also be eligible for Enterprise Zone Program (R.S. 51:1787) local sales tax rebates, as well

- f) Incentive Significance: LED provides a single statement regarding the significance of the incentives involved in the project, "These incentives were a significant factor in Sasol electing to move forward with the Cracker and GTL project in Louisiana."
- g) Fiscal Cost/Benefits: The impact analysis provides an estimate of total state tax receipts attributable to the project in each year of the projection period, for both construction and operational phases. State tax receipts attributable to construction vary considerably from year-to-year, but total some \$310.6 million in nominal dollars. State tax receipts attributable to operations ramp up steadily over the ten-year period from 2014 – 2025, totaling some \$286.4 million in nominal dollars. No explanation of how these estimates are generated is provided. They are within a range of 7.0% - 7.5% of the household earnings estimates, and appear somewhat on the high side of actual state experience with regard to total state household earnings-related tax receipts and total labor & proprietor income in the state during the last few years, which has ranged between 6.5% and 7.0%, since 2010.

These state tax receipt estimates are compared to the fiscal cost estimates of the state incentives, excluding the costs of the training facility, to generate annual net state fiscal revenue in excess of state fiscal costs in nine of the twelve years of the relevant projection period. Positive annual results range from \$6.3 million in 2014 to \$81.7 million in 2019. Results in 2014 would be negative if the training facility costs listed for that year had been included. Negative annual results occur in three years, 2021 – 2023, as \$28.75 million installments of the performance-based grant are incorporated. The sum of annual results over the twelve year relevant projection period are \$597 million of state tax receipts and \$261.3 million of state costs, not including the training facility costs, and \$281.3 of costs with the training facility included.

General Evaluation

The absolute levels of economic impacts estimated from input/output models should be taken with considerable caution. These are based on somewhat dated relationships between national industries, although the IMPLAN model does make effort to incorporate more current national and state level information of various economic variables. In addition, input/output analysis is static and linear. New firms are assumed to purchase inputs from in-state industries to the same degree that average purchases in the new firm's industry are exhibited. Economic impacts in the state tend to be overstated for this reason and due to inadequate accounting for substitution effects in consumption patterns.

The economic results of the input/output analysis are essentially mechanical, and are driven by the inputs of direct hiring and wages paid, as reported by the project itself. Those inputs should be examined in any analysis based on them. The hiring and wage information for the construction component of the project are highly variable as different phases of construction progress. This is probably to be expected with regard to such a large multi-faceted complex. Normalizing to average wages each year does not necessarily smooth this variability out. Average construction wages in 2014 are \$68,857; then jump to their high point of \$164,167 in 2015. They fall off over 2016 and 2017 to \$126,514 and \$90,866, respectively, before settling to just over \$108,000 for the last four years of construction, 2018 – 2021. While the analysis does not examine the input data, this variability presumably reflects the different mixes of jobs/skills being employed over the course of the construction project. The direct hiring and wage data input for the operational component of the project analysis is much more stable on an annual average wage basis, starting at \$83,366 in 2014 and rising to nearly \$117,000 by 2025; a 2.89% per year compound annual average nominal wage growth. For the last three years or so, monthly consumer price index inflation has averaged an annual pace of a little below 2%. Should this pace of inflation be sustained into the future, real buying power wage gains of about 1% year are anticipated in current project input data.

The analysis does not account for the state's balanced budget requirement. This omission is a common flaw in impact analysis, and means that the \$281.3 million total fiscal cost of the incentives, that have to be paid for elsewhere in the state budget, are not considered in the analysis. Use of these public resources to support this project results in lower government expenditures elsewhere in the economy. This concept of opportunity cost is applicable to all of the incentive components, but is especially obvious and intuitive with respect to the statutory incentive programs of Competitive Projects, Quality Jobs, and Enterprise Zone since payments associated with these components of the incentive package will be charged against gross state receipts and result in lower net receipts before any other use of these funds can be considered in the appropriations process. This diversion of resources result is effectively a negative spending change that is ignored in the analysis and that has its own multiplier effects that work to dampen the positive

effect of the presence of the project spending in the economy. Thus, total economic and fiscal benefits are overstated and, consequently, the net excess of state revenue over state costs are overstated, as well.

It is notable that over 40% of the total incentive package is composed of a \$115 million grant, payable in four installments of \$28.75 million in years 2020 – 2023. This grant is outside the various programs statutorily created as economic development incentives, and represents an apparent open-ended exposure of the state fisc. The state will have to fund these installments from within the budget resources available at the time they are due; in this case, an obligation beginning some five years in the future, beyond even the term of the ensuing administration and legislature.

The LED analysis included a calculation of projected annual cumulative state tax revenue in excess of costs. This component of the analysis should be disregarded. It seems to imply that there are no years within the projection horizon that result in net negative fiscal results, when there are; albeit, as far out as 2021 – 2023. More practically, though, regardless of whether annual fiscal results are positive or negative, there will be no accumulation of results available to support or impair the state fisc in subsequent years.