



Regional Economic Impacts of Nueces Green Ammonia

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Executive Summary

This report presents projections for the regional economic impacts of a proposed ammonia production and export facility located in Nueces County of the Corpus Christi metro area. The facility, Nueces Green Ammonia, will be constructed by Avina Clean Hydrogen Inc.

Construction for Nueces Green Ammonia involves an estimated \$2.2 billion in capital expenditures and more than 500 construction workers during the project development phase beginning 2025. Once construction is complete, this industrial facility is expected to be operated with 75 – 100 full-time-equivalent employees onsite.

Construction Phase

Including indirect impacts that capture increased economic activity in regional supply chains, the facility's construction phase is estimated to generate 3,465 job-years (direct and indirect employment) in the Corpus Christi metro area, with 3,041 job-years in Nueces County.

The following table displays alternative measures of the total economic impacts (direct, indirect, and induced impacts) in the region during the industrial facility's construction phase:

Economic Impacts from Construction (2024 dollars)

	<u>Corpus Christi MSA</u>	<u>Nueces County</u>
Employment	3,465 job-years	3,041 job-years
Output/Sales	\$704.8 million	\$611.5 million
Personal Income	\$279.3 million	\$220.5 million

Annual Maintenance and Operations

Including indirect impacts, the maintenance and operations of Nueces Green Ammonia are estimated to generate 103 permanent jobs (direct and indirect employment) in the metro area, 87 jobs of which are from Nueces County.

The following table on the next page displays estimates of *total* permanent (annual) economic impacts on the metro area as a result of the regular maintenance and operations of the facility:

Annual Economic Impacts from Maintenance & Operations (2024 dollars)

	<u>Corpus Christi MSA</u>	<u>Nueces County</u>
Employment	177 jobs	136 jobs
Output/Sales	\$51.1 million	\$39.0 million
Personal Income	\$21.9 million	\$15.6 million

Local Tax Revenues

The estimated regional business sales and personal income, including wage earnings, associated with the Nueces Green Ammonia construction project is estimated to generate a total of \$6 million in local tax revenues for taxing entities in the metro area, \$4.3 million of which are for taxing entities in Nueces County.

Upon completion, the industrial facility’s expenditures on maintenance and operations are projected to generate a *cumulative* total of \$16.7 million in local tax revenues for taxing entities in the metro area and \$11.9 million in Nueces County over the first 20-year period.

Local Tax Revenues (2024 dollars)

	<u>Construction</u>	<u>Maintenance & Operations</u>	
		<u>Annual</u>	<u>20 Years</u>
Corpus Christi MSA	\$6.0 million	\$0.84 million	\$16.7 million
Nueces County	\$4.3 million	\$0.59 million	\$11.9 million

Introduction

Avina Clean Hydrogen Inc. has proposed to develop an anhydrous ammonia production and export facility, Nueces Green Ammonia, near the city of Robstown and the community of Calallen in Nueces County, Texas. Avina is filing permit applications for a total production capacity of 800,000 metric tons (MMT) of ammonia per year. Production is expected to begin in phases starting in 2027 with a target date for full-capacity production in 2028. The ammonia production facility is expected to be developed with a capital investment of \$2.2 billion (2024 dollars).

Liquid ammonia will be produced from renewable hydrogen and nitrogen gases. Today, in addition to a wide variety of pharmaceutical and household products, ammonia is commonly used as fertilizer that supports food production worldwide. Nueces Green Ammonia is set to become the largest zero-emission ammonia production facility in North America.

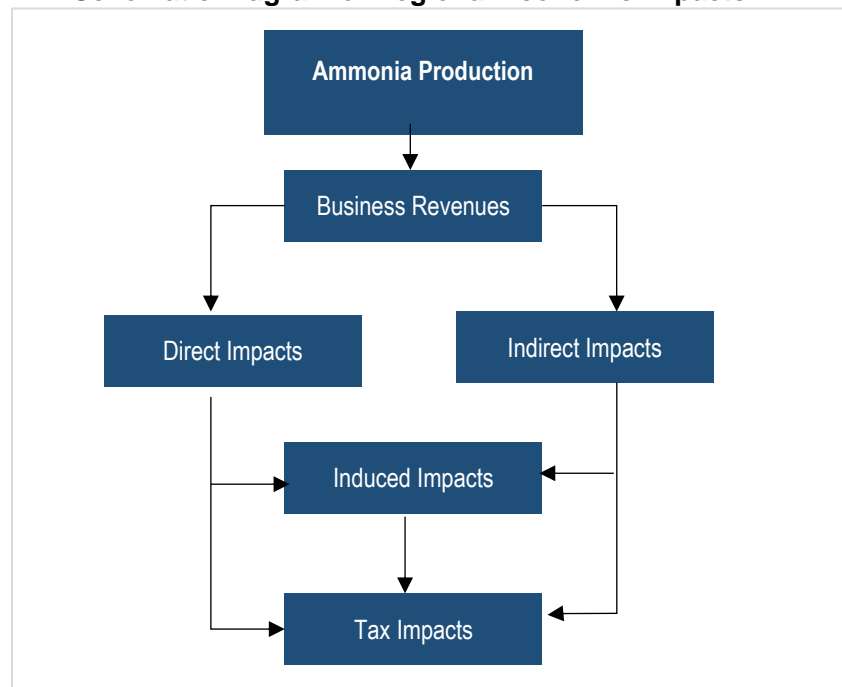
This report presents the key findings of a regional economic impact study for the proposed Nueces Green Ammonia project. The study was commissioned by Avina and conducted by Jim Lee, Ph.D. Dr. Lee is Regents Professor of Economics and Director of South Texas Economic Development Center at Texas A&M University-Corpus Christi. He has more than 20 years of experience in economic research and consulting services for businesses across South Texas with the completion of more than 70 economic impact reports for a variety of entities in the Coastal Bend region.

The findings in this report include estimates for the economic impact of the proposed industrial project development on Nueces County and the broader Corpus Christi metropolitan statistical area (MSA). Regional economic impacts are measured by full-time-equivalent (FTE) jobs, personal income including wage earnings and other household incomes, and gross business sale revenues (economic output) created across the Corpus Christi metro area during the project's construction phase and the facility's permanent operation. The report also presents local tax revenue projections generated by the estimated changes in business activity and household income associated with the facility's construction and operation.

Methodology

- Total regional economic impact estimates for the construction phase of the Nueces Green Ammonia facility are computed using the projected capital expenditures involved. The facility's currently projected capital expenditures at \$2.2 billion would first generate a one-time, *transitory* economic impact beginning with the direct impact on the industries of construction and engineering services. Construction is expected to take place between 2025 and 2028 with more than 500 construction workers each year on average, or the equivalent of 2,000 job-years. One job-year is a full-time-equivalent job that lasts for one year. The first phase of the plant is expected to be operational in 2027 and production in full capacity is expected to begin in 2028.
- In addition to the transitory economic impacts during the construction phase, the operation of the ammonia production facility would generate *permanent* economic impacts on the regional economy of the Corpus Christi metro area and its local communities. The Corpus Christi metro area consists of Nueces and San Patricio Counties. This report also presents estimates specifically for Nueces County, where the new facility is located. The Nueces Green Ammonia facility is expected to be in service by 2028.
- The following diagram describes the flow of permanent economic impacts associated with the operation of the Nueces Green Ammonia facility:

Schematic Diagram of Regional Economic Impacts



- The total economic impacts of Nueces Green Ammonia include direct, indirect, and induced impacts. The quantitative measures of total economic output/sales, employment, personal income (e.g., wage earnings), and local tax revenues are computed using the IMPLAN models configured for the Corpus Christi metro area and Nueces County, respectively. IMPLAN is an industry-wide accepted Input-Output modeling software tool for calculating the regional economic impacts of major industrial projects such as Nueces Green Ammonia. When estimating the impacts of a project or an industrial site, IMPLAN considers the interconnection between industries within the study region, namely the Corpus Christi metro area or Nueces County in this case, the supply and demand patterns of goods and services, as well as the interplay between industries and households.
- In addition to the **direct** employment related to the construction and operation of the facility, **indirect** impacts occur when local business vendors benefit from the construction activities and operation of the industrial site, such as power and water supplies in its production process, as well as industrial engineers (professional services) and office management staff (administrative and waste management). These impacts are “spinoff” effects reflecting additional economic activities and sales of local business vendors in multiple rounds of supply chains that support the industrial site’s construction and operation.
- **Induced** impacts are generated initially by the spending of the industrial site’s employees on local goods and services. Following multiple rounds of spinoff effects, these impacts are spread across nearly all sectors of the regional economies in the Corpus Christi metro area and Nueces County. Estimates for indirect and induced impacts are generated using IMPLAN’s multiplier data for the study region.
- Local tax impacts are estimated tax liabilities (e.g., general sales, property and excise taxes that are chargeable to business expenses) to local taxing entities, including independent school districts, by local firms and individuals whose revenues and jobs are directly or indirectly associated with the new facility. In addition to the Corpus Christi metro area, this report provides tax impact estimates for taxing entities in Nueces County by applying the IMPLAN model specifically to the county.

Economic Impacts of Construction

- The total amount of capital expenditures for the proposed Nueces Green Ammonia production facility in the Corpus Christi metro area is projected to be \$2.2 billion. The construction phase is expected to begin in 2025 with an average of more than 500 construction workers for four years, or the equivalent of 2,000 job-years (500 jobs for each of four years). In addition to those construction workers directly hired by the project developer, 459 employees from other local vendors are projected to work directly for the construction project.
- The following table displays alternative estimates of the regional economic impacts (direct, indirect, and induced impacts) on the Corpus Christi metro area during the construction phase:

Construction Impacts: Corpus Christi MSA

	<u>Direct</u>	<u>Indirect</u>	<u>Direct & Indirect</u>	<u>Induced</u>	<u>Total</u>
Employment (job-years)	2,459	169	2,628	837	3,465
Output/Sales (mil)	\$580.2	\$23.6	\$603.8	\$101.1	\$704.8
Personal Income (mil)	\$229.7	\$8.6	\$238.3	\$40.9	\$279.3

- Based on the projection of construction workforce requirements, the project's construction phase is expected to generate a **direct** regional economic impact of \$580.2 million, 2,459 local full-time-equivalent (FTE) job-years in construction and engineering, and \$229.7 million in personal income earnings across the Corpus Christi metro area.
- Including indirect impacts on local supply chains associated with the construction of the industrial site, the regional economic impact is \$603.8 million and 2,628 job-years. The **total economic impacts** that also include induced effects on the rest of the regional economy are estimated to be **\$704.8 million, 3,465 job-years, and \$279.3 in personal income, including wage earnings**. For the construction phase to last for four years, the annual employment impact will be an average of **866 jobs each year**.

The projected impact on local businesses, employment, and household income supports an estimated total of **\$6 million in local tax revenues** across the Corpus Christi metro area.

Construction Impacts: Nueces County

	<u>Direct</u>	<u>Indirect</u>	<u>Direct & Indirect</u>	<u>Induced</u>	<u>Total</u>
Employment (job-years)	2,262	91	2,353	688	3,041
Output/Sales (mil)	\$506.1	\$14.8	\$520.8	\$90.6	\$611.5
Personal Income (mil)	\$182.6	\$4.6	\$187.2	\$33.3	\$220.5

- The industrial site is located in Nueces County, but its neighboring San Patricio County will also be exposed to some economic benefits from the construction project. It is expected that slightly more than 88% of the direct construction jobs in the Corpus Christi metro area will be filled by the workforce in Nueces County. This translates into 2,262 direct job-years for Nueces County.
- Including indirect and induced impacts, Nueces Green Ammonia's construction project is expected to create a total of **3,041 job-years (or an average of 760 jobs for each of four years), \$611.5 million in business sales, and \$220.5 million in personal income within Nueces County.** Additional economic activity and household income associated with the construction project is expected to generate **\$4.3 million to all local taxing entities** in Nueces County.

Permanent Economic Impacts of Maintenance & Operations

- Once construction is complete, the Nueces Green Ammonia facility is expected to be operated with a permanent staff of 75 – 100 FTE positions onsite. The annual budget for maintenance and operations (M&O) includes utility expenses, repair, and payrolls. Excluding benefits, the average annual salary of employees is expected to be \$80,468 (2024 dollars).
- The following table presents estimates for the direct, indirect, and induced impacts of the maintenance and operations of the facility, drawing from the currently estimated staffing data onsite, e.g., the conservative estimate of 75 employees, and the annual M&O budget for production in full-capacity beginning in 2028 for the first 20-year lifespan of the facility. The figures represent permanent impacts that will repeat each year.

Annual Economic Impacts of Operations: Corpus Christi MSA (2024 dollars)

	<u>Direct</u>	<u>Indirect</u>	<u>Direct & Indirect</u>	<u>Induced</u>	<u>Total</u>
Employment (FTEs)	94	9	103	74	177
Output/Sales (mil)	\$40.4	\$1.6	\$42.0	\$9.1	\$51.1
Personal Income (mil)	\$17.8	\$0.5	\$18.2	\$3.7	\$21.9

- The Nueces Green Ammonia facility is expected to be operated with at least 75 full-time, permanent employees. Including an estimate of 19 jobs hired by contractors and other business vendors onsite, such as ground crews, the facility's operation is expected to generate 94 permanent direct jobs. Measured in current dollar terms, the **direct** impact of the facility's operation equals approximately \$40.4 million in annual business sales and \$17.8 million in annual personal or household income within the Corpus Christi metro area.
- Including indirect impacts that capture activities in local supply chains, the facility's operation generates an estimated \$42 million in annual business revenues, 103 jobs, and \$18.2 million in annual personal income.
- The permanent regional economic impact of the Nueces Green Ammonia facility's maintenance and operations, including indirect and induced effects, is an estimated **\$51.1 million per year**. This total economic impact estimate in annual business revenues in different economic sectors in the

Corpus Christi metro area supports **177 job positions** and **\$21.9 million in annual personal income**.

- The impact on local businesses, employees and household income, in turn, generates an estimated total of **\$837,389 in local tax revenues each year** within the metro area. For a period of 20 years, local tax collections are projected to total **\$16.7 million** (2024 dollars).

Annual Economic Impacts of Operations: Nueces County (2024 dollars)

	<u>Direct</u>	<u>Indirect</u>	<u>Direct & Indirect</u>	<u>Induced</u>	<u>Total</u>
Employment (FTEs)	79	7	87	50	136
Output/Sales (mil)	\$31.6	\$1.3	\$32.9	\$6.1	\$39.0
Personal Income (mil)	\$12.3	\$0.4	\$12.6	\$2.9	\$15.6

- For Nueces County, the direct economic impact of Nueces Green Ammonia’s maintenance and operations is 79 jobs, \$31.6 million in business sales, and \$12.3 million in personal income each year. Including indirect and induced impacts, the facility is projected to generate an additional **136 jobs, \$39 million in business sales, and \$15.6 million in personal income within Nueces County**.
- The taxing entities in Nueces County is projected to gain **\$595,538 in local tax revenues each year**. For a period of 20 years, local tax collections are projected to total **\$11.9 million** (2024 dollars).

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