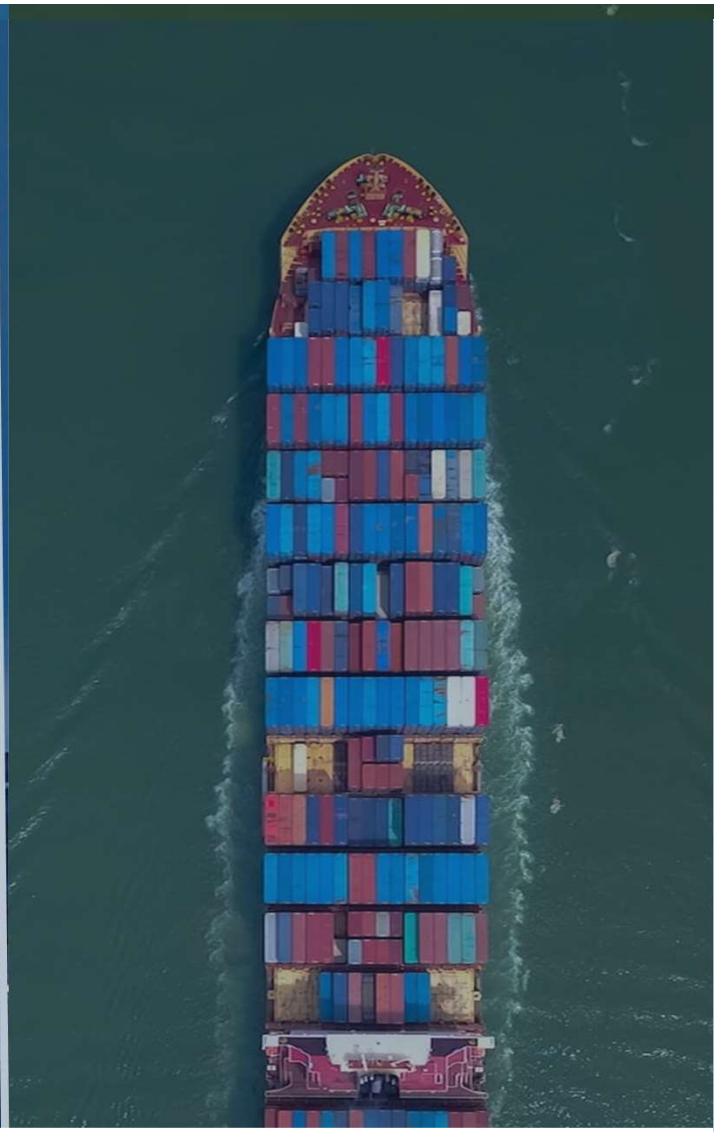




St. Charles Clean Fuels – Blue Ammonia Project

Low carbon blue ammonia production from 2027 in Louisiana

CIP
Copenhagen Infrastructure Partners

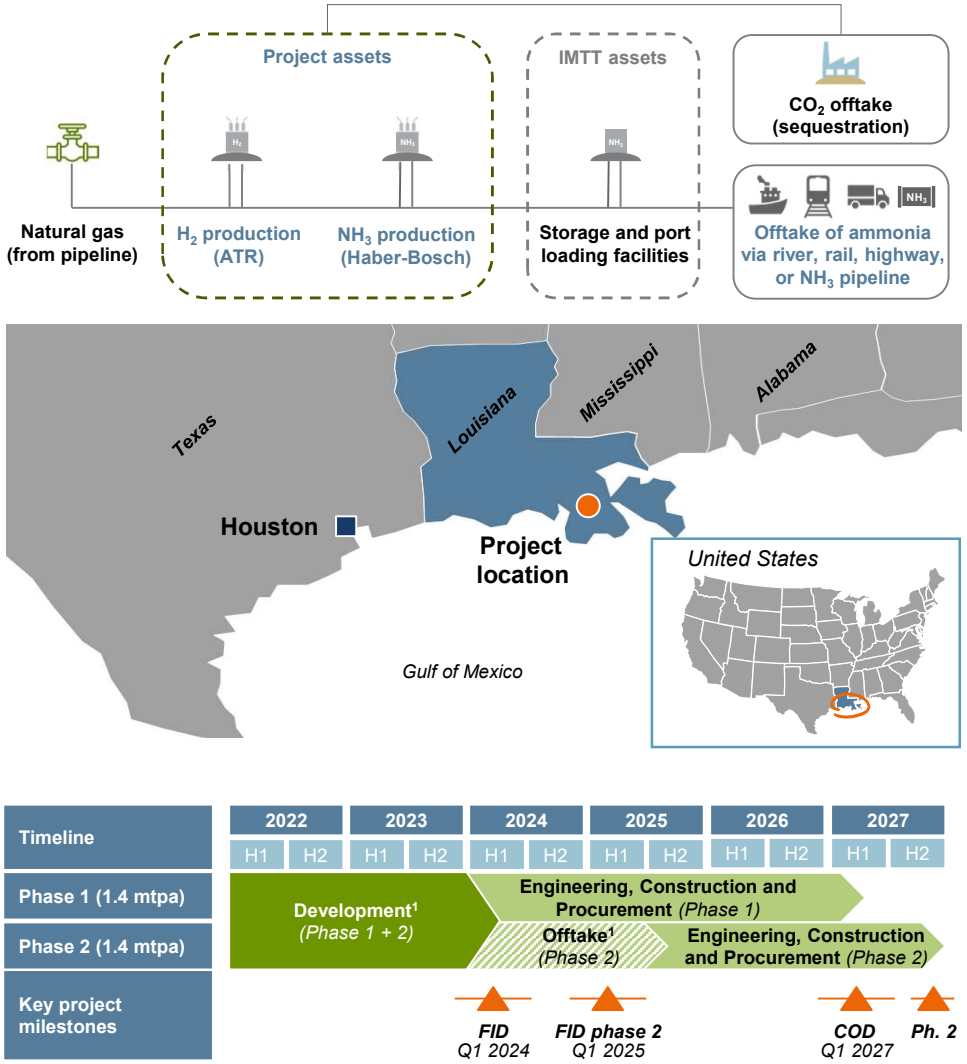
Sustainable Fuels Group



Introduction to the St. Charles blue ammonia project

Large-scale blue ammonia project in Louisiana, with annual output of 2 x 1.4 million tons per year ammonia (NH_3)

Overview of infrastructure assets and project location



Key project facts

Project overview
- Large-scale blue ammonia project of 2 x 1.4 mtpa trains located on the lower eastern side of the Mississippi River, Louisiana
  – Access to low cost, responsibly sourced natural gas
- High quality CO_2 offtaker with proven experience and track record offtaking the CO_2 for sequestration

Site conditions
- 230 acres site secured with access to key infrastructure:
  – Liquid docks on Mississippi River allowing for vessel transport
  – Railway and gas supply options in proximity of site
  – Ammonia pipeline (across the river ~10 miles from site)
  – Access to 230 kV power transmission line

Permitting
- Permitting is initiated with experienced local consultants:
  – Wetland mitigation permit (federal) and air permit (state)

Technology
- Ammonia production from natural gas with Topsoe SynCOR™ ATR with carbon capture guarantee of 99% of direct CO_2
  – 30+ years of operational track record of individual process steps

Offtake
- The project expects to enter into a long-term offtake agreement, with a target to contract 80% of the total ammonia volume on long term contracts with creditworthy counterparties
- Project also considers sale of blue hydrogen locally to diversify revenue streams and further de-risking project
- Advanced dialogue state with offtakers in Asia, Europe and the US

Carbon Capture & Sequestration
- 99% capture of direct CO_2 from process facility, and >90% reduction in CO_2e emissions (scope 1 & 2) compared to grey ammonia
- Near completion of definitive agreement with highly experienced CO_2 counterpart on geological onshore sequestration of full volume in vicinity of project site (class VI permit is in process, FID expected Q2 2023, and CCS hub expected to be operational in 2025)

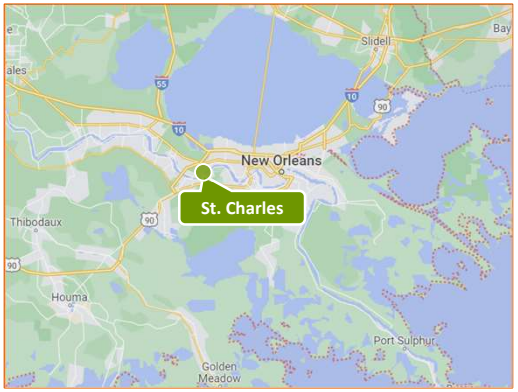
Notes: 1) If sufficient offtake volume is secured in the development phase for phase 1 + 2, the construction of phase 2 will begin after the development phase in H1 2024;

Introduction to the St. Charles project site

Unique site of 230 acres benefitting from existing infrastructure including export dock and terminal facilities

Overview of IMTT site including project site and infrastructure

- Heavy haul access road (existing)
- Gas pipeline (Gulf South) (existing)
- Ammonia pipeline to be built on existing pipe racks
- 230 kV power transmission line (existing)
- IMTT site
- Railway track (existing)
- New CO_2 pipeline



1 St. Charles Project Site

- 230-acre (~95 ha) site leased from site owner, IMTT
- Wetland site under permitting for industrial development. Piling required as typical for US Gulf Coast area
- Site elevation, drainage and levees mitigate flooding risk
- No endangered animal species
- Re-zoning completed in Q1-2023 (heavy industrial)

2 St. Rose tank terminal IMTT

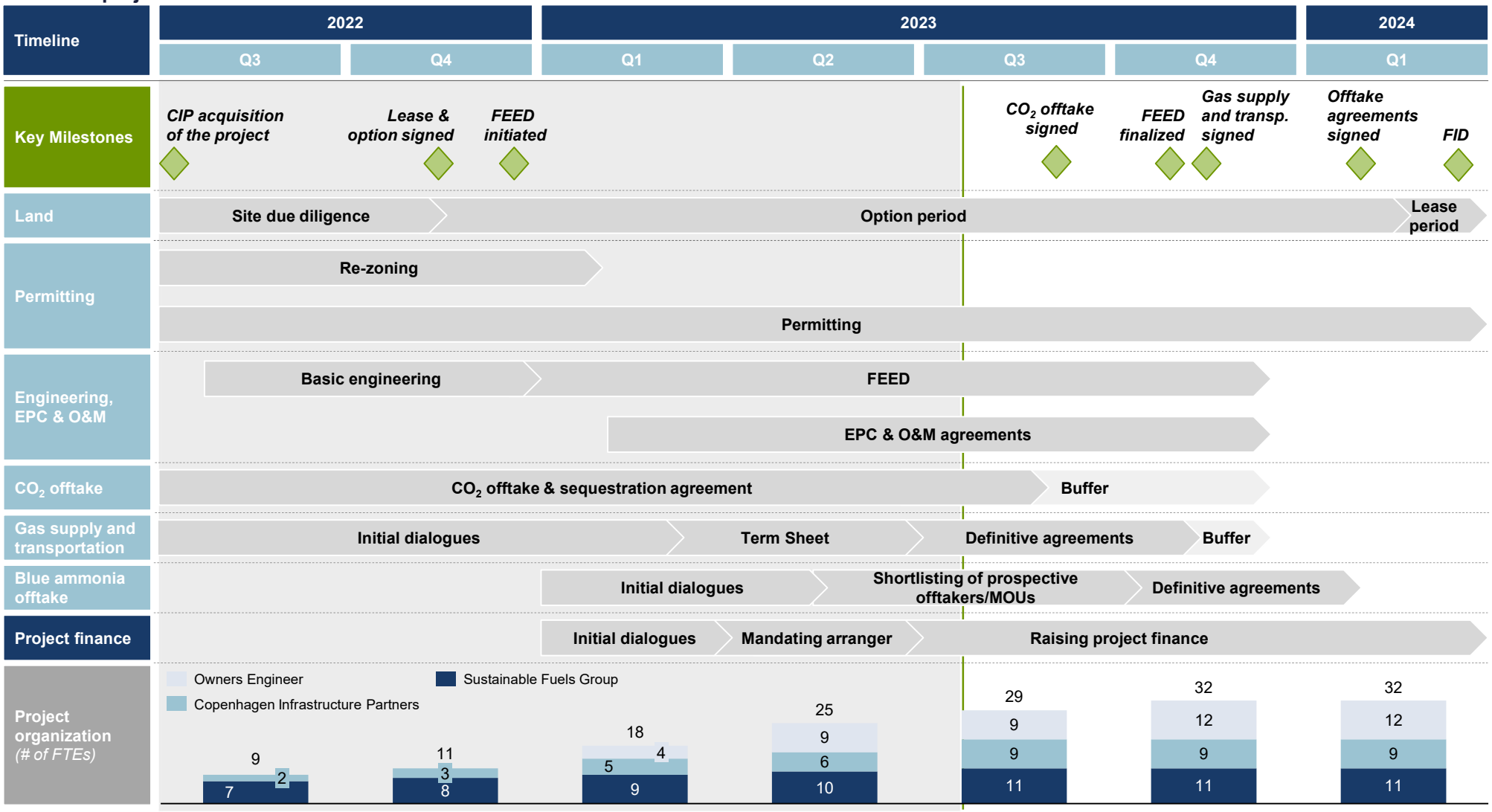
- IMTT's St. Rose tank terminal have been in operation since the 1930's, handling various petrochemical and crude products, and host key infrastructure which facilitate construction and operations
  - Existing 230 kV transmission line
  - Highway and railway adjacent to site
  - High-pressure gas pipeline running adjacent to site and two other gas pipelines are in proximity to site
  - CO_2 transport either from conversion of existing EnLink low-pressure pipeline or a new dedicated pipeline to be constructed
  - Lay-down land and harbor access to facilitate construction

- Site includes unique existing ammonia export routes via i) existing docks, ii) existing rail connection, and iii) proximity to NuStar ammonia pipeline

Envisaged development timeline

Development plan to bring project to feasibility and financing decision in Q1 2024

Indicative project timeline



Introduction to Copenhagen Infrastructure Partners ("CIP")

History and overview of CIP

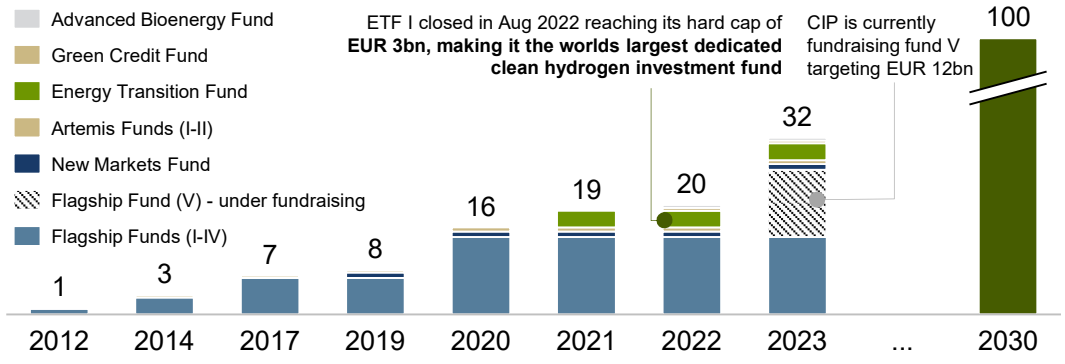
Pioneering infrastructure fund manager

- Pioneering and market leading **infrastructure fund manager** with **EUR ~20bn in investor commitments** across 10 funds & 135 investors, as of 2022, currently fundraising fund V with target of EUR 12bn and **commitment to raise EUR 100bn by 2030**
- Established in 2012 by **key people from the offshore wind industry**, with one fund and one investor (Pension Denmark)
- Corporate offices in Copenhagen, New York, Tokyo, Utrecht, London, Hamburg, Melbourne and Singapore, with around 400 employees and 15 project offices with several thousand employees

Global greenfield investor in the energy transition

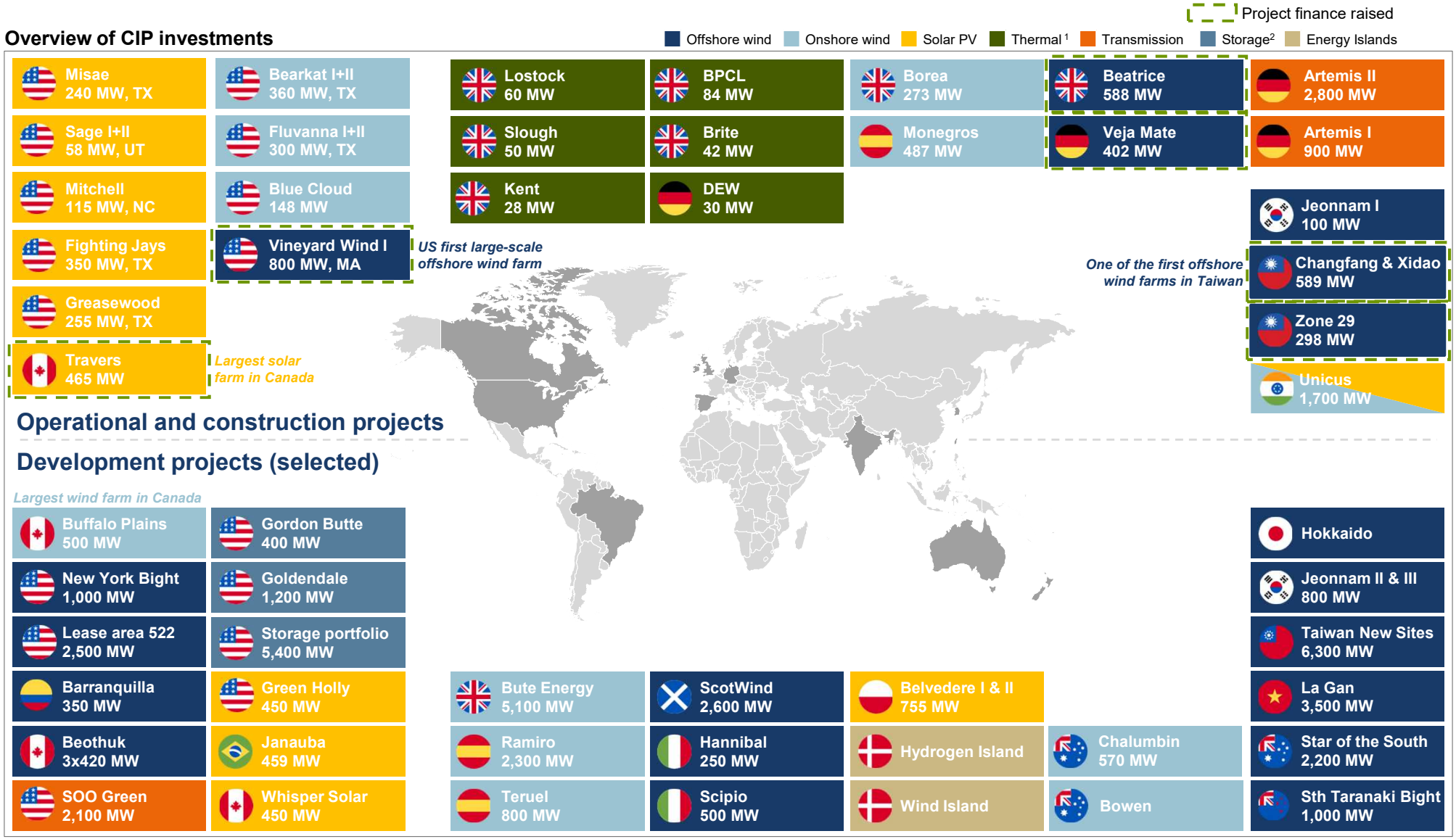
- Global investment focus in **large scale energy infrastructure** with key focus on the **energy transition (renewable power, storage, transmission, power-to-x, biofuels)**
- **CIP is a greenfield developer and investor,** and typically enters projects at a very early stage and generates value by owning and managing the development, construction and operational process with the associated risks
- Ability and willingness to commit **significant development and construction capital in projects** and do not necessarily depend on external debt financing

History of CIP funds



Overview of CIP investments

Greenfield development pipeline of +100 GW and ~11 GW projects in construction and operations



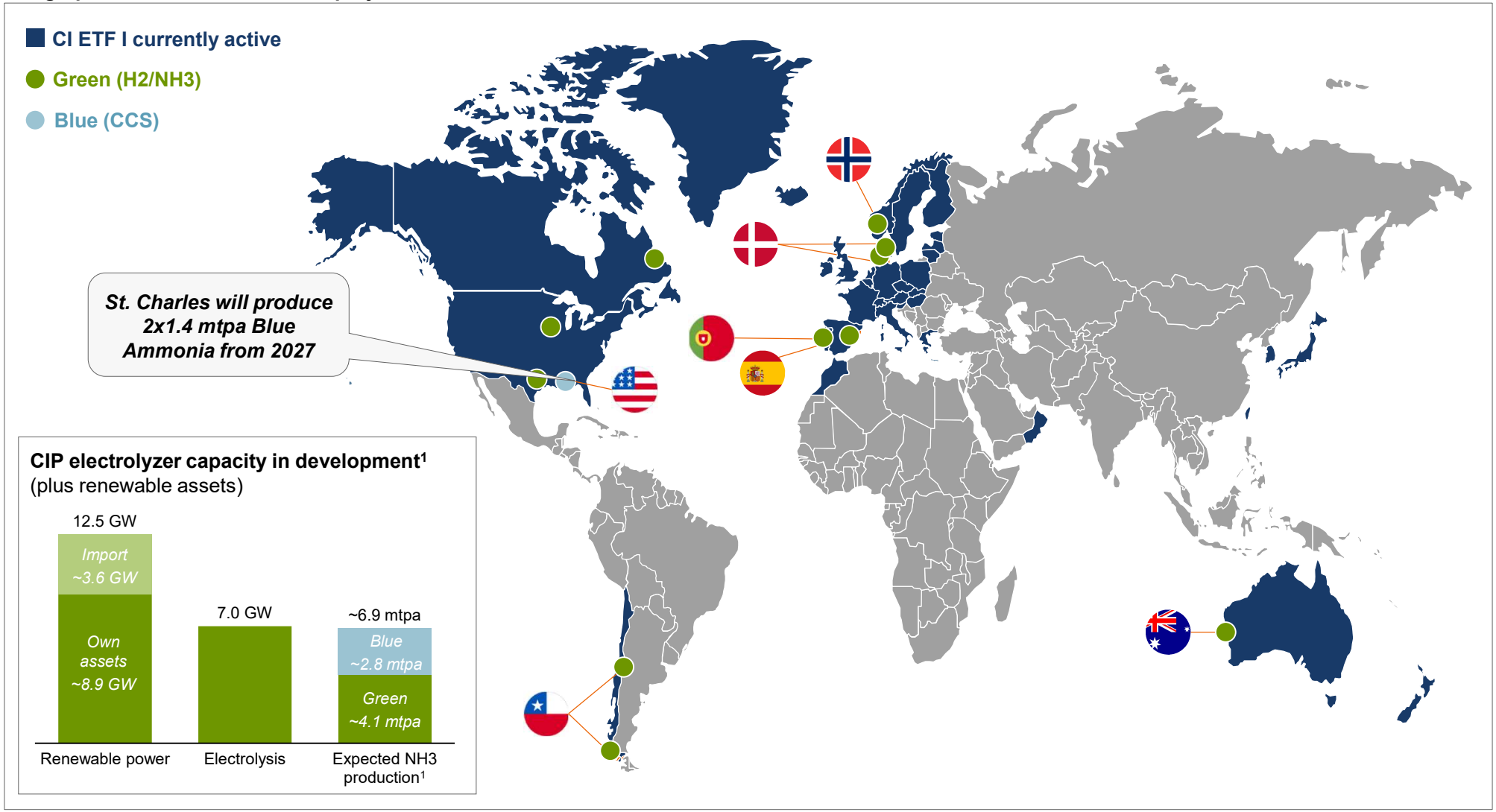
Notes: 1) Thermal includes biomass, waste-to-energy and geothermal; 2) Storage includes pumped hydro and battery storage

Source: CIP

CI ETF is developing large scale clean ammonia and hydrogen projects in optimal locations around the world

7 GW electrolysis and 12 GW renewable power currently under development globally for green hydrogen/ammonia/SAF production

Geographical overview of CI ETF I projects



Introduction to Sustainable Fuels Group (Developer of St. Charles)

- Sustainable Fuels Group ("SFG") is the developer of the Project and drives the day-to-day management, actively supported by CIP appointed team members and seconded project specialists
- Sustainable Fuels Group is a Delaware LLC formed by highly experienced energy professionals to develop, install, construct, and operate a portfolio of sustainable fuels projects

Key Personnel

Ramesh Raman – *CEO*
- 30+ years of experience in development from the Energy sector
- Previously: Taylor-DeJongh, a boutique merchant bank which arranged USD 250bn of debt and equity financings

John G. Baguley – *Sr. Construction and Project Manager*
- 40 years of experience in executive mgmt. from the Energy sector
- Has been involved in leading the execution of greenfield construction projects totalling in excess of USD 50bn

Matthew D. Conlan – *VP of Finance and Commercial Contracts*
- 25 years of experience in corporate finance and energy market expertise from major NY Investment Banks or hedge funds
- Leader in development of low-carbon hydrogen-based fuels

Neela Ramanan – *VP of Process and Technology Engineering*
- 20+ years of experience in Process engineering, safety, and manufacturing/operations management
- Leading Process Engineer on USD 1.8bn Gulf Coast Methanol Park

David Redeker – *VP of Strategic Partner Relations*
- 34 years of experience at BP/Amoco including business development, commercial contract negotiations, strategic planning, natural gas marketing, Gas-to-Liquids Technology, and field operations.
- 7 years developing chemical projects on U.S. Gulf Coast

Sankar Teelucksingh – *Commissioning and Operations Manager*
- 30 years of experience in operations, commissioning, and start-up of ammonia and methanol facilities
- Led operations and start-up of U.S. plants valued at USD 2 billion

Project Benefits: Job Creation

Job Creation:

Construction

- Should the construction of the two blue ammonia trains be separate by 6-12 months, SCCF envisions a peak construction workforce of approximately 2,000 people during the peak construction overlap period.

- Over the 3-year 2024-2027 construction period, Train 1 is expected to have an average construction workforce of 840 people. With an expected wage of $80,000, this would result in an average annual payroll of $67,200,000, or **$201,600,000** over the three-year period.

- Over the 3-year construction period, Train 2 is expected to have an average construction workforce of 560 people. With an expected average wage of $80,000, this will result in an average annual payroll of $44,800,000, or **$134,400,000** over the three-year period.

- Note that the workforce and capital spend for Train 2 is lower than Train 1, since the Train 1 construction includes the building of infrastructure and common facilities that will ultimately be shared between the two Trains.

Project Benefits: Job Creation

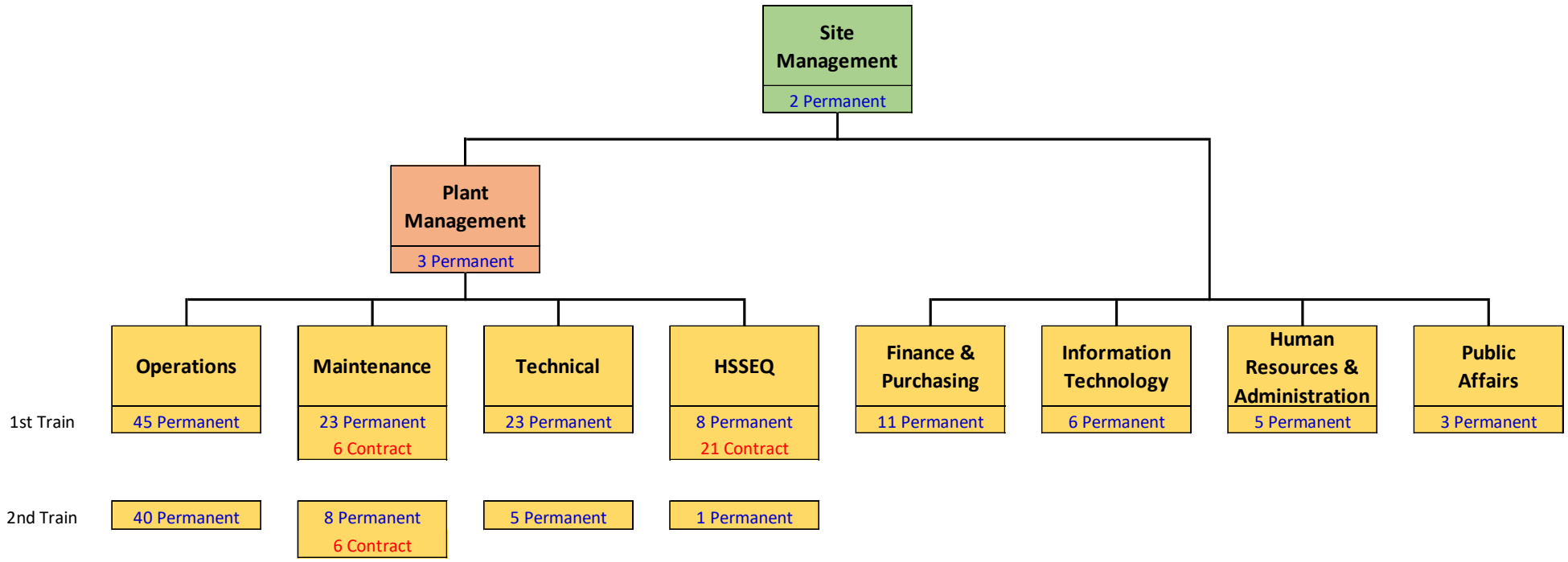
Job Creation:

Operations

- Over a planned 20 to 30-year generational horizon, the SCCF facilities are to provide quality, long-lived, high paying jobs.
- Train 1 is projected to require 156 employees (129 staff and 27 contractors) with an average annual salary in the $90,000 range, with annual payroll of approximately **$14,040,000**.
- Train 2 will require less incremental staff, since Train 1 will hire the majority of the shared administrative, finance health, safety, and security positions. Train 2 is projected to require an additional 60 employees (54 staff and 6 contractors) with an average annual salary in the $90,000 range, with annal payroll of approximately **$5,440,000**.

Project Benefits: Job Creation

Planned Organizational Structure



Project Benefits: Job Creation

Job Creation:

Local Hiring

- SCCF has already started working with IMTT and with members of the local community to ensure the creation of a program of job readiness first for individuals within the Parish. This work will be undertaken alongside the River Parishes Community College, the Associated Builders and Contractors St. Rose Training Center, the United Way of St. Charles, the School Board, and the Ed Reed Foundation.

- In addition, SCCF intends to work with the Economic Development Department in order to meet local performance goals such as:
  - Hosting job and vendor fairs at the EADCC for each Train for itself and for its embedded contractors.
  - Sending all employment openings to SCPED, including contractor positions.
  - Advertising all employment openings in the St. Charles Herald Guide, Complying with an existing Parish Ordinance and annually reporting total employment and Parish resident employment.
  - Annual reporting of local procurement and philanthropic activities.

Project Benefits: Purchases and Services

Major Consumption Inputs

- Estimated annual purchases of:
  - – Natural Gas +$200 million per Train (low methane leakage, responsibly sourced natural gas from NW Louisiana).
  - – Power (Entergy) +$60 million per Train.

Operational Purchases and Services

- General plant maintenance supplies and repair services.
- Ammonia storage and loading terminal services by IMTT (additional labor, maintenance supplies and repair services, methanol anti-freeze agent).
- Air Separation Units to extract nitrogen and oxygen from the air (will require maintenance supplies and repair services, corrosion inhibitors, dispersants, biocides.
- Amounts that would be subject to Louisiana / St. Charles Parish sales / use tax still being determined.

Project Benefits: Purchases and Services

Local Purchases and Services

- There will be numerous local service providers required to support the facility, and SCCF will, where feasible, prioritize the use of the local supply chain.
- During construction, SCCF will work with its selected Contractor and their subcontractors to seek out local supply chain opportunities, including potentially splitting purchase orders to stay within the local supplier capacity.
- Longer term, the SCCF plant operations and maintenance philosophy will be to maximize the use of qualified local suppliers and services providers in support of its continued facility needs.

Industrial Tax Exemption Program (ITEP) Applications

ITEP Application Process

- SCCF has submitted two separate ITEP applications to Louisiana Economic Development for its two planned blue ammonia production facilities.
- The ITEP applications have been deemed "review complete" and are planned to be on the agenda for the August 23 Board of commerce and Industry meeting.
- SCCF is seeking local pre-approval of its ITEP applications in advance of the State approvals.

Property and Sales Tax Projections

- Over the ten-year ITEP horizon, property taxes on manufacturing equipment for the 2 Train operation that would be paid to the local Parish taxing authorities, are projected to aggregate just under **$100 million (approximately $10.5 million in year 1 of operations, down to approximately $7 million in year 10).**
- In addition to the ITEP capital that is deemed integral to the manufacturing process, SCCF will also have supplemental capital for administrative and security buildings, critical spare part and general maintenance inventories, plus other general site infrastructure. Current estimates are that this could add an additional **$0.8 million per year** in property taxes.
- Sales tax to the Parish during the construction period is estimated to be roughly **$60 million**. During regular operations, an additional **$1.5 million** in sales tax on non-exempt materials and supplies is also projected.