March 8, 2023

CAM 2023

Transition Energy & Alternative Fuels

Edward “Eddie” Martinez | Trade Development Manager

Presented by PORT CORPUS CHRISTI®


CELEBRATING
100
YEARS

The Energy Port of the Americas

By the Numbers

#1
U.S. Crude Oil Export Gateway

#1
U.S. Port by Annual Revenue Tonnage

#2
U.S. Port in LNG Exports
Estimated 808 Bcf in 2022

7,753
Vessels moved in 2022

30,000+
Acres of land managed

98,000
Port-related Jobs in the Coastal Bend
Accounts for more than 38% of the area's labor force

Economic Impact

$400M
Per day goods value movement

$65B
In private investment

$6B
For Corpus Christi

$40B
For Texas

$400B
For U.S.

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$65 Billion Capital Investments

($12 Billion Foreign Direct Investments)

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Corpus Christi Ship Channel Improvement Project Schedule

Contract 4 Chemical TB to Viola TB

- Anticipated Award – Q2 2023
- Anticipated Completion – 1st Quarter 2024

Contract 1 – Gulf of Mexico to Harbor Island

- Awarded December 2018
- Completed February 2020

Contract 3 West of LQ Junction to Chemical TB

- Awarded – September 10, 2021
- Anticipated Completion – August 2023

Contract 2 - Harbor Island to West of LQ Junction

- Awarded April 2020
- Anticipated Completion mid 2023

DREDGING & MARINE CONSTRUCTION

Corpus Christi Ship Channel Project Receives Final-Phase Funding

JANUARY 6, 2023 • BY FRANK MCCORMACK

For Corpus Christi, Texas, the recently passed $1.7 trillion consolidated appropriations bill contained a crucial section that set aside $157.3 million to close out the final phase of the Corpus Christi Ship Channel Improvement Project. The project deepens the 36-mile-long channel to 54 feet and widens it to 530 feet. In addition, the Channel Improvement Project will create an additional 400 feet of barge shelves, which will allow simultaneous two-way traffic for both ships and barge tows.

The $157.3 million in federal funding is the largest single-year allocation for the Channel Improvement Project, according to the Port of Corpus Christi.

Improving Efficiency in Energy Commodity Movements

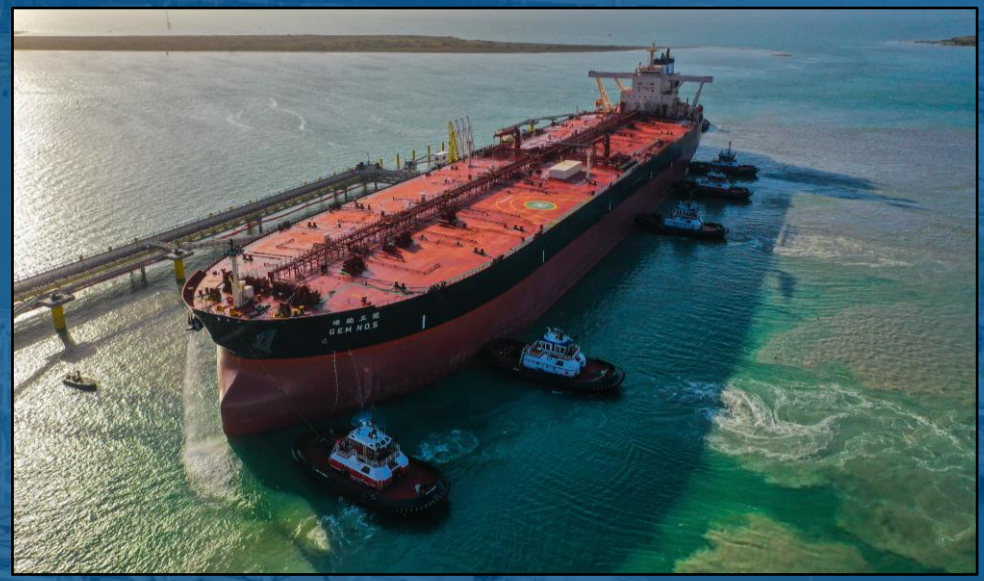
Suezmax

Current Loading Capacity

850,000 barrels

Loading Capacity after CIP Completion

1 million barrels (max capacity)



Very Large Crude Carrier (VLCC)

Current Loading Capacity

1.2 million barrels

Loading Capacity after CIP Completion

1.5 million barrels

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Prolific Energy Gateway

Energy Supply
Traditional plus renewable including 8 GW wind within 50 miles

Land Development
1,000s of consolidated acres available for Hydrogen value-chain projects

Deep Draft Port
Deepest (-54 MLLW) draft and most improved ship channel on the Gulf Coast

Skilled Workforce
Over 100K skilled workers currently employed in the energy sector

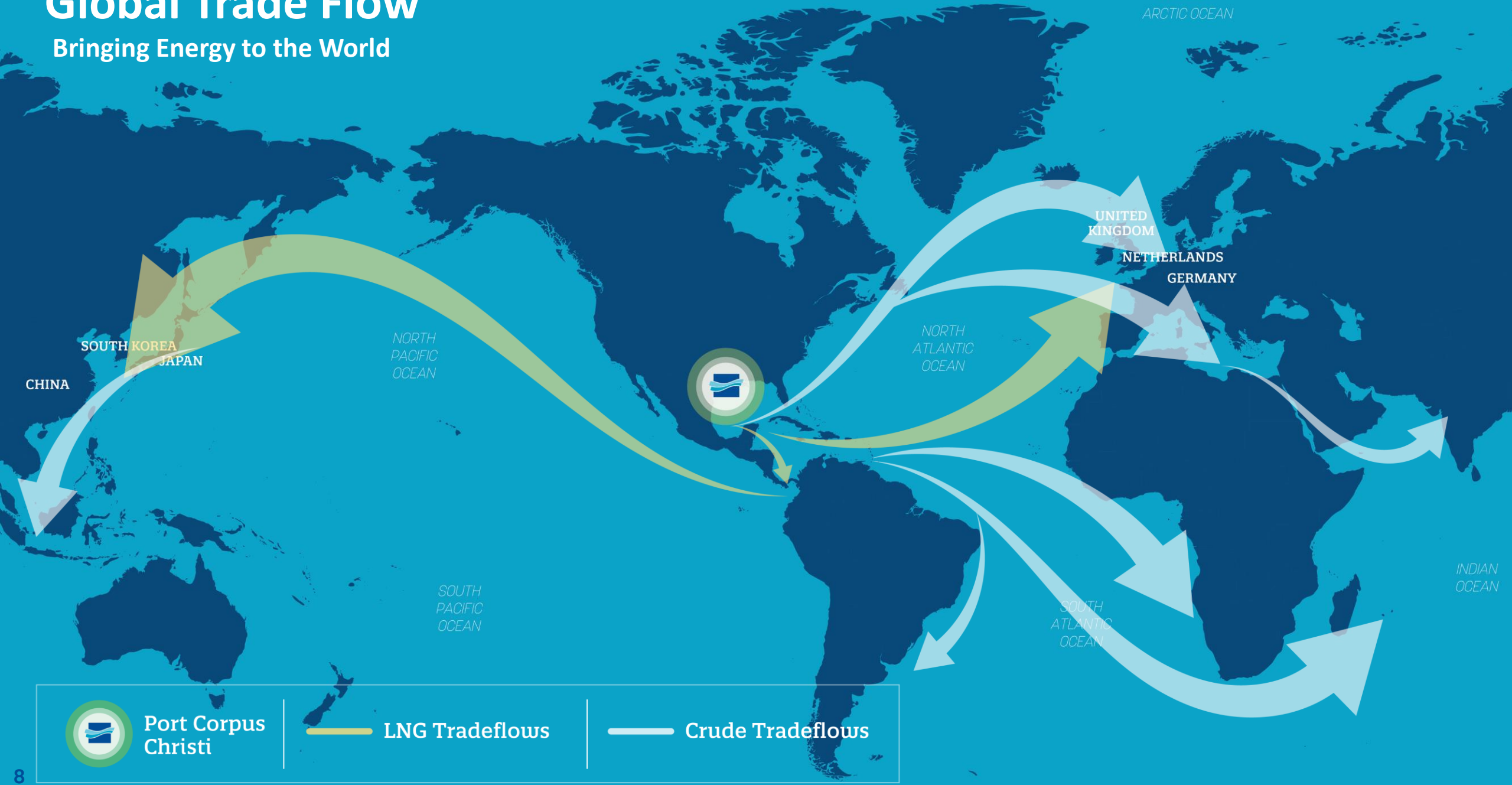
Corpus Christi

Air Quality Compliance
Attainment status for federal ozone standards

Carbon Management Solutions
Developing scalable, centralized onshore and offshore geologic storage

Global Trade Flow

Bringing Energy to the World



Emerging World-Scale Hydrogen Hub

Unique Geographic + Commercial Attributes

Abundant Renewable Energy Generation

#1 in Wind Energy
#2 in Solar Generation

PCCA + Avangrid + NREL analyzing integrated offshore wind and offshore H_2 production

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Abundant/Economical Natural Gas
including substantial available waste gas from wellheads + existing industry

Developing centralized CCS infrastructure to support scalable low carbon H_2 production from gas

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Cultivating multiple world-scale H_2 pathways:

- Multiple world-scale ammonia producers in site selection/feasibility phase
- Existing liquefaction potential near the gateway

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Port Corpus Christi's Horizons Clean H2 Hub Encouraged to Submit Full Application

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- **NEWS RELEASE** -
Monday January 9, 2023

Port of Corpus Christi Receives Invitation from DOE to Advance Hydrogen Hub Proposal

Corpus Christi, TX, USA – The US Department of Energy (DOE) Office of Clean Energy Demonstration announced it has encouraged the Port of Corpus Christi Authority (Port Corpus Christi) to submit a full application for its Horizons Clean Hydrogen Hub (HCH2) through the Regional Clean Hydrogen Hubs Program.

The Port of Corpus Christi, as a landlord port authority and the owner of the most improved, most efficient ship channel on the US Gulf Coast, is the prime applicant for the HCH2 and is the common denominator to each of the roughly two dozen discrete clean hydrogen production projects in the proposed Hub. The HCH2 Concept Paper, submitted to the DOE on November 7, names around 30 private sector team members as owners, developers and/or operators, offtakers, and end users of various hydrogen value chain projects and supporting infrastructure, including but not limited to:

- Ambient Fuels
- AMMPower
- Apex Clean Energy
- Ares Management Infrastructure Opportunities funds
- Avangrid
- Avina Clean Hydrogen
- Big Hill
- Buckeye Partners
- Epic Midstream
- Green H2 Energy Partners
- Green H2 International
- Howard Midstream Energy Partners
- Hydrogen Optimized
- Magellan Midstream Partners
- Mitsubishi Chemical
- Monarch Energy
- Motus Energy
- Pattern Energy
- Plug Power
- Repsol Hydrogen
- Sempra Infrastructure
- Trafigura
- Teal Chemistry and Energy

Hydrogen, which can be produced using either renewable electricity or natural gas feedstocks, has long been recognized as a very flexible energy carrier with a wide range of applications. Existing operations around the Port of Corpus Christi already use hydrogen as part of the refining process, and a number of other industries may transition to hydrogen as a low carbon alternative to natural gas to power their operations. HCH2 projects will use — and add to — the 110 miles of existing hydrogen pipelines to move hydrogen through the region. When it is to be exported from the Hub by rail or ship, hydrogen likely will be reacted into ammonia, which is a larger, more stable molecule that can either be used directly as an energy source or processed to yield free hydrogen.

"The Port of Corpus Christi is thrilled and grateful that our hydrogen hub development concept has resonated with the U.S. Department of Energy," said **Sean Strawbridge, Chief Executive Officer for the Port of Corpus Christi**. "As a public port authority with large tracts of available land and a burgeoning industrial complex, we find ourselves in a unique position to integrate multiple links in the clean hydrogen production value chain creating efficient H2 campuses offering high efficacy returns on these precious federal investments."

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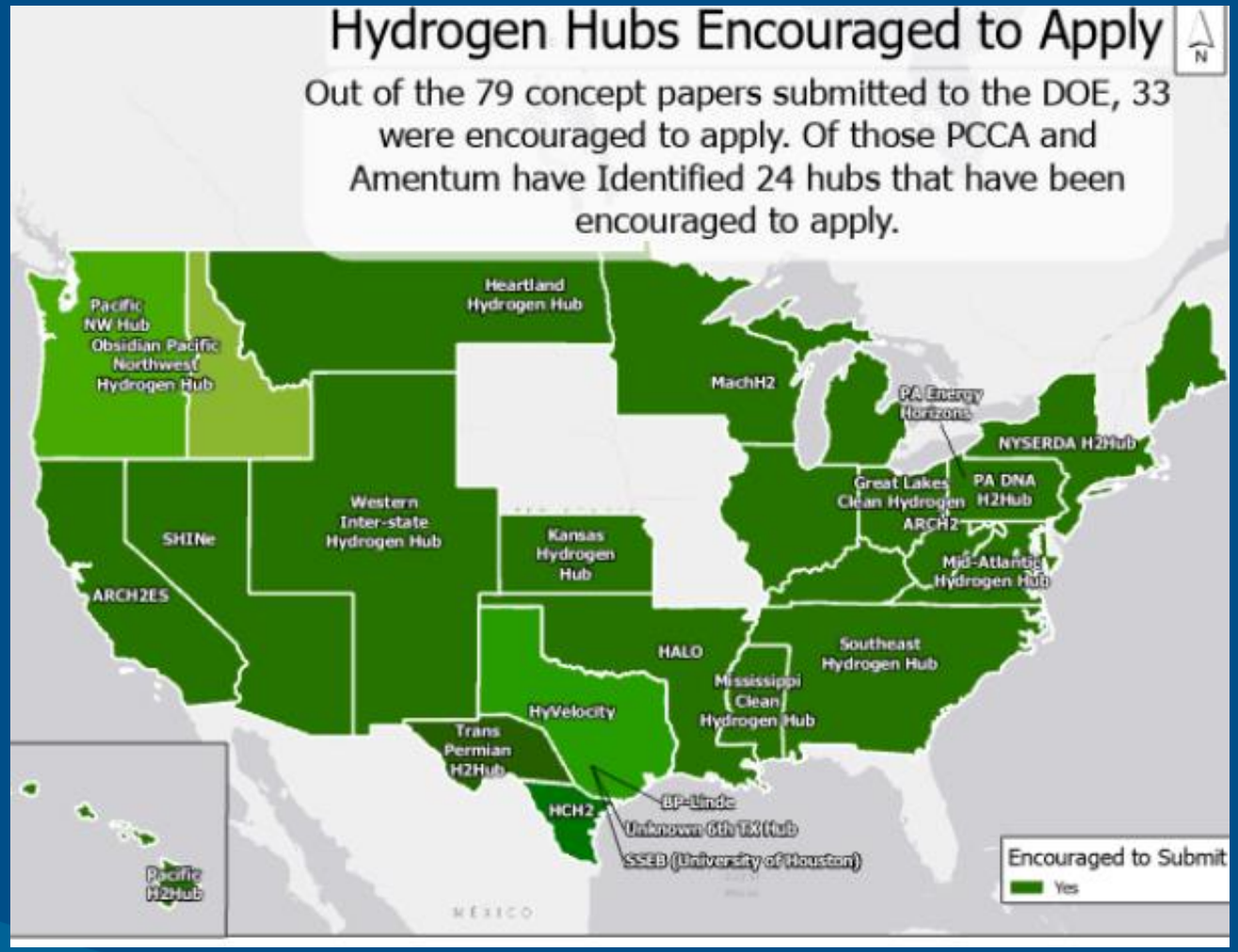
Horizons Clean Hydrogen Hub



- U.S. Department of Energy Office of Clean Energy Demonstration has encouraged Port of Corpus Christi to submit full application
- PCCA Horizons Hub is one of 33 applicants (from initial 79 concept papers) to reach this phase
- Roughly 30 private sector team members named in Concept Paper
- $6 - $7 Billion in federal funding available in total to support at least four hubs

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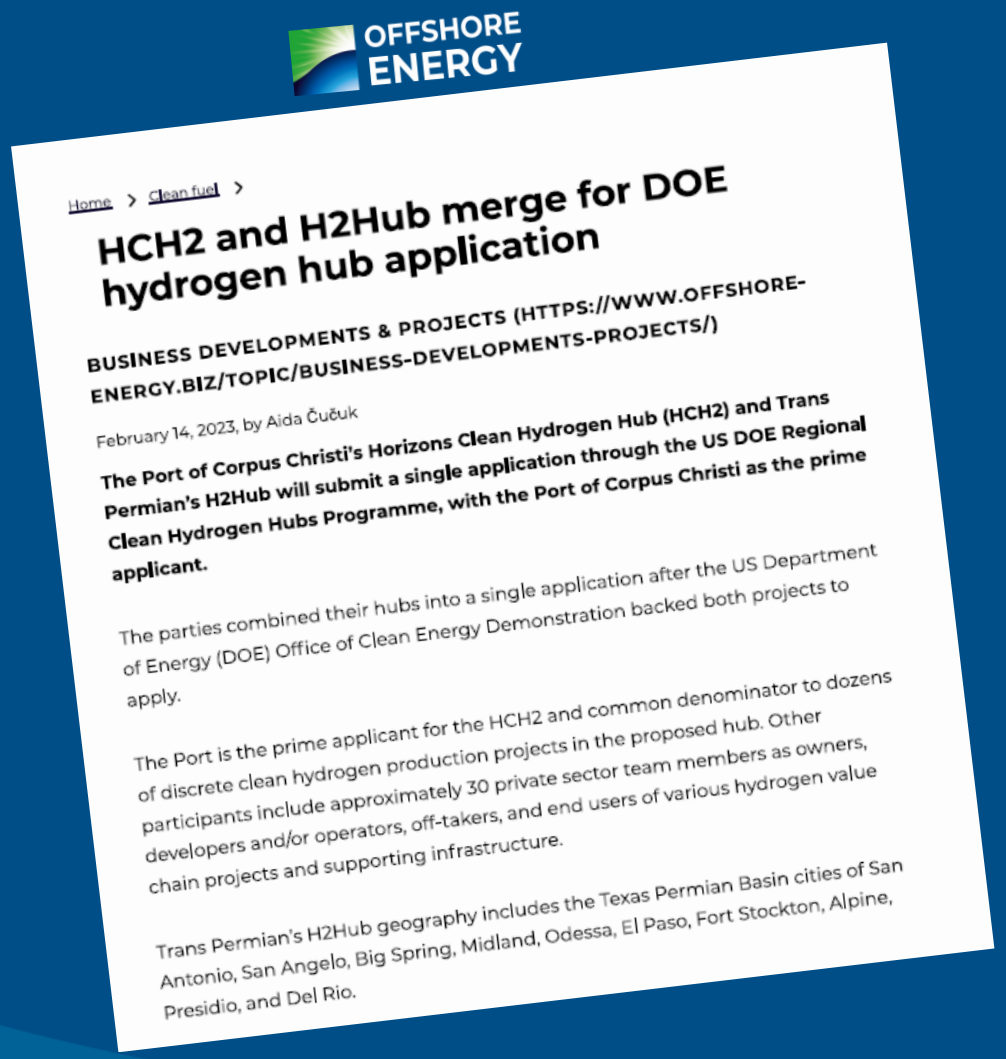
Horizons Clean Hydrogen/Trans Permian Hubs Merge



OFFSHORE ENERGY

Home > Clean fuel >

HCH2 and H2Hub merge for DOE hydrogen hub application

BUSINESS DEVELOPMENTS & PROJECTS (HTTPS://WWW.OFFSHORE-ENERGY.BIZ/TOPIC/BUSINESS-DEVELOPMENTS-PROJECTS/)

February 14, 2023, by Aida Čučuk

The Port of Corpus Christi's Horizons Clean Hydrogen Hub (HCH2) and Trans Permian's H2Hub will submit a single application through the US DOE Regional Clean Hydrogen Hubs Programme, with the Port of Corpus Christi as the prime applicant.

The parties combined their hubs into a single application after the US Department of Energy (DOE) Office of Clean Energy Demonstration backed both projects to apply.

The Port is the prime applicant for the HCH2 and common denominator to dozens of discrete clean hydrogen production projects in the proposed hub. Other participants include approximately 30 private sector team members as owners, developers and/or operators, off-takers, and end users of various hydrogen value chain projects and supporting infrastructure.

Trans Permian's H2Hub geography includes the Texas Permian Basin cities of San Antonio, San Angelo, Big Spring, Midland, Odessa, El Paso, Fort Stockton, Alpine, Presidio, and Del Rio.

- Port of Corpus Christi recently announced its application to DOE will merge with Trans Permian H2Hub
- Both projects were asked by DOE to submit full applications through Regional Clean Hydrogen Hubs Program
- Consolidation of the two projects is a natural and strategic step
- Hub concept creates roadmap for diversifying and decarbonizing the corridor with potential to deliver transformative benefits to communities

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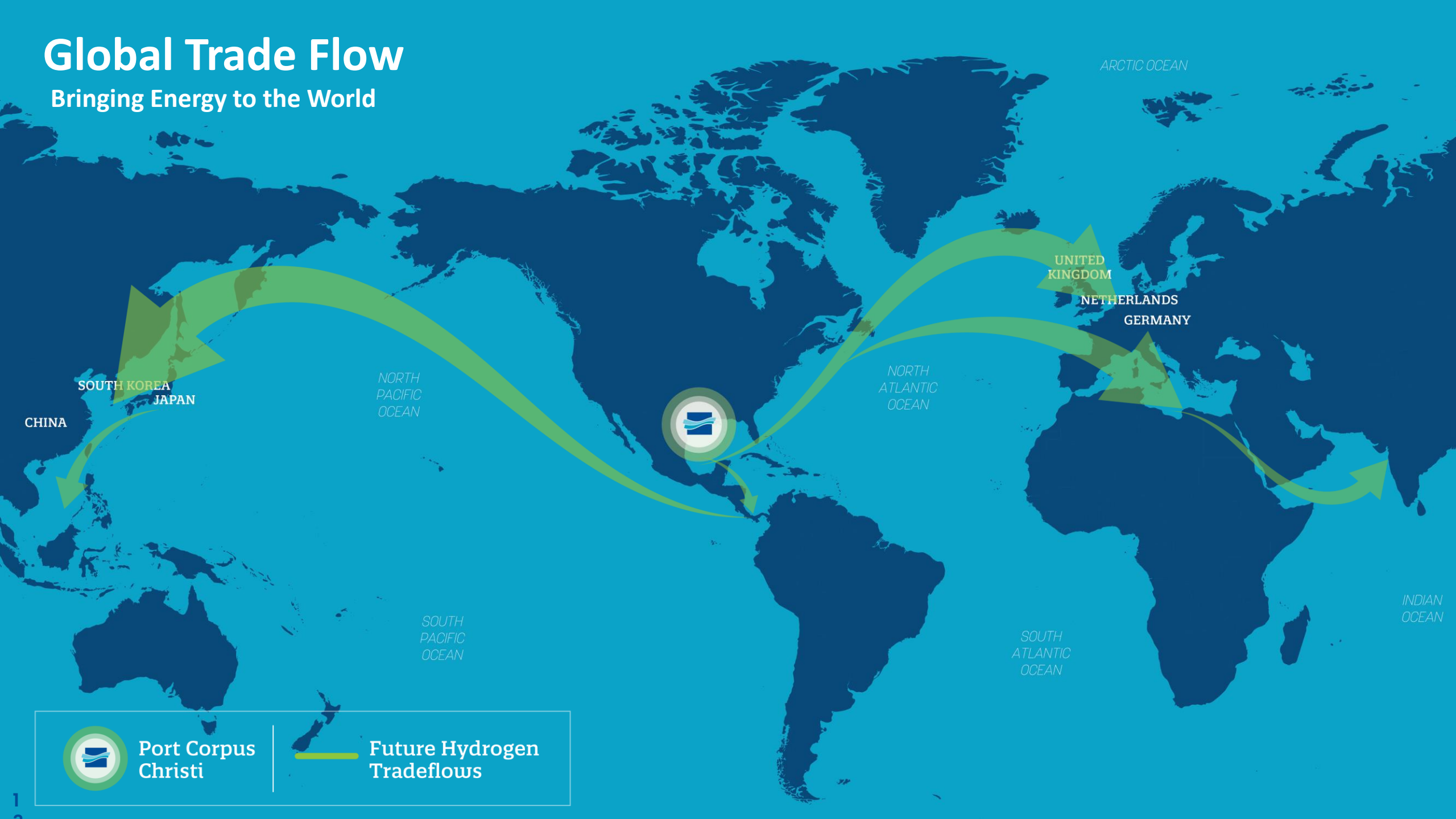
Global Trade Flow

Bringing Energy to the World

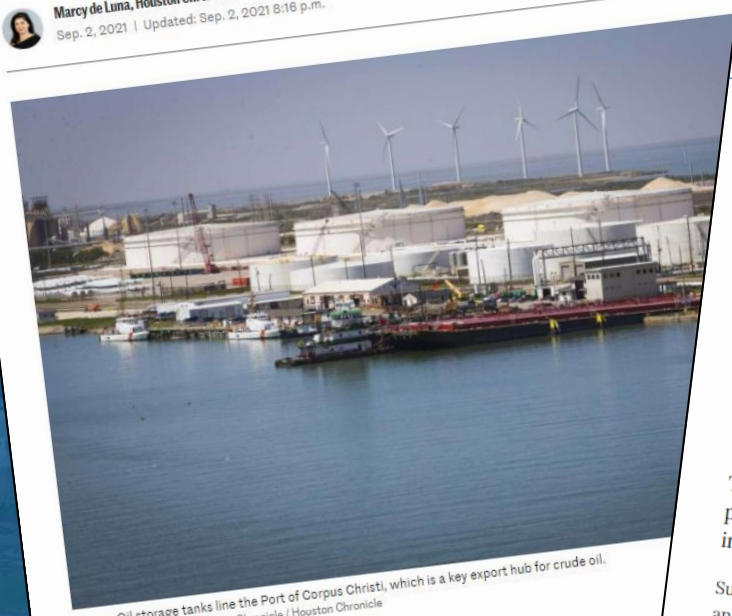


Port Corpus Christi, GLO Partner for Large-scale CCS

BUSINESS // ENERGY

Port of Corpus Christi to develop large-scale carbon storage facility

Marcy de Luna, Houston Chronicle
Sep. 2, 2021 | Updated: Sep. 2, 2021 8:16 p.m.



Oil storage tanks line the Port of Corpus Christi, which is a key export hub for crude oil.
Mark Mulligan, Houston Chronicle / Houston Chronicle

The Port of Corpus Christi continues to turn its focus to carbon sto
unveiling plans for its second sequestration-related project within
weeks.

The Port and the Texas General Land Office on Wednesday said
store carbon dioxide captured in the port area in geological re
Gulf of Mexico.

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Port of Corpus Christi and Texas GLO to collaborate in large-scale carbon storage

SEPTEMBER 2, 2021 7:40 AM

The Port of Corpus Christi Authority and the Texas General Land Office (GLO) plan to co-develop a carbon dioxide (CO_2) storage solution in the Coastal Bend in support of national decarbonization targets.

Such a solution would involve infrastructure to transport and permanently store CO_2 captured by various industrial target sources in the greater Port of Corpus Christi area, the Port of Corpus Christi said in a news release.

Port of Corpus Christi

Industry leaders recognize the detrimental impacts of excessive CO_2 emissions. Partnering to capture and sequester these emissions has unmatched environmental benefits. A recent report from the American Petroleum Institute and the International Petroleum Industry Environmental Conservation Association and the International Association of Oil and Gas

MOU identifies Coastal Bend region as next focal point for lease of state lands for geologic storage of captured CO2

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CCS: PCCA was the only recipient of CarbonSAFE funding in Texas

US DOE awards Port of Corpus Christi with $16.4M in CarbonSAFE grants

BUSINESS DEVELOPMENTS & PROJECTS

February 2, 2023, by Aida Čučuk

The Port of Corpus Christi has been allocated $16.4 million through the US Department of Energy's (DOE) Carbon Storage Assurance Facility Enterprise (CarbonSAFE) initiative to evaluate the technical and economic feasibility of permanently storing captured carbon dioxide (CO2) from industrial operations.

Illustration / Courtesy of Port of Corpus Christi

- Two distinctly funded projects: onshore under Port-owned property and under state-owned offshore tracts
- Grants designed to accelerate development of centralized solution to capture and manage CO2 emissions
- Howard Energy + Talos Energy signed a lease for onshore 13k + acres for CCS evaluation

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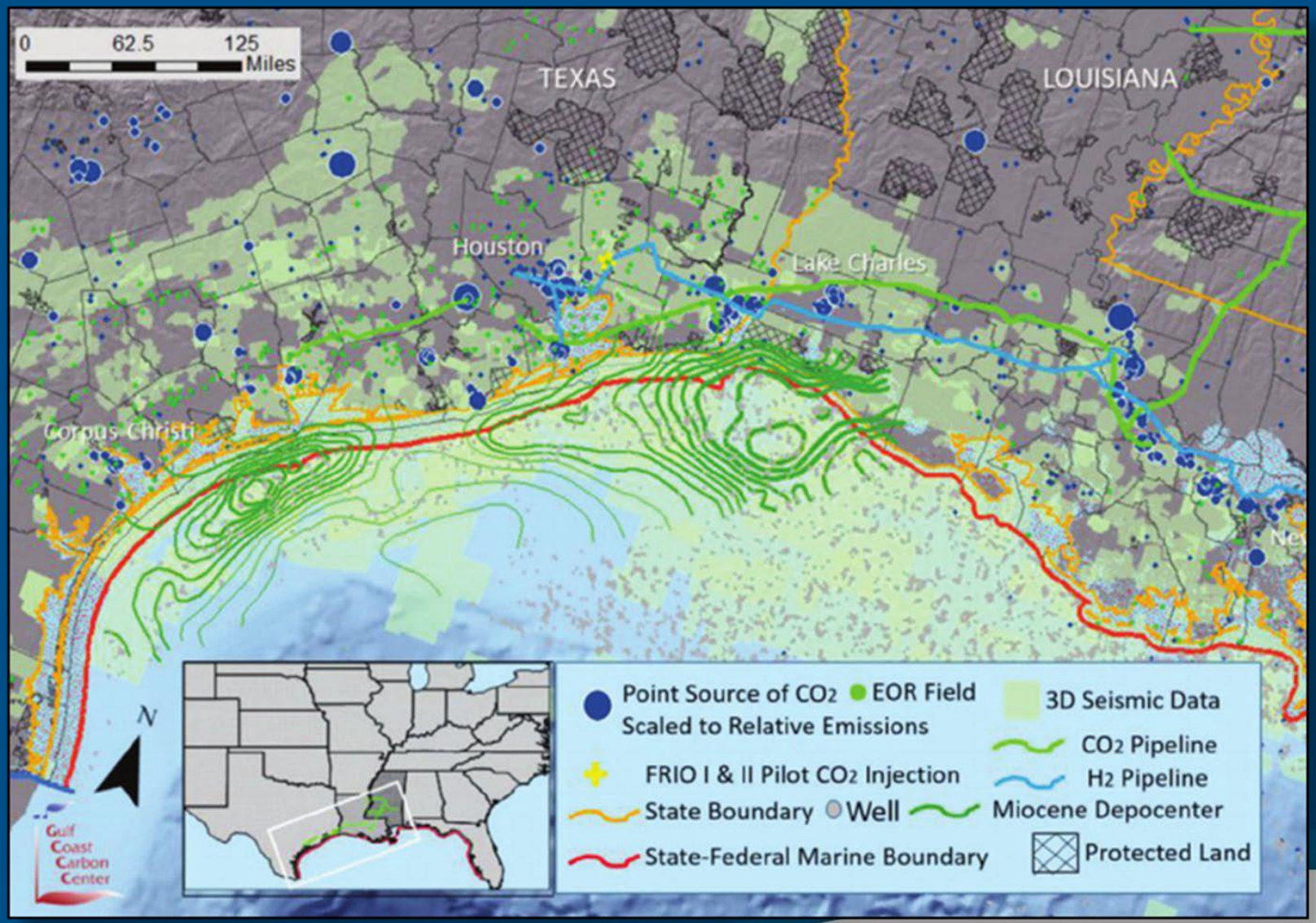
Emerging Carbon Management Hub



Port Corpus Christi's Role in CCUS

- Send clear signal to marketplace that centralized CCUS solution IS coming
- Cultivate CCU opportunities (new projects/Port customers)
- Identify/vet/permit route alternatives for CO_2 delivery infrastructure
- Lease Port-owned pore space for CO_2 injection and storage
- Facilitate logistical/commercial connections between emitters & CCS service providers
- Deploy Port capital to fund key infrastructure elements
- Pursue/leverage federal capital
- Advocate for appropriate state and federal policy

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Thank You

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