

# Deer Park Community Advisory Council

## Meeting Notes

### Monday, March 27, 2023

The 308<sup>th</sup> meeting of the Deer Park Community Advisory Council was held on Monday, March 27, 2023 at the Republic Grill. Facilitator Anne Gowan acknowledged the passing of community member Bobby Garcia and noted the DPCAC would make a donation in his memory. Facilitator Anne Gowan reviewed the agenda, which was accepted as proposed. The February 2023 meeting notes were approved without changes.

#### ATTENDANCE

DPCAC Community Members		DPCAC Plant Members		Guests/Resources	
	Brian Babin, US Rep 36	X	<b>Clean Harbors</b> , Bruce Riffel	X	Scott Castleman, Houston CCS Alliance
X	Ruth Bovd	X	<b>Dow Chemical Deer Park</b> , Montv Heins	X	John Collins
	Steve Corry, DPISD	X	<b>Evonik Oil Additives</b> , Jim Bentinck-Smith	X	Sheryl DaPron
X	Kristina DeWitty, SJC	X	<b>GEO Specialty Chemicals</b> , Steve Outlaw	X	Karen Guidry
	Christine DiCosimo, TX Hse. Dist. 128	X	<b>Intercontinental Terminals</b> , David Wascome, rep. by Rich Howes	X	Paul Guidry
X	Ken Donnell	X	<b>Lubrizol</b> , Hector Acosta	X	AJ Jones, Lubrizol
	Jamie Galloway, DP OEM		<b>NOVVI</b> , Alan Kominek, rep. by Bob Wolff	X	Ramanan Krishnamoorti, Univ. of Houston
X	Sherry Garrison	X	<b>OxyVinyls PVC/KOH</b> , Eric Delgado, rep. by John McPhaul	X	Brian Lawson, Dow Chemical DP
X	Tommy Ginn	X	<b>OxyVinyls VCM</b> , Josh Munn	X	Brad Lyons, Westlake Epoxy
X	Cara Herbeck	X	<b>Pemex Deer Park</b> , Guy Hackwell	X	Wanda Morris
	Steven Horton		<b>Pemex Deer Park</b> , Jennifer Walsh	X	Stuart Mueller, Harris Co Pollution Control
	Gretchen Knowles, Harris Co. Pct. 2	X	<b>Shell Deer Park</b> , Nathan Levin	X	Duke Ogega, Evonik
	Mayer Middleton, TX Sen. Dist. 11	X	<b>Shell Deer Park</b> , Jessica Blackmore	X	Jana Pellusch
	Paula Moorhaj, DP Chamber	X	<b>Texas Molecular</b> , Jimmy Bracher, rep. by Frank Marine	X	Darrell Pinckard
	Tyler Padgett, SJC	X	<b>Valvoline</b> , Robert Shelton	X	David Sanchez
	Bill Patterson, DP City Council		<b>Vopak Moda</b> , Jeff Sanford, rep. by Duane Campbell	X	Maria Sanchez
	Ariel Pena	X	<b>Vopak Terminal Deer Park</b> , Kathy Stewart, rep. by Gary Jackson	X	Marcile Taylor, student
	Randon Pierson	X	<b>Westlake Epoxy</b> , Marlene Mercado	X	Charles Vu, UHCL
	Vickey Roberts			X	Tim Wright, Houston CCS Alliance
X	Andy Smith, San Jacinto Battleground				
X	Angela Smith, City of Deer Park				
	Charles Thomas		<b>Support Staff</b>		
	Cheyenne Valdez	X	Anne Gowan, Facilitator		
X	David Wade	X	Marilyn Bass, Secretary		
	Ernest Weedon				

## **Carbon Capture and Storage 101: Meeting 1**

(Presentations attached)

University of Houston VP of Energy and Innovation Ramanan Krishnamoorti presented “Carbon Capture, Utilization and Sequestration” for the Deer Park Community Advisory Council. Carbon capture and storage is an underlying part of the energy transition currently underway in countries like the United States, Western Europe and Australia because human emissions of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases are driving climate change. Since 1850, global temperatures have risen by 1.2 degrees Celsius. Scientists anticipate that global temperatures will continue to rise by 0.2 degrees Celsius per decade. The amount of warming Earth will experience in the future depends on how much CO<sub>2</sub> and other greenhouse gases we emit in coming decades.

Most of the emissions of human-caused greenhouse gases (GHG) come primarily from burning fossil fuels- coal, natural gas, and petroleum—for energy use. OurWorldinData.org reported that 73% of GHG that are emitted through human activity is CO<sub>2</sub> that is generated from energy usage in industry, transportation, and buildings. Carbon Dioxide created as a result of industrial processes is the easiest to capture at the source because carbon emissions can be captured prior to its release into the atmosphere, and then sequestered in geological storage sites. Once concentrated amounts of CO<sub>2</sub> have been captured, it can be compressed and transported via pipeline, truck or railcar and injected and stored in underground geological formations.

Four of the 10 top carbon capture projects in the United States are in Texas. Currently, there are 26 projects worldwide that have the capacity to capture 40 million tons annually. However, scientists predict that globally up to 10 gigatons of CO<sub>2</sub> will need to be removed from the atmosphere annually by 2050 in order to reach net zero. Carbon capture and storage technologies have been used for decades and has been proven to be safe and effective. Cost-effective ways to efficiently remove CO<sub>2</sub> need to continue to be developed so that removal can become economically feasible.

The ultimate goal is to be able capture CO<sub>2</sub> and then recycle, utilize or dispose of it in ways that are non-harming to the environment. Cost-effective utilization of CO<sub>2</sub> is still being researched. However, environmentally conscious innovators are developing solutions that would turn the climate-warming pollutant into a marketable raw material. Some interesting ideas that have been tested by engineers and scientists include turning CO<sub>2</sub> into rock, making cement, feeding it to algae to make carbon fiber, and turning it into fuel. Today, the technology required to convert the CO<sub>2</sub> to usable products is still expensive and cost-prohibitive, which is why there is still a focus on storage.

### **Questions and Comments:**

1. *What is the University of Houston researching?* University of Houston research is focusing on storage, including how to conduct real-time monitoring of underground storage wells and how to utilize seismic geological data to store CO<sub>2</sub> more safely. Additionally, they are researching how to make carbon capture and utilization profitable, including what products captured carbon can be used to make.
2. *Is Houston really one of the top 3 areas in the world leading CCS advancement?* Yes, Houston is leading CCS technology advancement and has proven that it can be done fast and at-scale. The only places in the world that are able to do this currently are Houston, Norway and the west coast of Australia.

3. *Is the rest of the world dedicating resources to research CCS?* Yes, the United States, Norway and Western Europe, Australia and the Middle East are dedicating resources for CCS and utilization. Unfortunately, China and India are the biggest creators of carbon but at this time are not contributing to carbon capture and storage. The United States has the opportunity to be a world leader in CCS and utilization.
4. *What is the best type of geologic formation for CO2 storage?* Geologic storage is defined as the placement of CO2 into a subsurface formation so that it will remain safely and permanently stored. There are several underground storage options including saline formations and oil and natural gas reservoirs. Subsurface formations need to include a caprock and water flooding capability. The United States has numerous locations along the East Coast, West Coast, and Gulf Coast that are ideal for CO2 storage.
5. *If there are any other questions, please email Ramanan Krishnamoorti at [Ramanan@uh.edu](mailto:Ramanan@uh.edu)*

Scott Castleman of Houston Carbon Capture & Storage (CCS) Alliance said that their mission is to help decarbonize the Houston area and make Houston the model for an emerging, lower-emission world that supports jobs, economic growth and prosperity. Current members of Houston CCS Alliance are Air Liquide, BASF, Calpine, Chevron, DOW, ExxonMobil, INEOS, Linde, LyondellBasell, Marathon, Phillips66 and Shell. The Alliance also has the support of numerous local leaders.

Since 1997, Department of Energy (DOE) has significantly advanced the carbon capture and storage (CCS) knowledge base through a diverse portfolio of applied research projects. The portfolio includes industry cost-shared technology development projects, university research grants, collaborative work with other national laboratories, and research conducted in-house. In 2022, the DOE released three funding opportunities that will provide an additional \$7 billion for CCS infrastructure. Additionally, the Inflation Reduction Act (IRA) of 2022 includes billions of dollars in grants and loans to spur financing and deployment of new clean energy projects that cut greenhouse gas emissions and other pollutants. Additionally, the IRA provides critical updates to the 45Q tax credit, which incentivizes the use of carbon capture and storage.

Castleman said Deer Park and Texas is at ground zero of CCS technology. Texas has the geology for storage both onshore and offshore. Additionally, the industrial complexes in Deer Park and the Houston area have the ability to capture CO2 in large enough amounts that can significantly reduce CO2 emissions. CCS projects not only bring emission reductions and significant tax credits for industrial facilities, but can also add jobs for the region and \$100 million in potential investment opportunities.

#### **Questions and Comments:**

- 1) *Do you see potential that people that have lost energy jobs could have jobs in CCS workforce now?* Yes, people who have lost jobs in the energy industry will be able to use their knowledge, skills and abilities to get similar jobs for companies adding carbon capture units at their facilities. Currently, there are CCS jobs in research at the university and community college level.
- 2) *More information about the Houston CCS Alliance can be found at <https://houstonccs.com>. Questions for Houston CCS Alliance can be sent to [info@houstonccs.com](mailto:info@houstonccs.com).*

## Updates

**Pemex:** A fire occurred at Pemex on March 14 due to equipment failure. The failure caused the release of a pyrotechnic material, which catches fire as it combines with air. The fire lasted for about 45 minutes. Off-site monitoring reflected no impact to the community. A root cause analysis and investigation are underway. More information will be shared when the investigation is complete.

**Written Facility Updates** - Members received regular periodic plant updates in advance of the meeting but the facilitator asked the plants who reported this month to share one or two highlights from their update that they wanted members to know about.

- Evonik – Duke Ogega reported that Evonik Oil additives had no reportable spills or releases, no permit exceedances and no OSHA recordable injuries since last report. Evonik is in the process of renewing their air permit. Evonik saw increased participation in their safety programs. Business is good and expanding and Evonik continues to expand its product portfolio to meet customer demand and business flexibility/ continuity needs.
- Valvoline – Bob Shelton reported no reportable spills and the site has not had an OSHA recordable injury since 2020. The site conducted several drills on spill and injury response. An announcement was made on August 1, 2022 that Valvoline Manufacturing will be known as Valvoline Global Products (VGP). Additionally, VGP was acquired by Saudi Aramco on March 1st. Aramco plans to double the business in 7 years. The Deer Park facility is growing and is now operating 24 hours a day.
- Vopak Terminal – Gary Jackson reported no enforcement actions and no injuries since they last reported. The site had two spills. The first occurred when approximately 1 gallon of biodegradable hydraulic fluid leaked from a crane into the Houston Ship Channel. The second occurred when approximately 7 gallons of lube oil from a lift station pump was discharged to the Houston Ship Channel. Vopak Terminal plans to dredge docks in quarters 3 and 4 this year, and to replace the bulkhead on ship dock 2 area.

**Ozone Exceedance Days** - There was one exceedance of the Houston Region 8-hour ozone standard in late February. There were no exceedances of the Houston Region 1-hour standard, or the Deer Park 8-hour or 1-hour standards. Normally, ozone exceedances occur between April through November in the Houston area.

**San Jacinto Battleground State Historic Site** will hold its 2023 San Jacinto Day Celebration on April 22<sup>nd</sup> and it will be a day of fun, food, history, and reenactments celebrating the 187<sup>th</sup> anniversary of the Battle of San Jacinto. Area 7<sup>th</sup> graders will be hosted on Friday, April 21<sup>st</sup>. Residents will see an increase in traffic. Volunteers and sponsors are needed to help make the event a success. For more information, visit <https://www.thc.texas.gov/historic-sites%E2%80%8B/san-jacinto-battleground/volunteering-san-jacinto-day-celebration>.

## Upcoming Events

- **Deer Park Chamber of Commerce Chemistry Day** will be held on March 28<sup>th</sup> at San Jacinto College.

## **Plans for Future Meetings**

DPCAC meets at Republic Grill at the City of Deer Park Battleground Golf course from 6:00 - 7:30 p.m.

### **April 24, 2023- Carbon Capture and Storage in Deer Park: Meeting 2 (Shell and Calpine)**

- Shell Deer Park Chemical and Calpine, a cogeneration facility on its site, are both considering carbon capture and storage projects that could reduce greenhouse gas emissions significantly.
- They will be asked to describe why they are considering projects, how CCS would work, benefits, and risks. After the preceding meeting's overview, members may have additional questions for speakers to cover.
- Other DPCAC plants will be asked if they are undertaking any CCS projects. DPCAC may wish them to speak at a future meeting.

### **May 22, 2023- SH 225 and SH 146 Construction and Maintenance**

- TxDOT will discuss projects underway and planned for SH 225 and SH 146, including connectors to the BW8 Bridge

## **Dates for 2023 - all Mondays**

Jan. 23  
Feb. 27  
Mar. 27  
Apr. 24

May 22  
No June meeting  
No July meeting  
Aug. 28

Sept. 25  
Oct. 23  
Nov. 27  
No December meeting

# Deer Park Community Advisory Council (DPCAC)

## Input on Carbon Capture and Storage

3-27-23

### 1. Anything you were happy to hear?

- That we are working toward carbon capture.
- Capturing so much carbon.
- Learning that they believe there's 100 metric tons of CO<sub>2</sub> to be captured in the Houston area.
- That we are focusing on this in regards to climate change.
- Happy to see that Houston is a candidate to lead
- Houston knowledge base
- Plenty of opportunity here in Houston area with people and technology
- UH being on the forefront of the research
- The science/technology are already around
- That we are ahead of everyone else.
- Houston has an important role in this; cutting edge
- Happy that skills are transferable; need to understand timeline for projects
- The experience we already have.
- New technologies and jobs being created.
- Diverse groups coming together.
- Create the technology and sell it to other countries.
- Interesting that they are using it as a fuel
- Good that it is a liquid
- Good topic, good speakers

### 2. Any concerns about what you heard?

- That US and others are at an economic disadvantage to China, et al
- Because it's relatively new, the method of storage is concerning, possible leaks??
- Unintended consequences; what happens when the CO<sub>2</sub> is left in the ground?
- Is seismic activity not possible?
- How can we use CO<sub>2</sub> so that we don't have to store it underground?
- We're going to be overwhelmed w/ CO<sub>2</sub> based on current capture and added sources (permafrost CO<sub>2</sub> release)
- Must make it profitable
- Who funds this?
- Lack of value chain in current state
- If we don't do it, then what?
- Hard to make an impact
- Rest of the world is not interested
- Carbon capture should be a world effort
- Only .1% is being captured now. How to scale up?
- Time required to scale up to capture what is needed

### 3. Any lingering questions?

- How do we inventory?
- Is offshore storage better than inland injection?

- What are other countries (China and India) doing to help the CO<sub>2</sub> situation?
- What happens if we don't capture carbon?
- Carbon capture should be a priority.
- What are the long-term impacts of not capturing carbon?
- Who needs to move the US to the next stage? Govt? Industry? Communities?

**4. Input on other topics?**

- Good food, but we need an updated microphone.
- This was an excellent topic and speakers were very informative.
- Industry to reach out to community
- Update in 1 year? See progress for Houston companies

**5. Willing to participate on:**

- Editing Committee:
  
- Membership Committee: Ruth Boyd, Tommy Ginn, Wanda Morris, Sheryl DaProng

Awareness- Products- Community- Safety- Jobs

**DEER PARK**  
Chamber of Commerce

# CHEMISTRY DAY



**Tuesday, March 28th, 2023**

**Lunch 11:00-1:00**

San Jacinto College LyondellBasell  
Center For Petrochemical,  
Energy and Technology  
7901 Fairmont Pkwy., Pasadena, Tx, 77505

**Lunch**

\$35 members  
\$50 non-members

**Table of 6**

\$200 members  
\$250 non-members

**Booth**

\$400 members  
\$450 non-members

**Sponsorships**

**Gold Sponsor (Executive)**

\$2,500

**Silver Sponsor**

\$1,000

**Bronze Sponsor**

\$500

**Join us as we bring education and awareness of the value of industry**

- Lunch & Expo: 11am-1pm, Student Expo 1-3pm
- Interactive Expo Booths from leading industries



# 2023 SAN JACINTO CELEBRATION

## Volunteers Wanted!

Learn More: [bit.ly/VolunteeringSJC](http://bit.ly/VolunteeringSJC)

## Sponsorships Available!

Email Kali Ellis for more information  
[kellis@sanjacinto-museum.org](mailto:kellis@sanjacinto-museum.org)



TEXAS  
HISTORICAL  
COMMISSION  
REAL PLACES TELLING REAL STORIES