

# Economic Development Nebraska Wind and Solar Conference

Tim O'Brien, Director – Economic Development & External Relations

11/9/2021

# Agenda

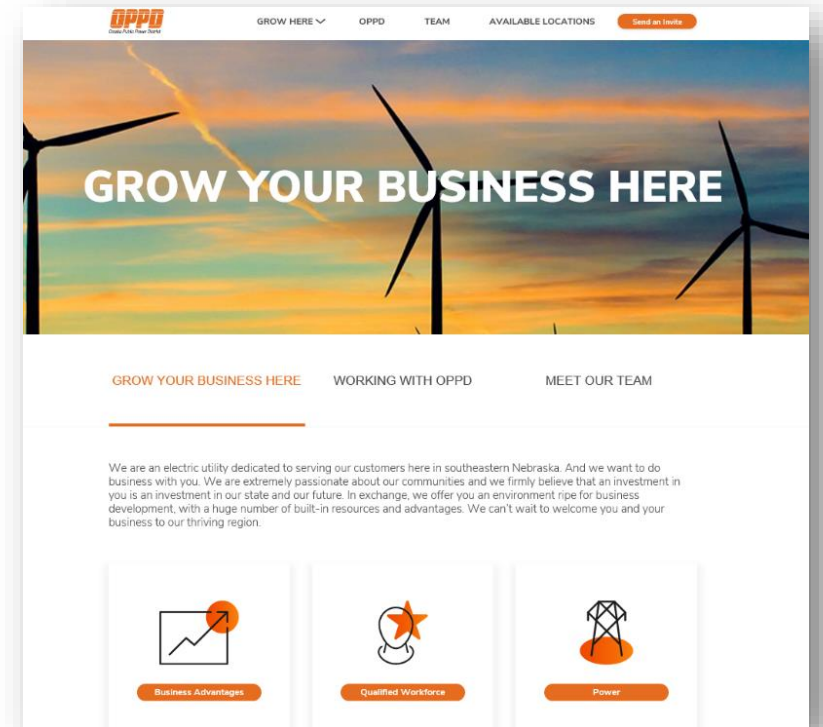
- Economic Development Overview
- Site Selection
- Utility Roles
- Implications for Growth
- OPPD Actions

# OPPD's Economic Development Overview

Driven by board directive Strategic Directive (SD) 11 – Economic Development

## Activities:

- Respond to new business prospects
- Retain and expand business
- Support entrepreneurship and small businesses
- Marketing our region and state
- Site development pipeline
- Community development and leadership
- Utilize OPPD's assets in the most efficient way
- Promote innovation while maintaining rate affordability, aligned with SD-2: Rates, by offering economic programs or rates
- Engagement in the economic development ecosystem (business climate, policy, programs, etc.)



# New and Expanding Businesses Bring...

- Jobs
- Capital Investment
- Tax growth
- Infrastructure development
- Community support
- “Multiplier effect”
  - 1 manufacturing job has at least a 1.5 job multiplier
- Revenue
- Use of assets more efficiently
- In-Lieu-of-Tax for counties and communities



# What's Important to a Project?






- Utility infrastructure (electricity, gas, water and sewer)
  - Timeline, availability and cost
  - Energy Availability and Cost
    - *Ranked #3: Corporate Executives 2020 Survey - Area Development*
  - Renewables, sustainability goals
- Workforce (availability, skills)
- Logistics - Roads, rail, airports
- Telecommunications
- Incentives – Local & state
- Supply Chain
- Real Estate – ready and available site or building
- Streamlined permitting
- Partnerships





**= Process of Elimination**



# Sample of Location Considerations

## Social

 **Businesses**
 **Places of Worship**
 **Agriculture**
 **Schools**
 **Parks & Recreation**







 **Cemeteries**
 **Commercial/ Industry**
 **New & Platted Developments**
 **Residences/ Homes**






## Environmental

 **Conservation Areas**
 **Floodplains**
 **Wooded Areas**
 **Threatened & Endangered Species**

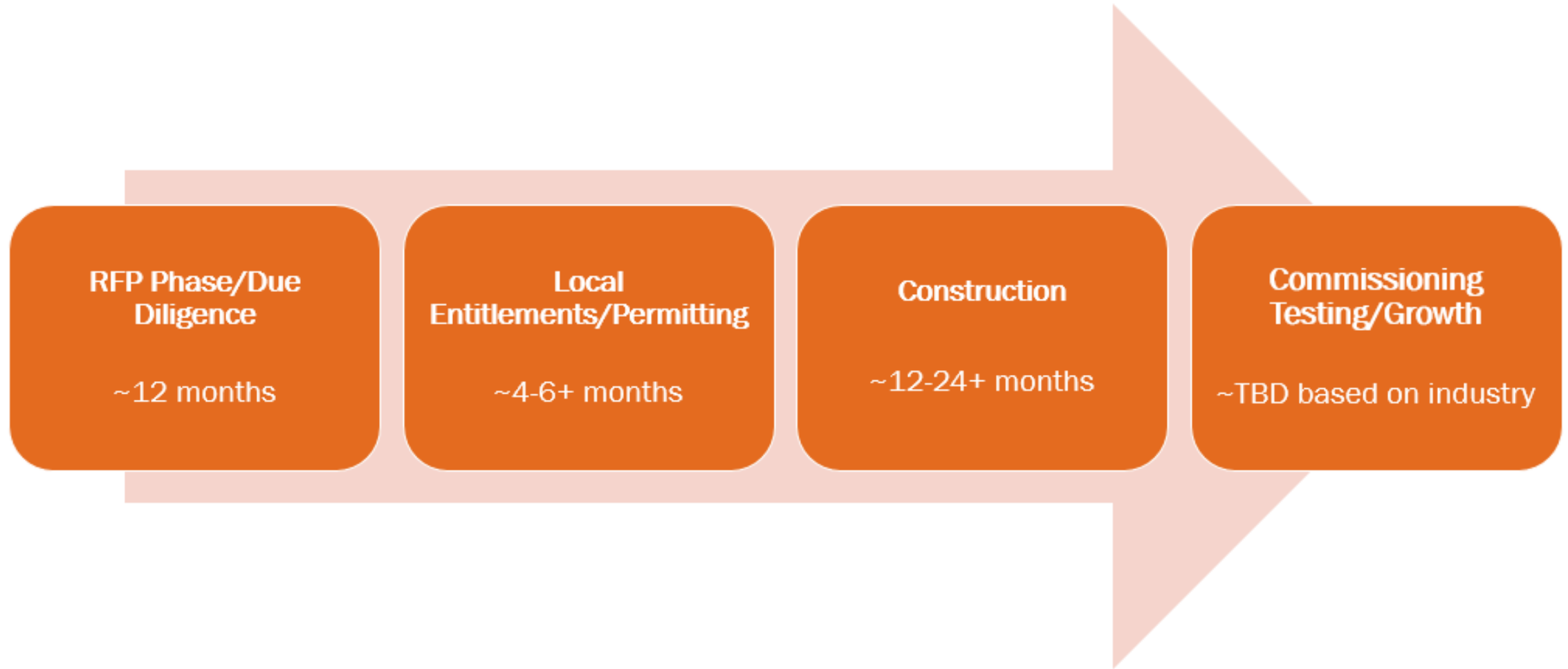
 **Federal & State Lands**
 **Historic & Archaeological Sites**
 **Wetlands/Waterways**

## Engineering

 **Airports**
 **Constructability**
 **Railroads**
 **Irrigation/ Pivots**
 **Wells**
 **Access to Transmission**

 **Cost**
 **Highways**
 **Structures (other)**
 **Existing/Planned Utilities**
 **Site Topography (flat land)**

# Project Timing



# Questions about Electricity

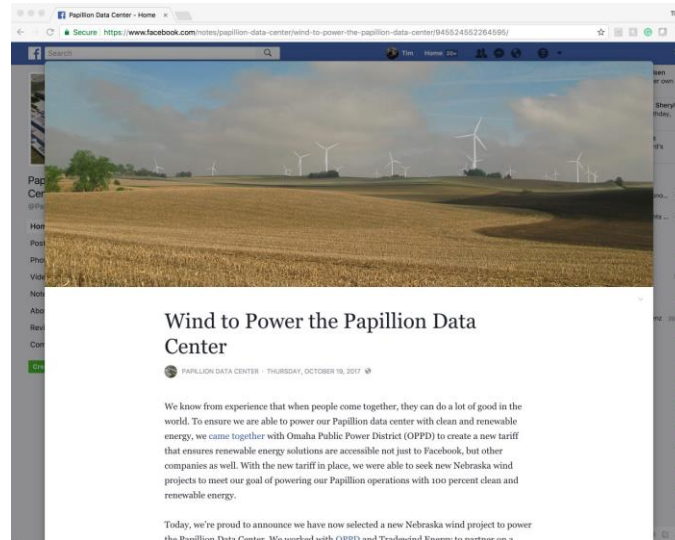
- Past history of circuit reliability information
- Dual-feeds from separate substations or same substation
- Estimated annual costs
- Average cents per kWh
- Generation mix
- Carbon footprint
- Percentage of renewable energy sources
- Renewable energy opportunities
- Estimates to provide permanent service
- Historical and future rates
- Other unique requests (e.g. coal ash, rail usage, water)





# Success Takes Time, Vision and Partnerships

- Significant growth in our region and state
- Persistence and process improvements matter
- Led the way with market based rates
- Site Development Initiatives
- OPPD has been recognized by *Site Selection* as a Top Utility in Economic Development for the last 5 years!



# Success Takes Time, Vision and Partnerships

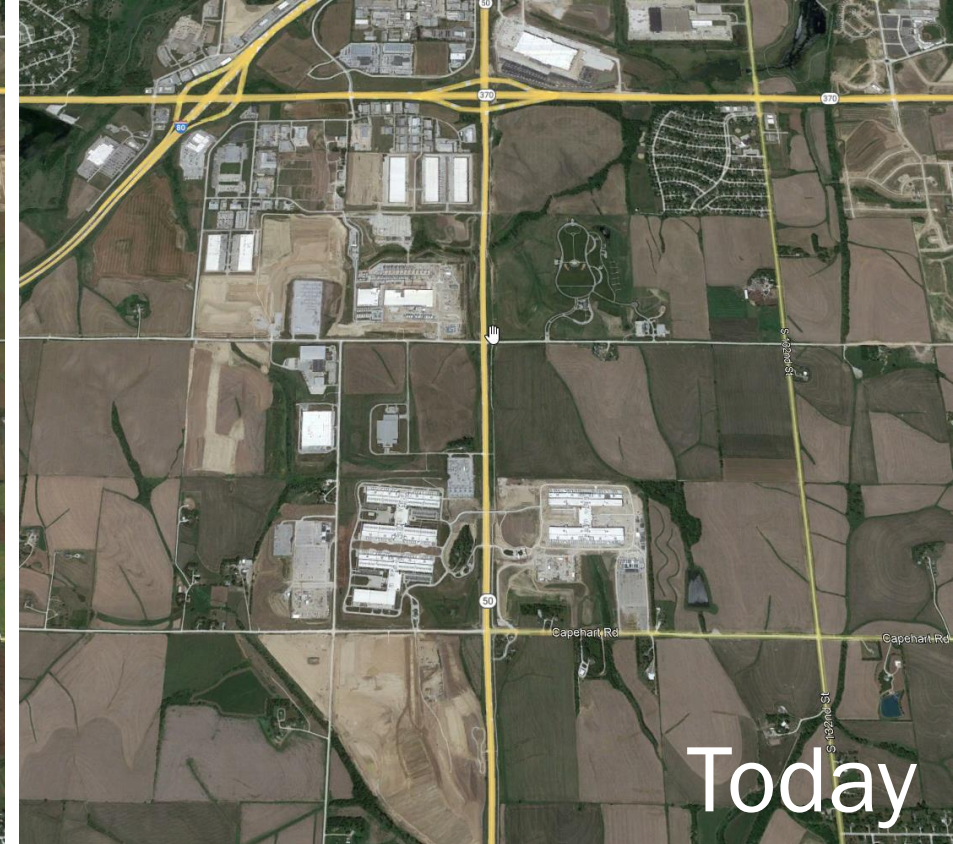
## Case Study

### Hwy 50 Corridor in Sarpy County

- Collaboration and vision has led to significant growth
- Several hundred acres developed much faster than anticipated
- Infrastructure played a critical role – electricity and sewer
- Growth from data centers to distribution and logistics

### Impact

- Hundreds of jobs
- Billions of dollars in investment



# What is evolving related to growth and renewables development?

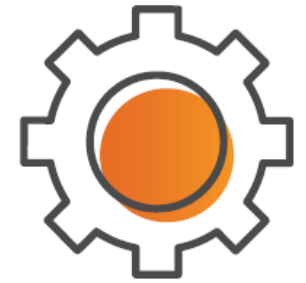
## Implications for Growth



- Shovel-ready sites
- Electric system planning
- Education
- Planning and zoning
- Evolving policy
- Decarbonization initiatives
- Customer vs. utility investment/risk
- RE100

# Sample of items we are working on...

- Continue the addition of up to 600MW of solar
- Various strategic initiatives – Decarbonization, Grid Modernization and Customer Engagement for the Future
- 2022 Integrated Resource Plan
- Continue development and marketing of products and services
- Site identification and planning
- Continue education and advocacy for renewable energy development



# Follow us...

+Facebook/Twitter/NextDoor

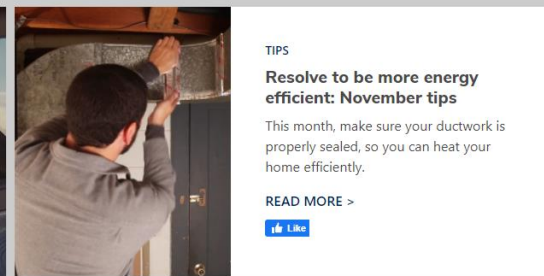
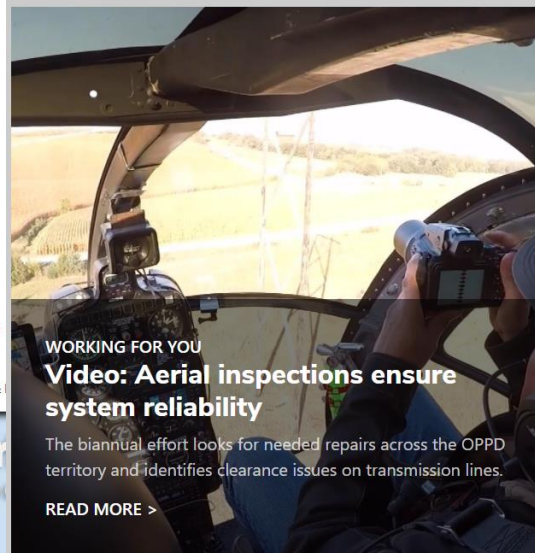
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Energy news from Omaha Public Power District

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RESIDENTIAL BUSINESS OUTAGES ENVIRONMENT NEWS & ...



**OPPDCommunityConnect**

We're your energy partner. And that means we value your opinions. We want every member of our 13-county community to consider this a platform to connect. At OPPDCommunityConnect, you can learn more about what we're doing and share input, insights and ideas with us. Visit us here to learn about our goals, concerns and efforts - and share your own.

Some of the tools on this website require you to create an account. It's easy! Just click "Register" and create a username and password associated with your email.

**OUTAGE INFO**



Stay up-to-date with outages by



**GETTING FUTURE-READY**



OPPD is getting future-ready, bringing the concept of "energy intelligence" to its electrical system and its customers.

oppd.com

Current Conversations

**New Natural Gas Facilities**

As part of Power with Purpose, two new natural gas facilities are being built: Standing Bear Lake and Turtle Creek Stations

**Solar + Natural Gas**

Power with Purpose. OPPD's utility-scale solar project, including natural gas, is the largest renewable investment of this type in the region.

oppdcommunityconnect.com



November 9, 2021

Nebraska Wind & Solar Conference

*Confidential and Proprietary*

# Ranger Power Midwest Experience

- ❖ Solar development company specializing in utility-scale solar and storage projects, ranging in size from 20 to 400 MW
- ❖ Led by an experienced team of developers with a proven track record of community-supported solar, including operating clean energy projects across the United States
- ❖ Ranger has successfully permitted over 2,000 MWs of projects in the Midwest, including in Nebraska, Indiana, Wisconsin, Michigan, Illinois, and Missouri
  - ❖ Many of these represented the largest utility-scale solar projects to be permitted in their respective states at the time
- ❖ Ranger has announced over 1,700 MWs of contracted solar projects with municipal owned utilities, cooperatives, and IOUs—making it a trusted leader with a focus in public power

Ranger takes pride in community engagement, transparency, and responsible solar development

# Ranger Solar Projects

## Currently Under Construction or Operational

- ❖ Ranger has successfully started construction on 736 MW of solar projects and brought over 200 MW of clean energy to commercial operation in the Midwest since 2020
- ❖ By the end of 2021, Ranger anticipates that over 500 MWs of projects developed by Ranger Power will be in commercial operation.



Dressor Plains –99 MWac-- Fayette County, IL



Assembly Solar—239 MWac– Shiawassee County, MI

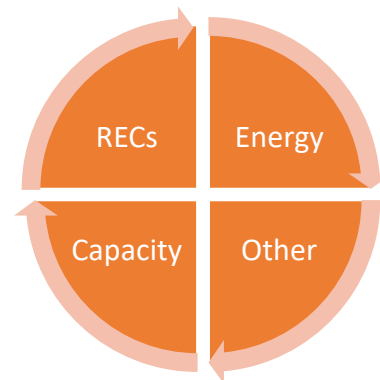
- Assembly Solar 1, 2, 3 – Shiawassee County, MI
  - 239 MWac
- Big River – White County, IL
  - 149 MWac
- Prairie State – Perry County, IL
  - 99 MWac
- Dressor Plains – Fayette County, IL
  - 99 MWac



# Beyond Energy & RECs



- Contract Length & Structure
- *Local* Economic Development & Benefits
- Workforce Development
- Environmental, Social, Governance (ESG)
- Supply Chain
- Diversity, Equity, & Inclusion (DEI)
- Environmental Benefit
- Environmental & Climate Justice
- Compatible Land Uses
- Community Engagement
- Load Matching
- Grid Decarbonization & Evolving Grid



**Maggie Tallmadge**

***Business Development  
Manager***

781-697-0021/

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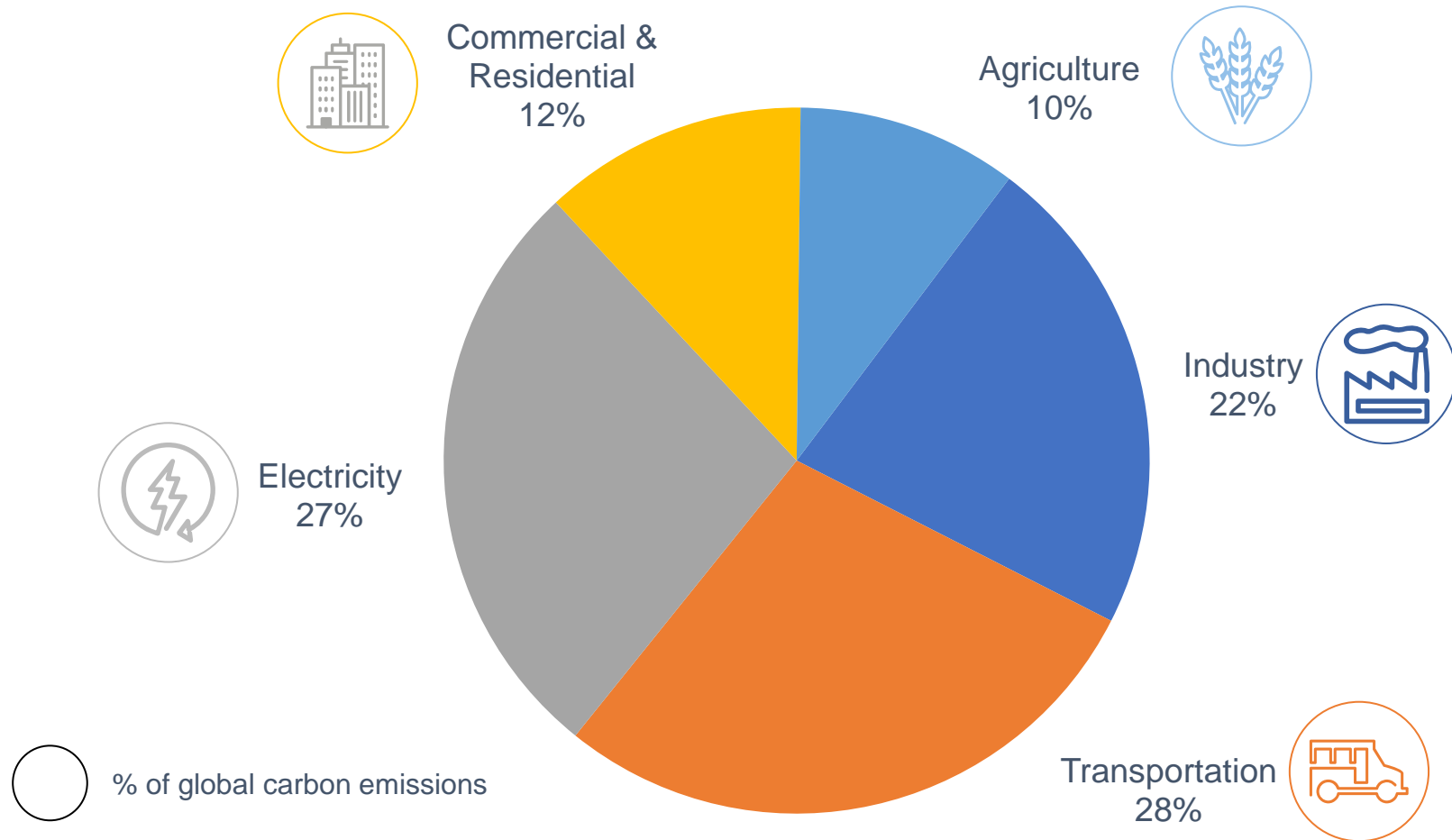
Thank you for your time!



# The Hydrogen to Power a Green World

**Our Vision: To build the world's  
leading clean hydrogen and  
materials company.**

# Need for de-carbonization



Monolith's solution addresses >85% of the CO<sub>2</sub> from the highest emitters

Source: EPA

# Green Hydrogen is a key pillar of de-carbonization

## Renewable energy\*



### Key markets served:

- Electricity Market

\*Renewable/Carbon-Free Electricity

## Battery innovation



### Key markets served:

- Short Term Electricity Storage
- Med/Light Duty Transportation

## Green hydrogen\*\*

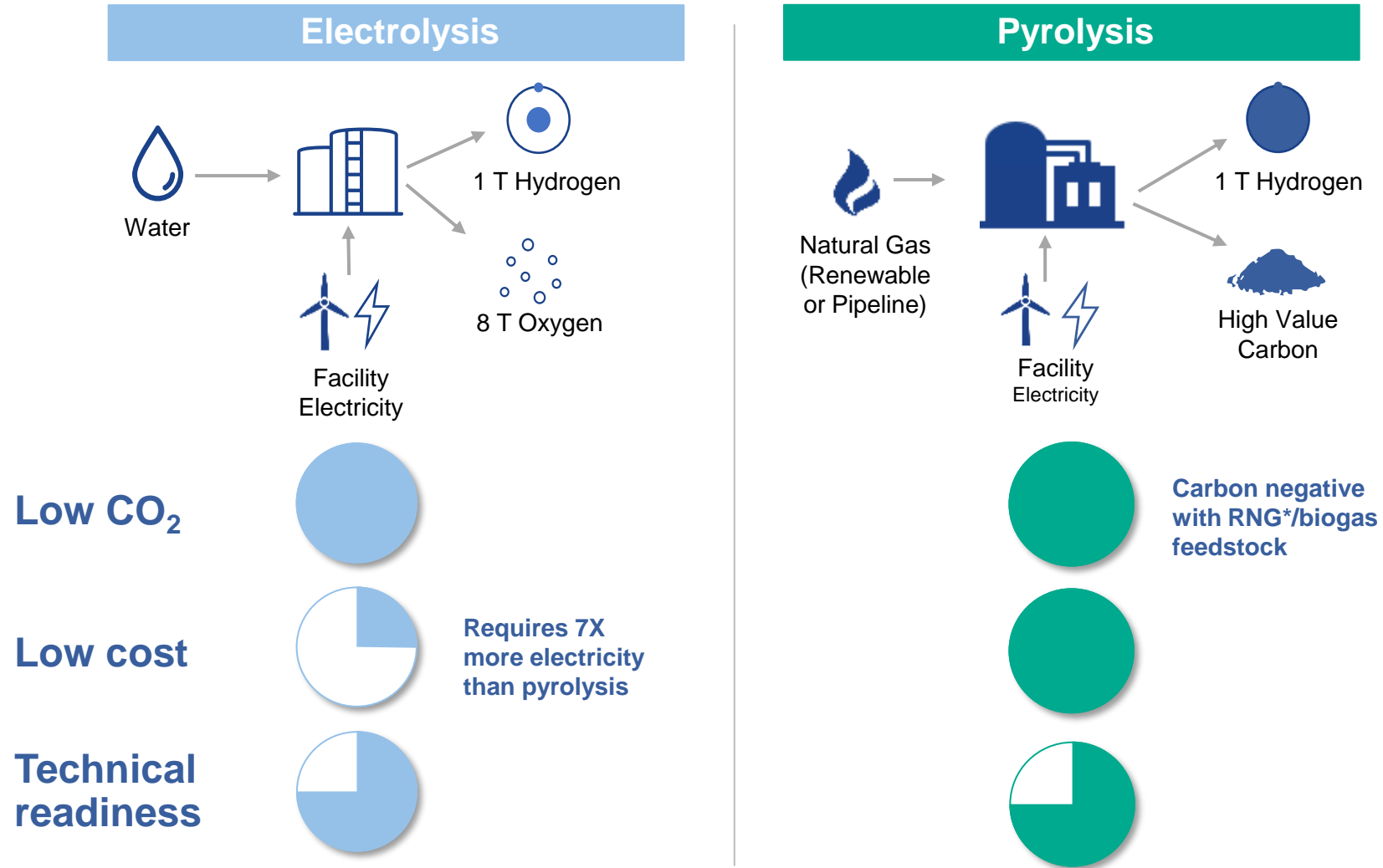


### Key markets served:

- Heavy Duty Transportation
- Marine & Air Transportation
- Steel Industries
- Chemical Industries
- Agriculture
- Long Term Electricity Storage

**\*\*Green hydrogen has broadest reach given unique ability to eliminate hard-to-abate CO<sub>2</sub> emissions**

# Two viable paths to Green Hydrogen production



# Green Hydrogen from electricity and natural gas

monolith

Protected Methane Pyrolysis Technology



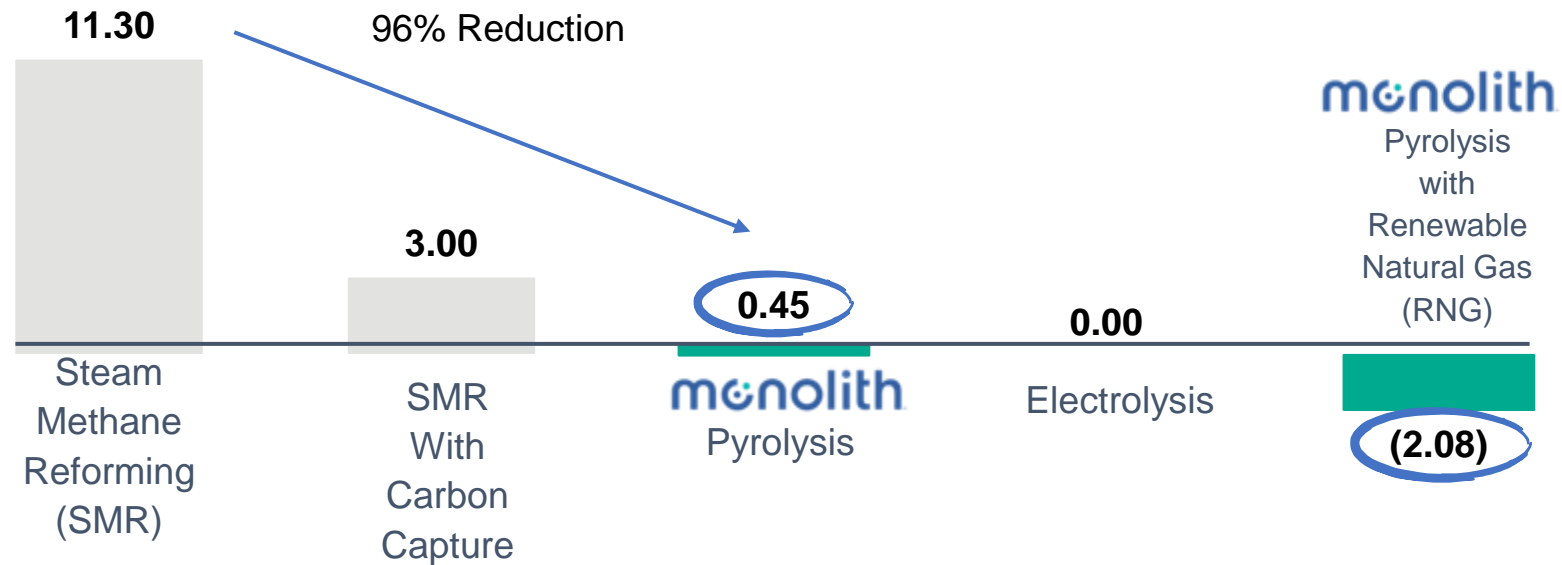
Olive Creek 1 (OC1)

Commercialization of technology complete



# Potential for lowest hydrogen carbon emissions

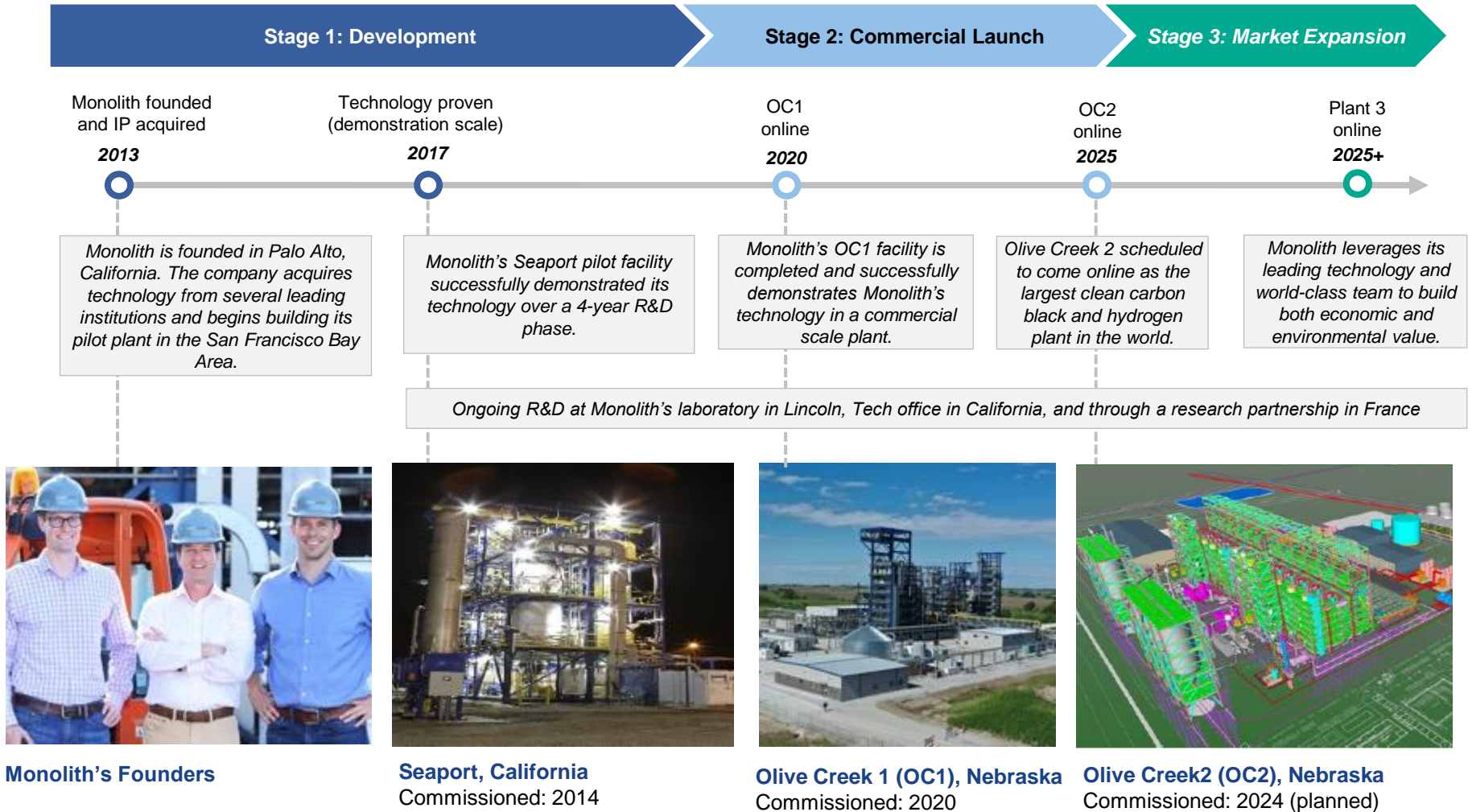
## Carbon Intensity Of Hydrogen Production – Well To Gate (kg CO<sub>2</sub>e / kg H<sub>2</sub>)



Note: Electrolysis and pyrolysis assume 100% renewable energy

Sources: NREL Hydrogen Analysis (H2A) Production Models, Version 3.2108, Central SMR without CCUS; NREL Hydrogen Analysis (H2A) Production Models, Version 3.2108, Central SMR with CCUS; Based on third party study using GREET1\_2020 and AR5 GWP (CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>); NREL Hydrogen Analysis (H2A) Production Models, Version 3.2108, Central Electrolysis (Process emissions only); Based on third party study using GREET1\_2020 and AR5 GWP (CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>)

# Our History



## Why Move to Nebraska?

- Partnership with NPPD/Norris for cost-effective, carbon-free public power
- Work ethic and pioneering spirit of highly skilled Nebraskans
- Community partnerships with Hallam and Lincoln
- Strong elected official support; favorable business/political climate
- Available, abundant natural gas
- Central location simplifies distribution



# Olive Creek Plant – Hallam, NE

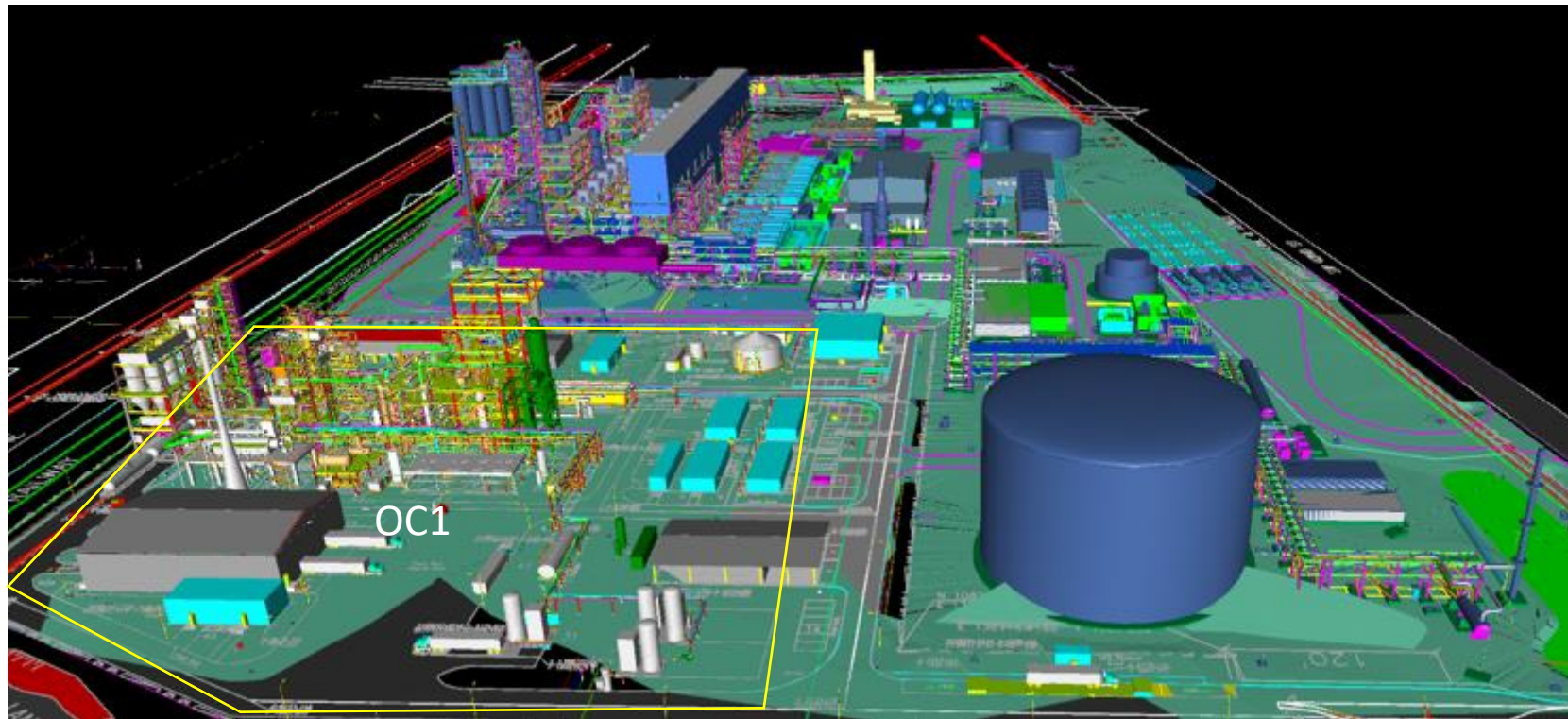


*OC1 is the first commercial-scale methane pyrolysis facility built in the U.S.*

# Olive Creek Expansion (OC2) - Hallam, NE

Olive Creek 2 (OC2) Facility	
Capacity	Hydrogen Production: ~60 ktpa Carbon Sequestration: ~180 ktpa Ammonia Production: ~275 ktpa
Completion	2025
Investment	\$1.0+ billion
Technology	Full commercial scale

OC2 Will be the Largest Green Hydrogen Plant in the Country



## Our clean hydrogen will go into:

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**Clean Steel  
Production**



**Heavy Transport Fuel**



**Clean Fertilizer**

## Our Clean Carbon Black:

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**Tires**



**Belts, Hoses,  
Conveyor Belts**



**Paint**



**Ink/Toner**



**Plastics**

## Why Buy from Monolith?

**Change your environmental story.**

Monolith creates the only cleanly made, sustainable carbon blacks with low impact on the planet. Our carbon blacks give your products a new environmental story to tell, while also providing superior performance and flexibility for your specific needs.

[monolith-carbonblack.com](https://monolith-carbonblack.com)

**monolith**  
Carbon Black

**Cleanly made products derived from carbon-free energy**





**Jobs That Build Families & Communities**

- High-paying
- Highly skilled
- Advanced Manufacturing
- Green Energy

# Economic Impact: Olive Creek Phase 1 (OC1)



**\$100+ Million**  
OC1 Construction

**201 Nebraska Jobs**  
93 Direct, 108 Indirect

**\$20.2 Million**  
Labor Income

**\$46.0 Million**  
Annual Economic Impact

Source: Dr. Eric Thompson, Director, UN-L Bureau of Business Research

# Projected Economic Impact: Olive Creek Plant (Phases 1 & 2)



**\$1+ Billion**

OC2 Construction

**758 Nebraska Jobs**

222 Direct, 536 Indirect

**\$78.2 Million**

Labor Income

**\$323.4 Million**

Annual Economic Impact

Source: Dr. Eric Thompson, Director, UN-L Bureau of Business Research

## Additional Economic Impact

### Olive Creek Construction Expansion (2022 – 2025):

- 800+ direct construction jobs
- Indirect job growth/economic impact

### Renewable Energy Infrastructure Project:

- Estimated cost: \$800+ million
- Construction jobs (multi-year project)
- Ongoing operations/maintenance jobs
- Indirect job growth/economic impact



Sources: Kiewit, NPPD

## Monolith Employees

“I didn’t think that I would be able to find a job that would challenge me as an engineer, provide the opportunity to help transform the environment and allow me to return to my rural Nebraska roots. I was thrilled when I found all three at Monolith.”

**Alana Wallace**, Reliability Engineer, Cortland, NE resident



“Monolith provided a great opportunity for me to both live and work in Hallam. I like being a part of a company like Monolith that is helping grow our local economy while also transforming the environment.”

**Jeremy Pierce**, Maintenance Supervisor, Hallam, NE resident



Thank You.