

# Massena Green Hydrogen Project

SAFE | RELIABLE | RESPONSIBLE

October 24, 2023

Air Products Internal Use Only



# Air Products is...

- World-leading industrial gases company in operation for over 80 years **with 60+ years of global hydrogen experience**
- Safety and sustainability a core value: *Grow, Conserve, Care*
- Industry leader across several hydrogen technology platforms and in pipeline design, operations and safety
- Recognized expert at developing multi-source, multi-customer production and distribution networks; significantly improving efficiency by scale and modern technology
- Member of the Hydrogen Council, a global CEO-led initiative with a united and long-term vision to develop the hydrogen economy

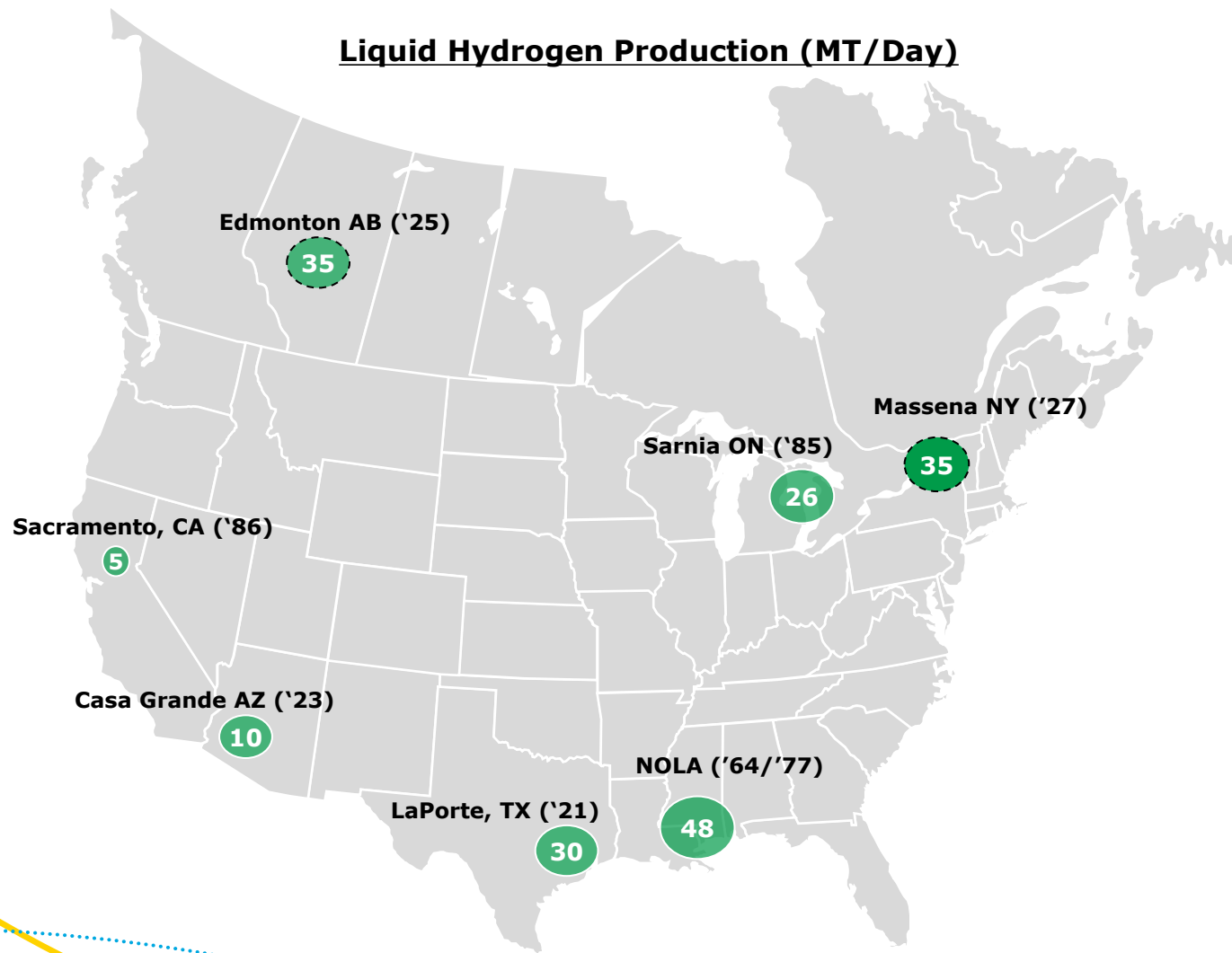


Hydrogen  
Council

AIR  
PRODUCTS 

# Liquid Hydrogen Production & Distribution

Liquid Hydrogen Production (MT/Day)



15 Million miles driven / Year



Liquid Trailer



Gaseous Tube Trailer



Mobile Fueler

# Hydrogen Production

Leading the transition to low carbon hydrogen

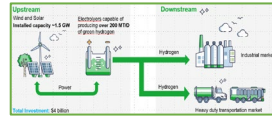
**>110 Hydrogen Production Facilities**  
(SMR, Electrolysis, Liquid and Gaseous H<sub>2</sub>)

**>9,000 MTD Capacity**  
**~600 MTD of H<sub>2</sub>**  
**at Port Arthur, TX**

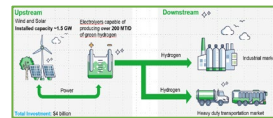
**>3,300 MTD in development**  
Edmonton H<sub>2</sub>  
Louisiana H<sub>2</sub>  
NEOM H<sub>2</sub>  
Texas H<sub>2</sub>  
Massena H<sub>2</sub>  
Arizona H<sub>2</sub>



**Edmonton H<sub>2</sub> Canada**



**Arizona H<sub>2</sub>**



**Texas H<sub>2</sub>**

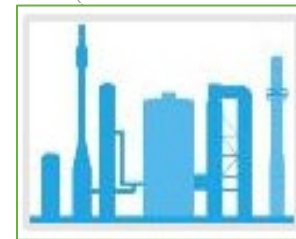


**Port Arthur, Texas H<sub>2</sub>**

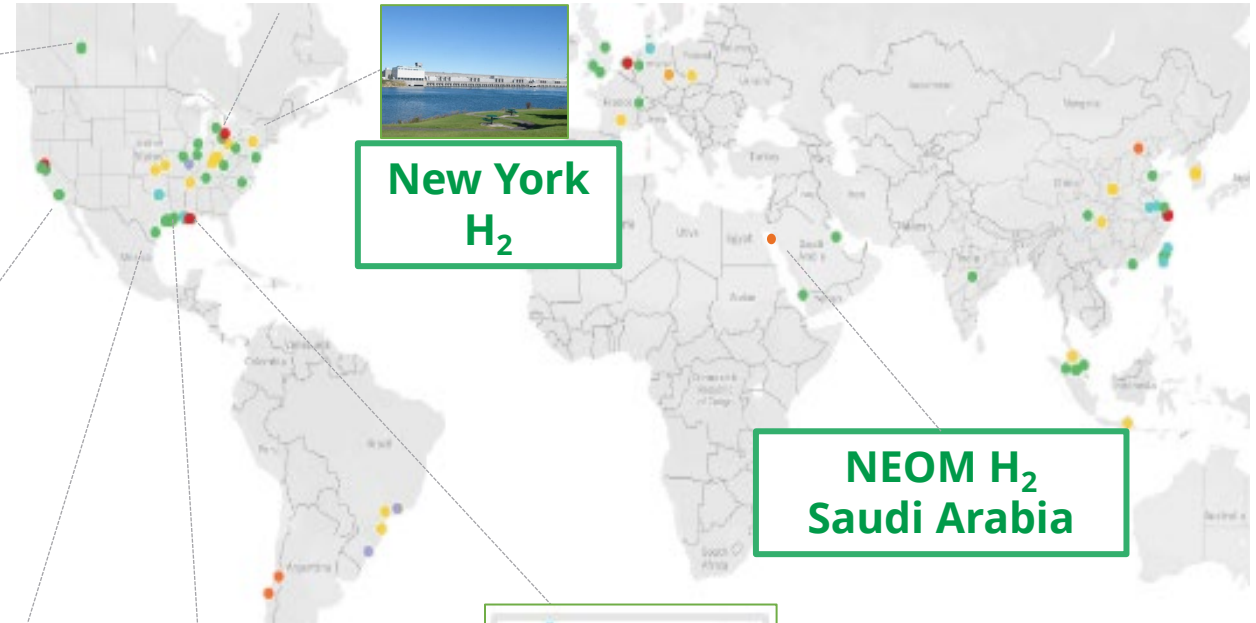


**New York H<sub>2</sub>**

**NEOM H<sub>2</sub>**  
**Saudi Arabia**



**Louisiana H<sub>2</sub>**



# Hydrogen and Battery Electric are Complementary Ways to Decarbonize



**Electricity & Battery Electric Technologies**



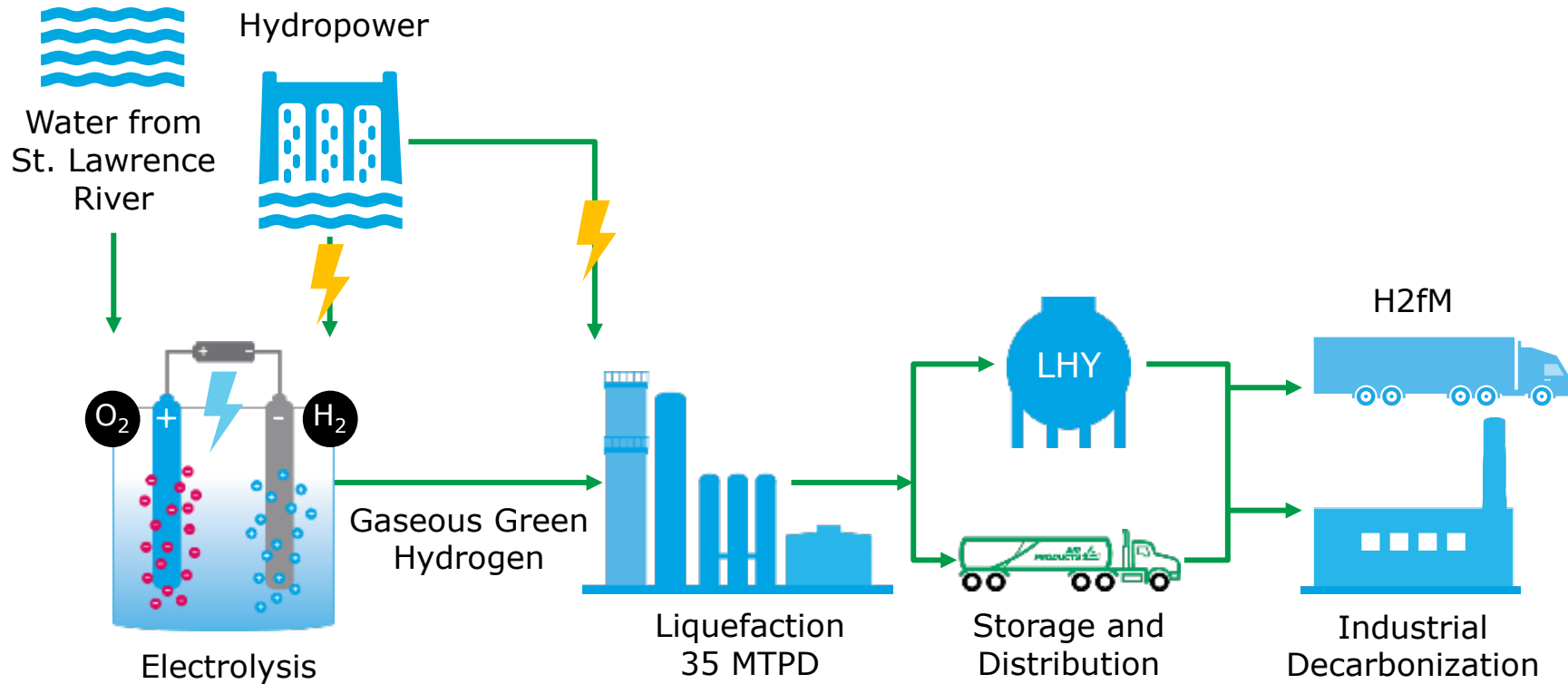
**Hydrogen & Fuel Cell Technologies**

Cars	Light industries
Buses on shorter routes	Commuter rail (via catenary)
Light- and medium-duty trucks	Heating / cooling

Buses on longer / more challenging routes	Port equipment (drayage trucks, yard switchers etc.)
Medium- and heavy-duty trucks	Heavy industries
Rail	Storage of renewable energy

# Massena Green Hydrogen Project

Hydrogen for mobility and industry



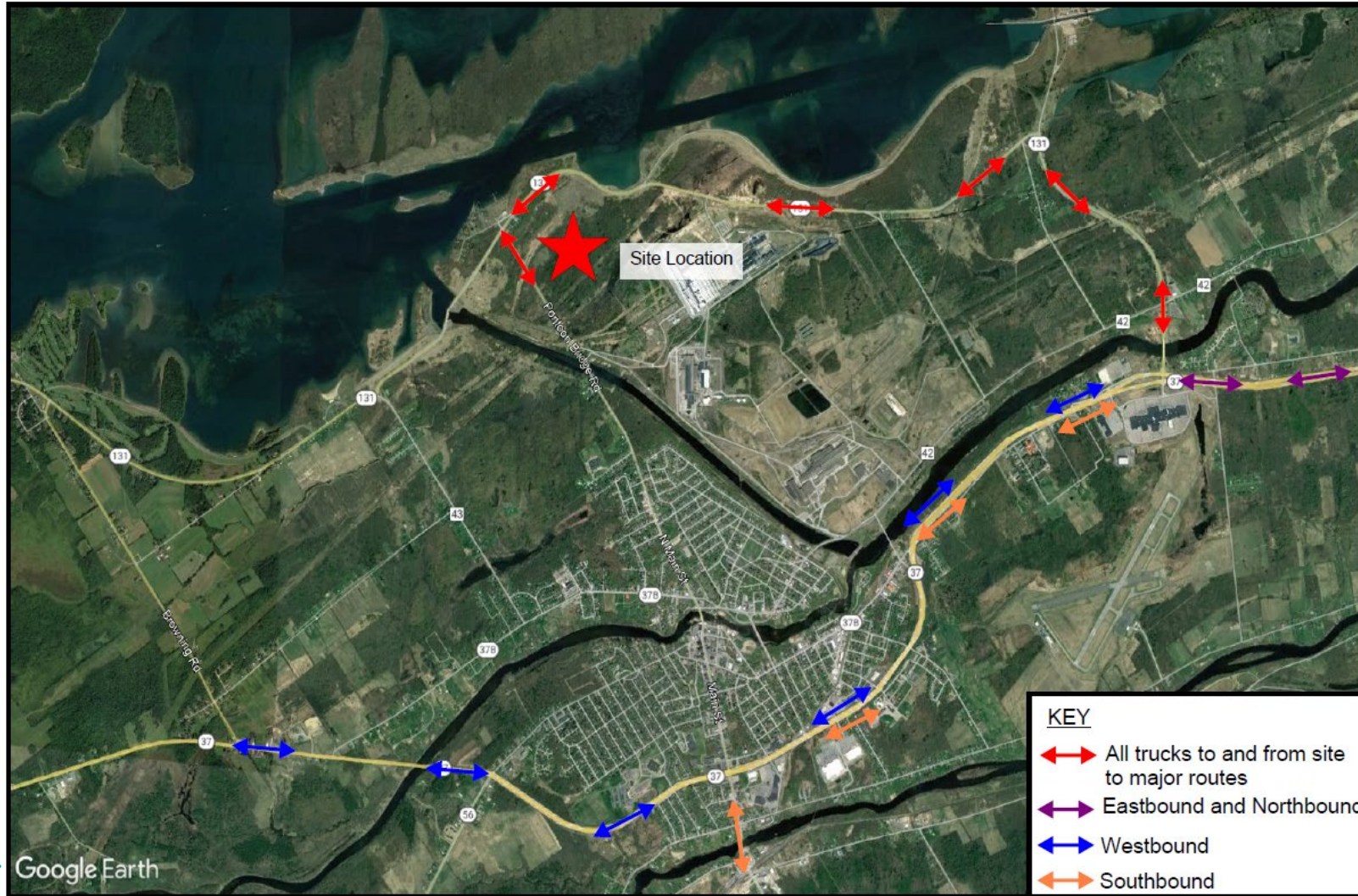
- Capital: ~\$0.5 billion
- Ownership: **100% Air Products**
- Production: **35,000 kg/day** of carbon-free Hydrogen
- Start of production: **2026/27**
- Environmental Impact: **6 million tonnes of CO<sub>2</sub> avoided** (equivalent to 600 million gallons diesel)

*\*All numbers above refer only to the Massena Green Hydrogen Project*

# Massena Green Hydrogen Project



# Truck Routes





# Massena Economic Benefits

## 90 Full-time Jobs

- \$90,000 average salary and benefits

## 350+ Peak Construction Jobs

- 500,000 hours of construction jobs over 3-year period

## \$2 million per year local spend on maintenance

- Plus additional \$5 million during major turnarounds

## \$30 million annual power purchased from NYPA

## \$300 thousand per year of water purchased from the Village of Massena

- For up to 1.25 million gallons of water per day



Thank you  
tell me more

AIR  
PRODUCTS

