

# Chart's Expanded Carbon Capture Offering CHART

February 2, 2021



Cooler By Design.



# **Forward Looking Statements**

Certain statements made in this presentation are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include statements concerning the Company's business plans, including statements regarding completed acquisitions, cost synergies and efficiency savings, objectives, future orders, revenues, margins, earnings or performance, liquidity and cash flow, capital expenditures, business trends, governmental initiatives, including executive orders and other information that is not historical in nature. Forward-looking statements may be identified by terminology such as "may," "will," "should," "could," "expects," "anticipates," "believes," "projects," "forecasts," "outlook," "guidance," "continue," "target," or the negative of such terms or comparable terminology.

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# Chart's Strategic Investment / Partnering Approach

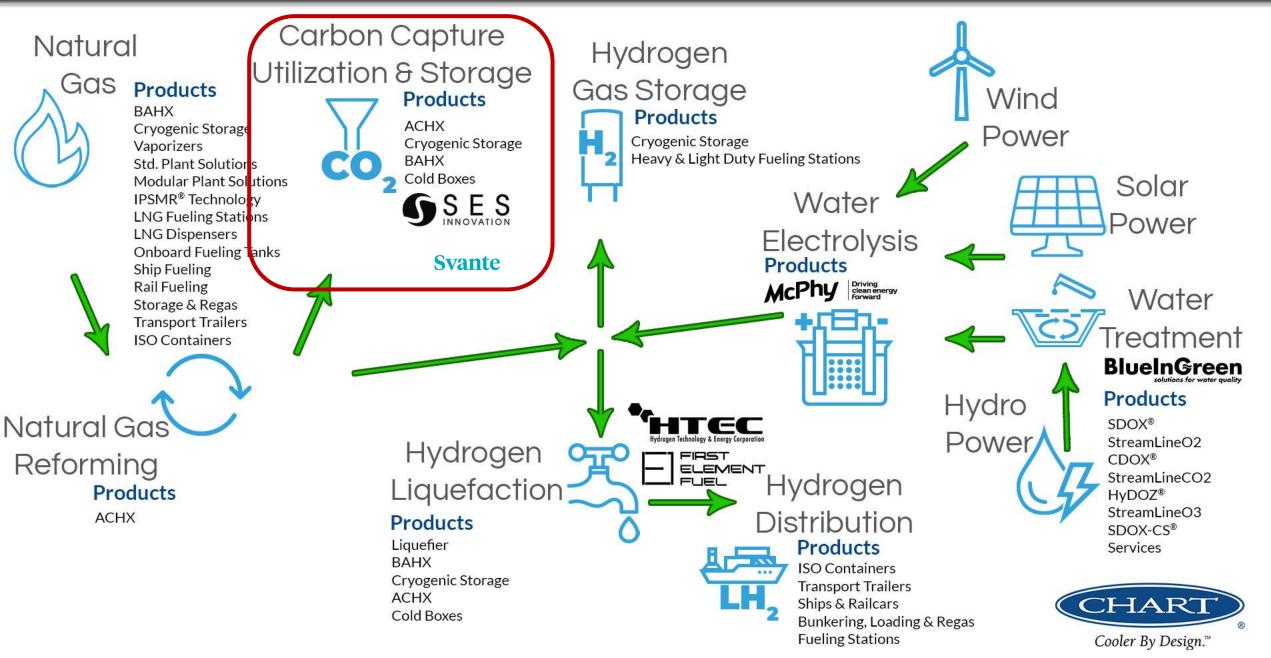
#### Brings access to:

(1) customers and commercial projects that could not be accessed without significant organic investment

(2) geographies that otherwise could not readily be accessed due to lack of product experience in the region, certification requirements, or government funding and relationships.



## **CHART PRODUCTS** For the Clean Nexus of Power, Water, Food & Industrials

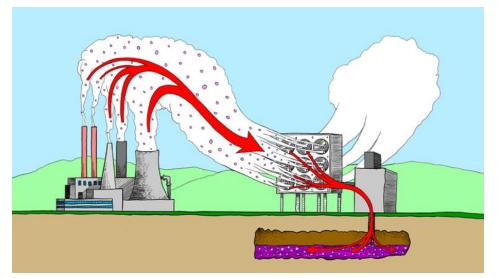


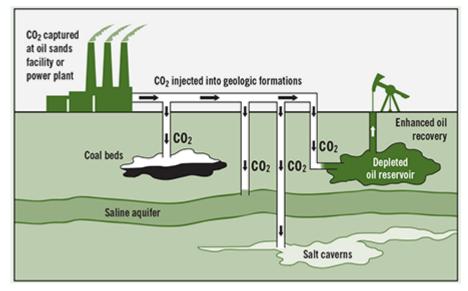


# **Carbon Capture Process**

#### **HOW IS IT CAPTURED?**

Capture technologies allow the separation of carbon dioxide from gases produced in electricity generation and industrial processes by one of three methods: pre-combustion capture, post-combustion capture and oxyfuel combustion. The captured CO2 is liquefied and pumped to pressure prior to entering the pipeline.





#### WHERE DOES IT GO?

- Captured CO2 is injected into a storage pipeline to send the CO2 to underground storage reserves. These are typically depleted oil reserves, coal beds, saline aquifers and salt caverns.
- CO2 is also used in Enhanced Oil Recovery (EOR) as well as fuel manufacturing.
- If the CO2 is high enough quality, it can also be used in the merchant market for food and beverage purposes.



# Types of CO2 Applications We Supply

#### Food & Beverage

- CarboMax tanks for microbrewing and onsite brew pubs
- Food freezing
- Convenience stores and national restaurant chains doing national upgrades



#### **Concrete Curing**

- PM 6000 HP tanks are perfect for the application
- Multiple channels
- Reduces curing time and cost for concrete pouring

#### Vaccine Storage

- Storage equipment at the front end of supply chain
- Work with dry ice
- Utilized in the dry ice mfg equipment, removing us from the chain of liability



#### <u>Cannabis</u>

- Election resulted in additional states legalizing marijuana
- COVID driving growth
- CarboMax 750 works well for CO2 enhanced atmospheric growing



#### <u>Others</u>

- pH control for swimming pools, fitness centers, etc.
- Die cooling
- Dry ice pellets for fire fighting



# Chart's Carbon and Direct Air Capture Capabilities



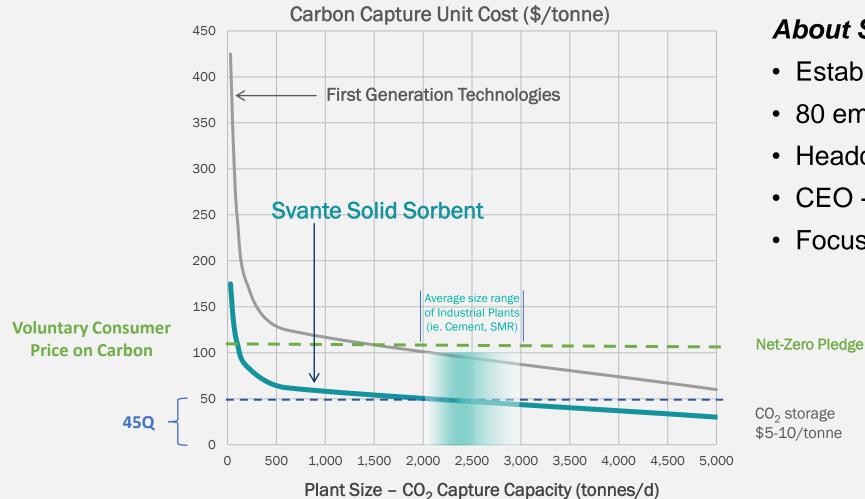
#### Post Combustion CO2 Capture

- Cryogenic process that delivers high purity liquid CO2 ready for transport and use
- Amine process using adsorption to deliver gaseous CO2

#### **Direct Air Capture**

- Removal of CO2 directly from the atmosphere
- Uses air cooled heat exchangers as contactor surface to capture CO2 from air stream
- Air coolers are the most significant part of these projects

# Svante Capture Economics



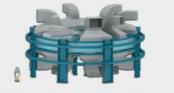
#### About Svante:

- Established in 2007
- 80 employees
- Headquartered in Vancouver, Canada
- CEO Claude Letourneau
- Focus on building a CO<sub>2</sub> marketplace

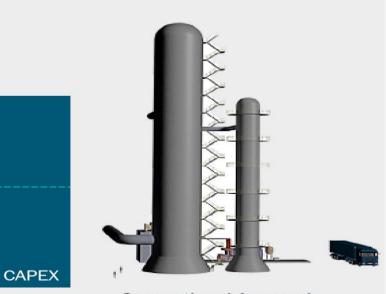
# Svante Has Low Capex Cost...

- Svante's solid sorbent technology is industrial scale, low CAPEX and available today
- Replacing large chemical solvent towers with a single piece of compact equipment, a 50% reduction in capital costs is achieved compared to first generation approaches

CAPEX



Svante Technology



**Conventional Approach** 

### ... Chart and SES Have High Purity and Small Equipment Footprint...

Half of the Capital Costs



Chart's small footprint for air cooled heat exchangers Opportunity to integrate Svante technology with SES CCC process in order to produce a pressured, high-purity  $CO_2$  product stream at low cost.

# Significant Intellectual Property in Chart, SES and Investment in Svante Creates Further Differentiation



82% of Chart's products & solutions have intellectual property associated with them



- 44 SES U.S. issued patents
- 17 SES U.S. patents pending
- Additional 20 patents issued internationally

# **Svante**

- Building a CO<sub>2</sub> Marketplace
- Proprietary Equipment & Manufacturing
- > 130 patents worldwide

Chart equipment can be used in both Svante and SES carbon capture applications:

- SMR systems
- BAHX
- Cold Boxes
- Cryogenic tanks
- VIP
- Instrumentation
- Controls



# Svante Focuses on Three Areas for Industrialization







#### **Natural Gas**

- 13 projects with start ups by 2025
- 6 individual customers

#### SMR Blue Hydrogen

- 5 projects with start ups by 2025
- 5 individual customers

#### **Cement & Lime**

- 9 projects with start ups by 2025
- 5 individual customers

# Expanded CCUS Project Opportunity Set... Now!

- 30 Ton Per Day Canadian Plant at Husky Energy Operating since 2019
- Pipeline of 27 Potential Commercial Projects
- Three projects targeted to be completed by 2024

A compact solution integrated into an industrial environment



**Demonstration Plant** – Industrial natural gas boiler





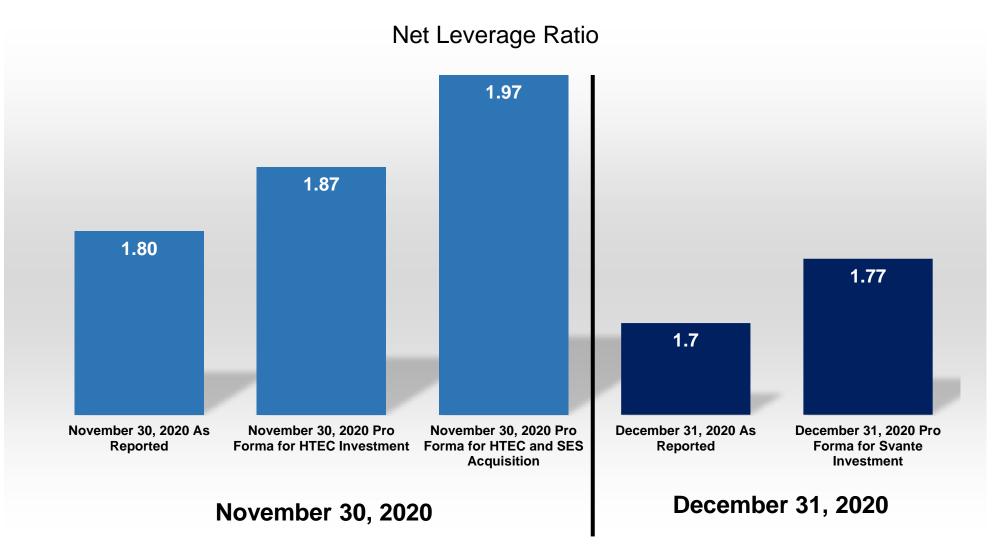
- Canada 30 ton per day (optimization)
- California 25 ton per day (commission 2022)
- Colorado 5,000 TPD (shovel ready end-2023)



# **Commercial MOU Between Chart and Svante**

- Svante Value Added Reseller Relationship with Chart
- Svante Preferred O&M Supplier Program
- Joint Development Agreement with Svante, SES and Chart to develop integrated solution to make high purity CO<sub>2</sub> product (99%+)
- Collaboration for Demonstration Projects

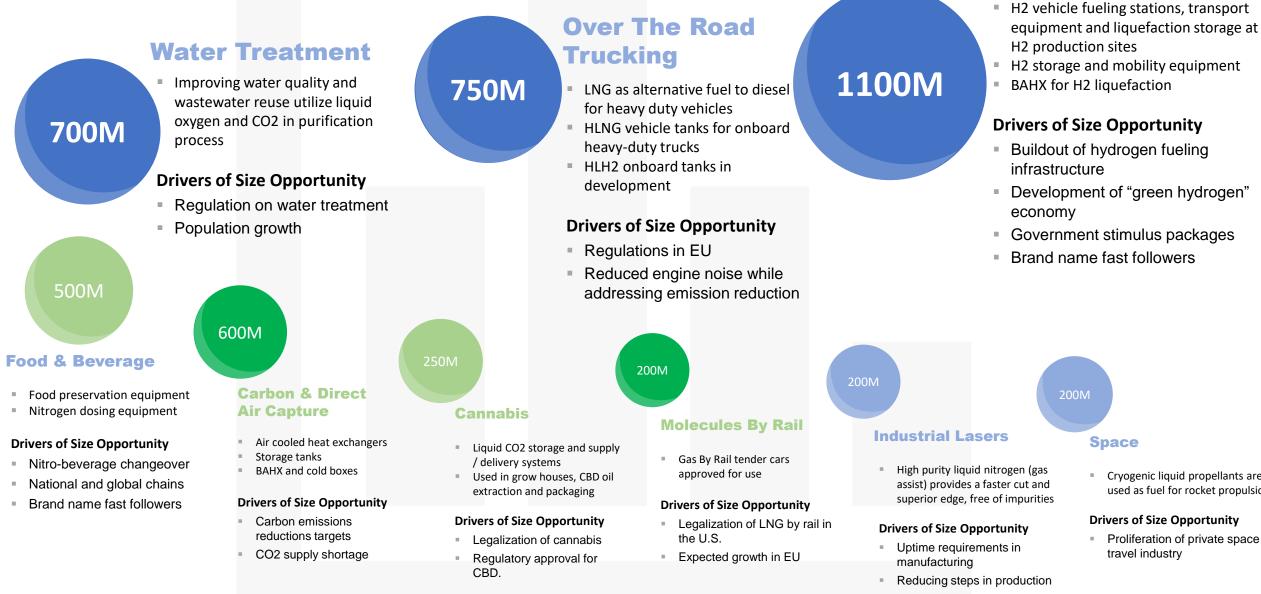
# Chart's Strong Earnings and Cash Generation Continues



HAR

Cooler By Design.

# Chart's Specialty Markets Keep Growing



Cryogenic liquid propellants are

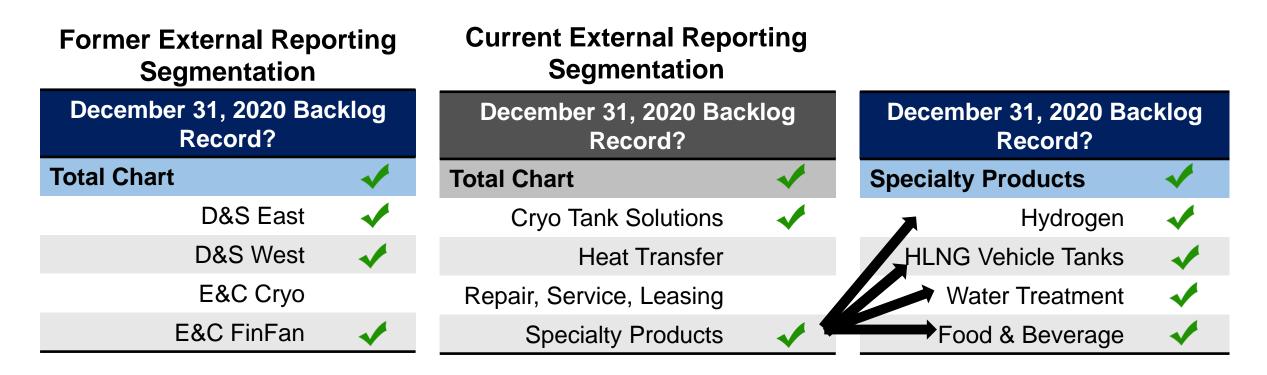
travel industry

used as fuel for rocket propulsion

Hydrogen



# December 31, 2020 Record GTLS Backlog



#### Fourth quarter and full year 2020 results will be discussed on Chart's earnings call on February 18, 2021