

Seek **Together™**

# Dow's Sustainability Goals



**DOW**  
®

## How can we work together to solve today's complex challenges?

It starts with passion and purpose. At Dow, our people use science and collaboration to create what matters most to our customers, society and the planet. Our ambition to be the most innovative, customer-centric, inclusive and sustainable materials science company in the world drives best-in-class performance and a culture where new ideas thrive.



2020 NET SALES

**\$39B**



EMPLOYEES

**~35,700**



MANUFACTURING SITES

**106 sites**



GLOBAL REACH

**31 countries**  
in which Dow manufactures products

Note: All data as of December 31, 2020

# MATERIALS SCIENCE SOLUTIONS TO SUSTAINABLY ADDRESS GLOBAL NEEDS

## SUSTAINABILITY

**1/3** of all food produced is wasted before consumed

**50%** of the growth in consumer packaged goods between 2013-2018 came from sustainability-marketed products



## MIDDLE CLASS GROWTH

Global middle class is expected to reach

**5.5 BILLION**  
by 2030



## DIGITAL TRANSFORMATION

Worldwide spending on digital transformation will reach

**\$2.3 TRILLION**  
by 2023



## URBANIZATION

**2/3** of the world's population is expected to live in urban areas by 2050



Channeling Dow's materials science expertise as we collaborate and innovate with customers and partners to create solutions that positively impact the world

### Packaging

Providing solutions to keep foods fresher and deliver high-performing, durable, lighter-weight and recyclable packaging

### Infrastructure

Enhancing energy efficiency, circularity and durability in building and construction, appliances, adhesives, lubricants, and wire and cable

### Consumer

Meeting consumers' needs for innovative, convenient and more sustainable home and personal care solutions



# ACCELERATING SUSTAINABILITY ACTIONS TO TACKLE CRITICAL CHALLENGES

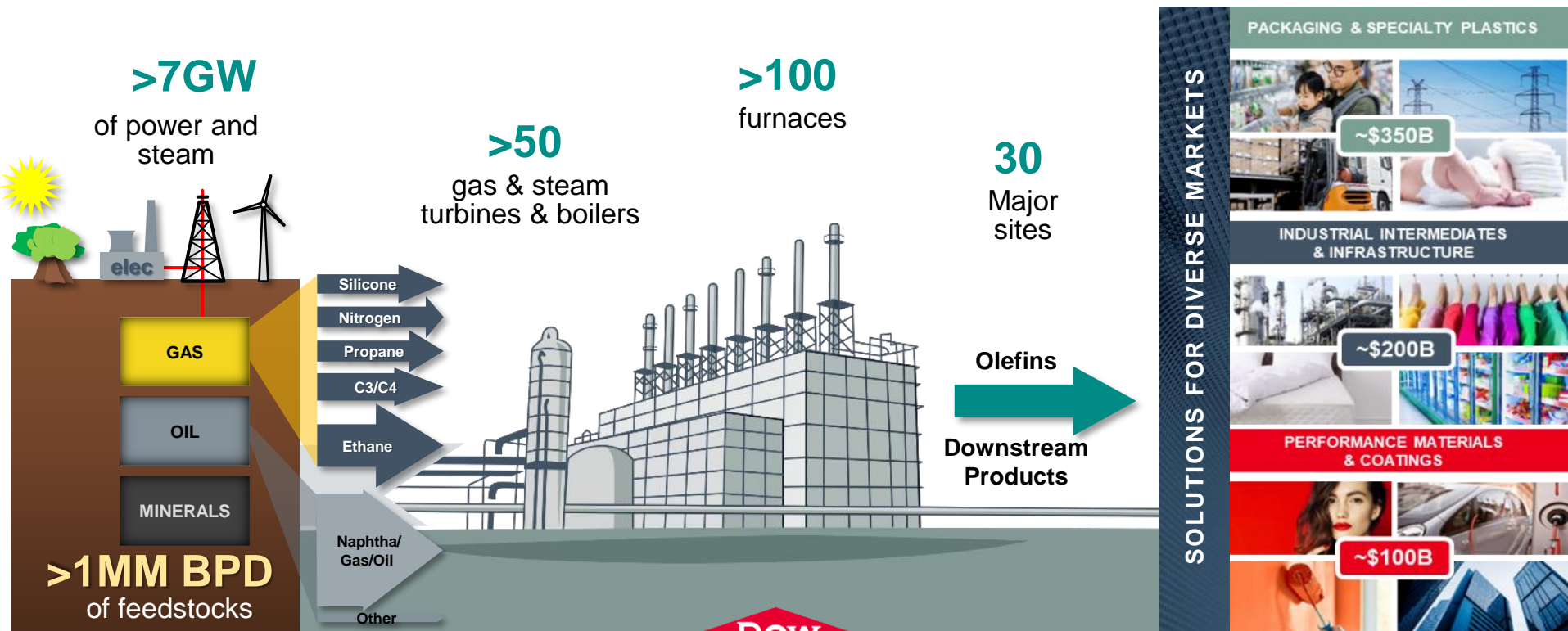




# LEADING THE ENERGY TRANSITION AT SCALE

By 2030, Dow will reduce its net annual carbon emissions by 5 million tons (15%)

By 2050, Dow intends to be carbon neutral (Scopes 1+2+3 plus product benefits)



# DOW'S ACTION PLAN TO ACHIEVE CARBON NEUTRALITY BY 2050



**Optimizing Our  
Facilities and  
Processes**



**Increasing  
Renewables in Our  
Purchased Power  
Mix**



**Evaluating  
Investments in  
Carbon Capture,  
Usage and Storage  
(CCUS)**



**Developing  
Low-Carbon  
Technologies  
for Emission  
Reductions**



**Deploying  
Materials to Help  
Reduce Emissions  
for Customers and  
Industries**



# FUEL, STEAM, POWER & CO<sub>2</sub> INEXTRICABLY LINKED

**MUST CONSIDER EACH FACTOR TO OPTIMIZE**

## Color Key for Graphic

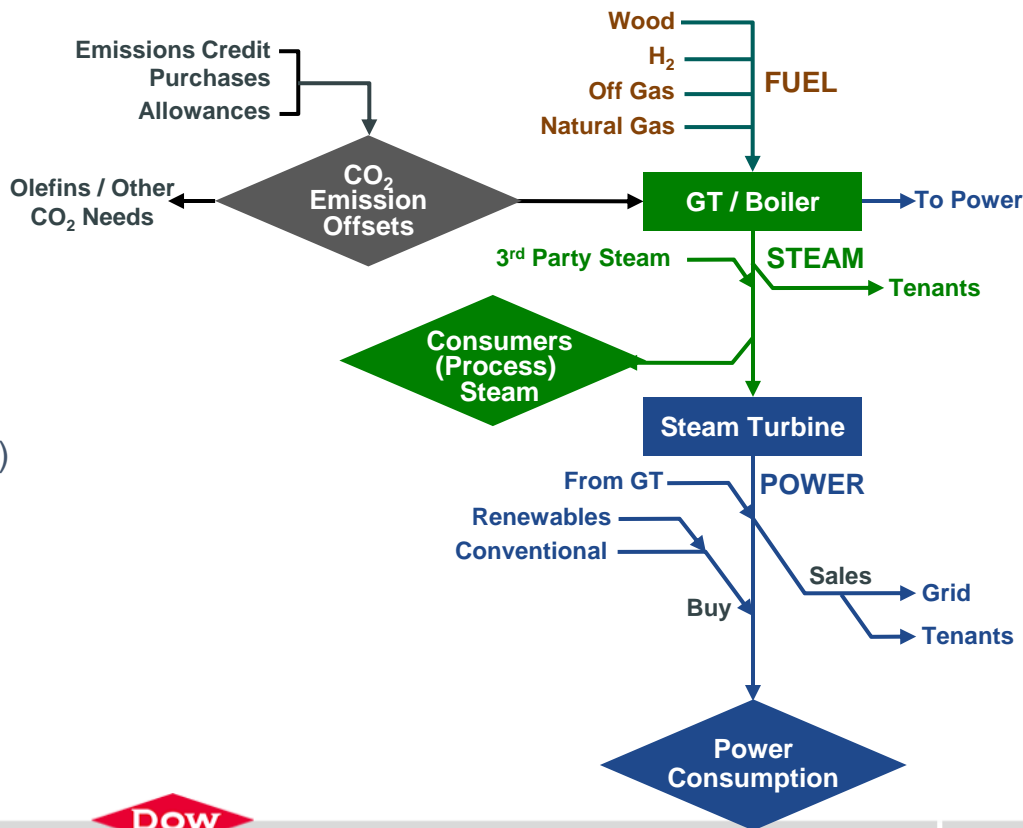
**FUEL** ♦ **STEAM** ♦ **POWER** ♦ **EMISSIONS**

## Traded markets have volatility

Fuels, Power, and Emissions

## Companies have choices

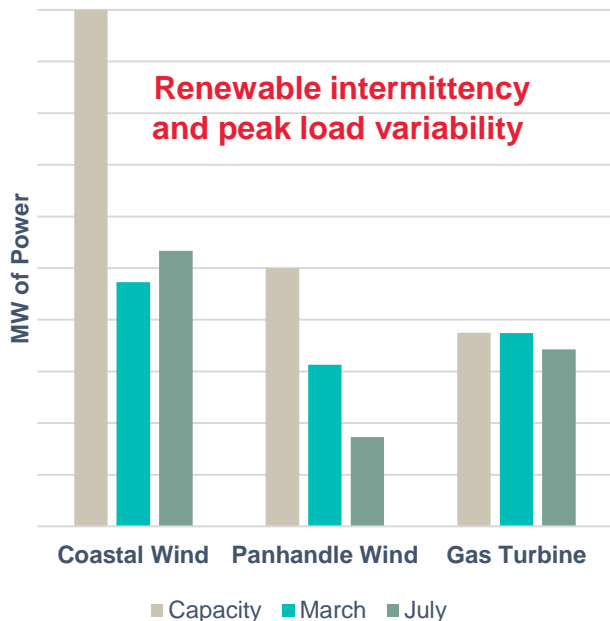
- Operate assets (i.e. gas turbines, boilers)
- Purchase
  - Grid
  - PPA's (Power Purchase Agreements)
  - Third party providers



# TECHNICAL ASPECTS OF GRID DESIGN MATTER TO INDUSTRIALS

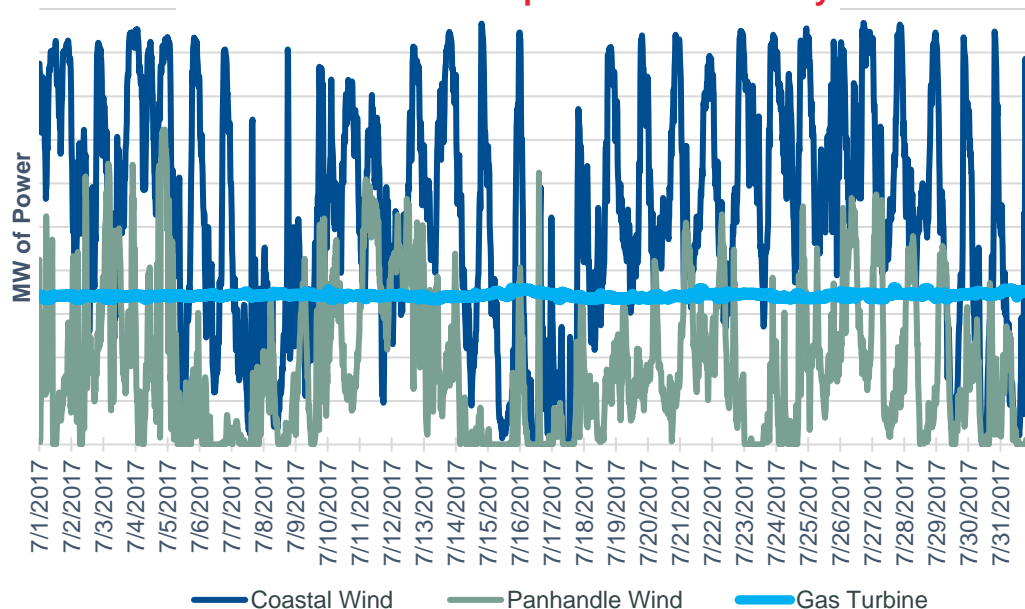
**RENEWABLES + CO-GEN = STEADY POWER**

Key Statistics for Dow Assets in Texas



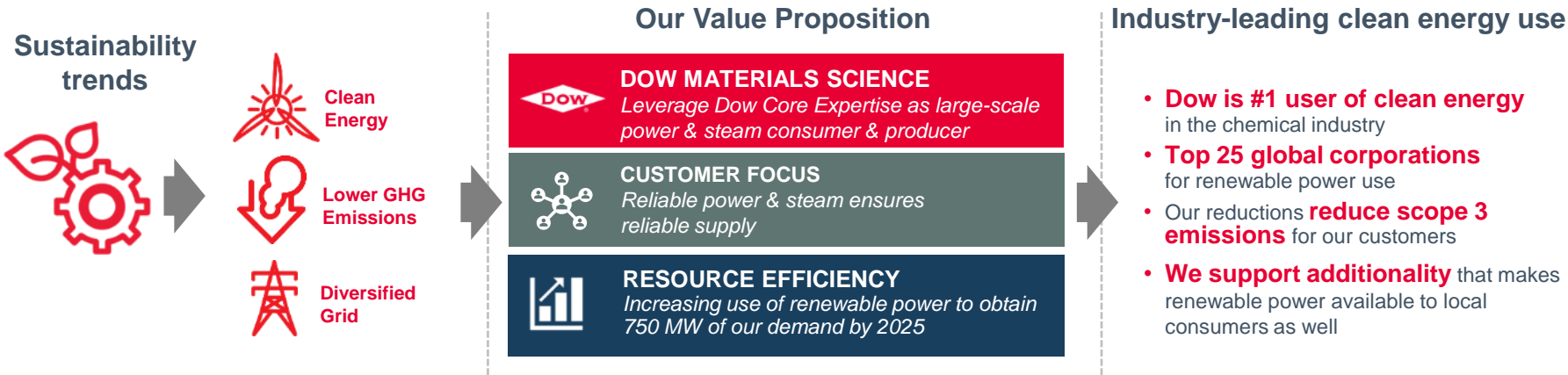
July 2017 Delivered MW to Dow Users in Texas

**Industrial Processes Operate Continuously**





# ADDING MORE RENEWABLES TO OUR PURCHASED POWER MIX



*As we add more clean energy through our purchased power agreements, we lower our emission footprint, become a more sustainable supplier to our customers and often support the growth of renewable power for local consumers.*



**2020** – Solar energy for our silicone site in **Carrollton, KY** through new solar complex



**2020** – Solar energy for **Brazil**, adding to clean energy use through hydropower and biomass

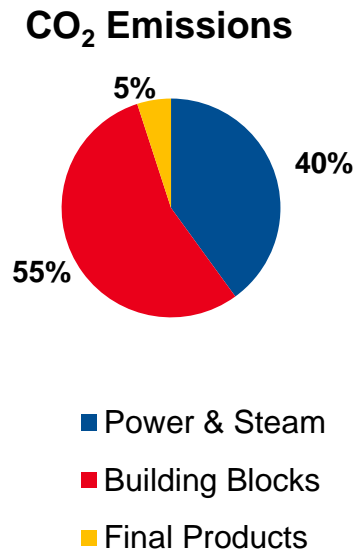


**2019** – Addition of second wind turbine at **Seneffe**, the site of Dow Silicones Belgium, supplying the Dow site and contributing to the grid



# ROAD MAP FOR ZERO CARBON INDUSTRIAL COMPLEX BASED ON H<sub>2</sub>

## Current



CO<sub>2</sub> Emissions – Scope 1&2

## Generation 1

Efficiency Improvements, Renewables, Blue Hydrogen & CCS Infrastructure

- Purchase **renewable power** where balances allow
- Install best-fit **on-purpose H<sub>2</sub> technology** to support pre-combustion de-carbonization **using cracker off-gas** as feedstock
- Install **infrastructure for H<sub>2</sub> distribution and CO<sub>2</sub> export**

## Generation 2

Optimization & Technology Transition

### Further Optimization

- Retrofit **turbines** for 100% H<sub>2</sub> fueling or replace with electrical drivers
- Capture CO<sub>2</sub> from **point sources**
- Optimize **H<sub>2</sub> allocation & production**

## Generation 3+

- Implement **new process technologies** (e-cracking, syngas to olefins, others)
- **Retrofit balance of assets** to maximum H<sub>2</sub> fueling
- Connect to **green H<sub>2</sub> infrastructure**
- **Use CO<sub>2</sub>** and eliminate export needs

**New Process Technologies:**  
CO<sub>2</sub> Reduction to Near Carbon Neutral

2020

2050

**Scope 3: Work with supply chain to reduce, reuse, recycle, and offset emissions**



Thank you

