



GOVERNOR'S **AWARD** PROJECT PRESENTATION

Five Years of Continuous Improvement
CO₂ Reduction



TMH PROFILE

- ▶ **Who:** Toyota Material Handling, Inc.
- ▶ **What:** Manufacturer of forklifts
 - Internal combustion and electric models
- ▶ **When:** Began operations in 1990
- ▶ **Where:** Columbus, IN
- ▶ **How:** 1500+ Associate workforce, 1.5 million sq. ft., 180 acres



TMH Campus



FORKLIFTS MADE IN COLUMBUS, INDIANA



Core IC Cushion Forklift



Core Electric Forklift



Core IC Pneumatic Forklift

MAJOR OPERATIONS



Machining



Welding



Paint



Assembly



Maintenance

PATH TO ZERO CO₂ EMISSIONS

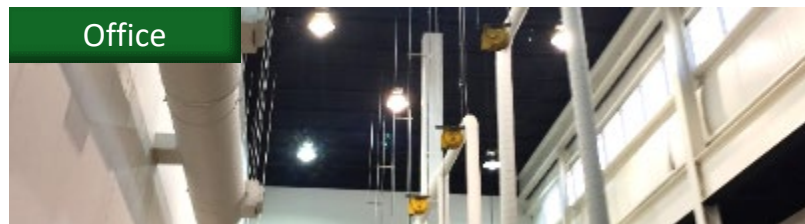
- ▶ Toyota Industries Corporation (TICO) Group 2050 Vision
 - Corporate objective
 - Globally challenging for zero CO₂ society by 2050
- ▶ 7th Environmental Action Plan
 - 5 year strategy aimed at individual environmental performance targets
- ▶ TMH Annual Operating Plan (AOP)
 - Our executive and management teams lead us in the pursuit of environmental excellence by putting CO₂ reduction as a top company objective and providing us the necessary resources for achieving our targets.



CO₂ REDUCTION PROJECTS

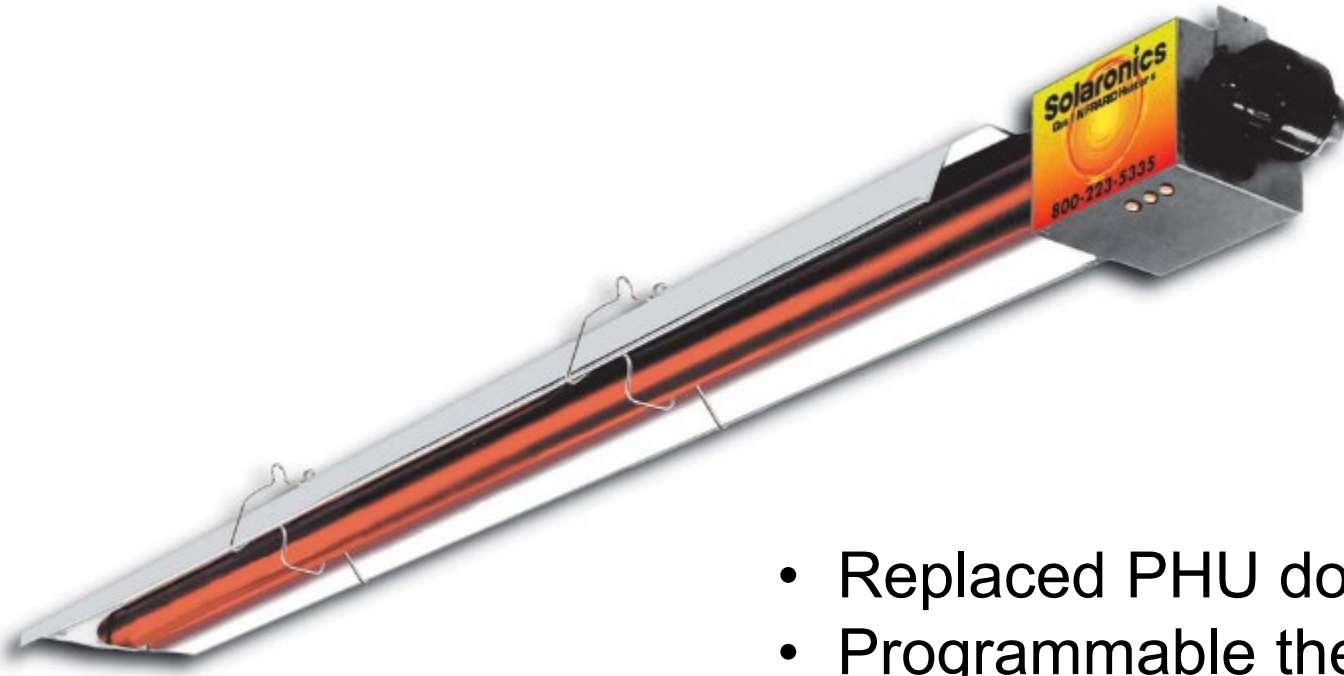
- ▶ Conversion to LED Lighting
- ▶ Radiant Dock Heaters
- ▶ Air Leak Detection and Repair
- ▶ Air Compressor Efficiency Project
- ▶ HVAC Energy Reductions through Weld Fume Collection
- ▶ Investment in Wind Energy Certificates
- ▶ Power and Gas Monitoring Systems

CONVERSION TO LED LIGHTING



- ▶ Converted metal halide high bay lighting fixtures to LED
- ▶ Reduced power requirements from 1100W to 500W
- ▶ 1.2 million kWh annual savings
- ▶ Savings of ~ 200 t-CO₂ /year
- ▶ Occupancy detection system

RADIANT DOCK HEATERS



- Replaced PHU dock heaters with radiant heaters
- Programmable thermostats
- Savings of ~ 188 t-CO₂

AIR LEAK DETECTION



- ▶ Invested in sophisticated air leak detection equipment
- ▶ Devoted manpower to air leak detection and repair
- ▶ Savings of ~ 350 t-CO₂ /year

Images from fluke.com



AIR COMPRESSOR EFFICIENCY PROJECT

- ▶ Variable speed drive compressors
- ▶ Increased storage tank capacity
- ▶ Integrated all air supply lines into one single system to allow for more efficiency



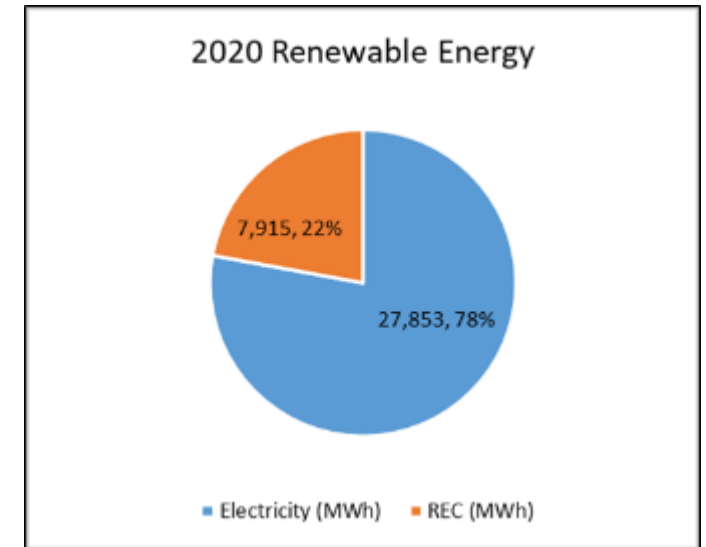
WELD FUME COLLECTION

- ▶ Installation of 18 weld fume collection systems
- ▶ Provides a healthy, more efficient, and effective work environment for our Associates
- ▶ Reduced air exchanges by approx. 1.5M Cubic Feet per Minute (CFM)
- ▶ Savings of ~ 370 metric tons CO₂/year



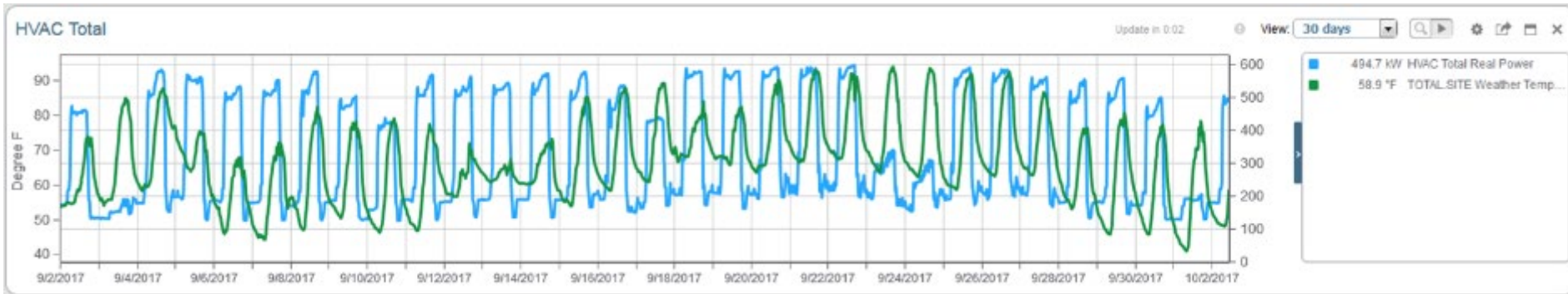
WIND ENERGY CERTIFICATES

- ▶ Investigated solar energy opportunities.
- ▶ In 2019, we partnered with Hoosier Energy to purchase Wind Energy Certificates.
- ▶ Currently, purchasing ~ 22% wind energy.



POWER & GAS MONITORING

- Power monitoring system
- Natural gas monitoring system
- Allow us to identify energy savings opportunities and give us evidence for investment in innovative technologies
- Area of focus for future improvement opportunities

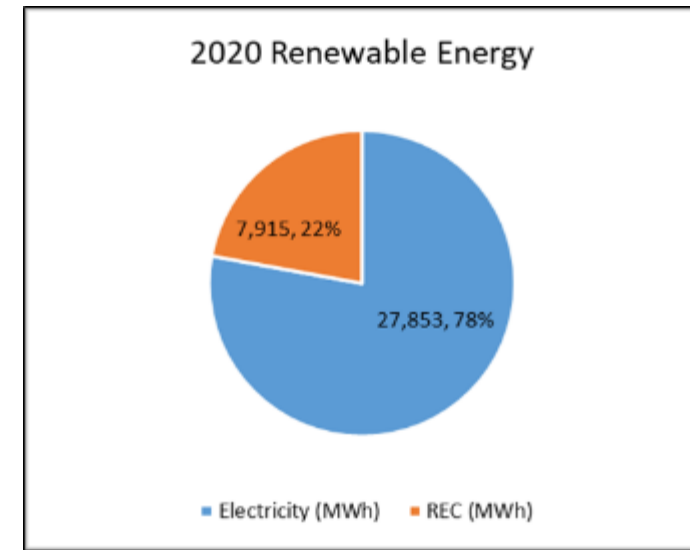
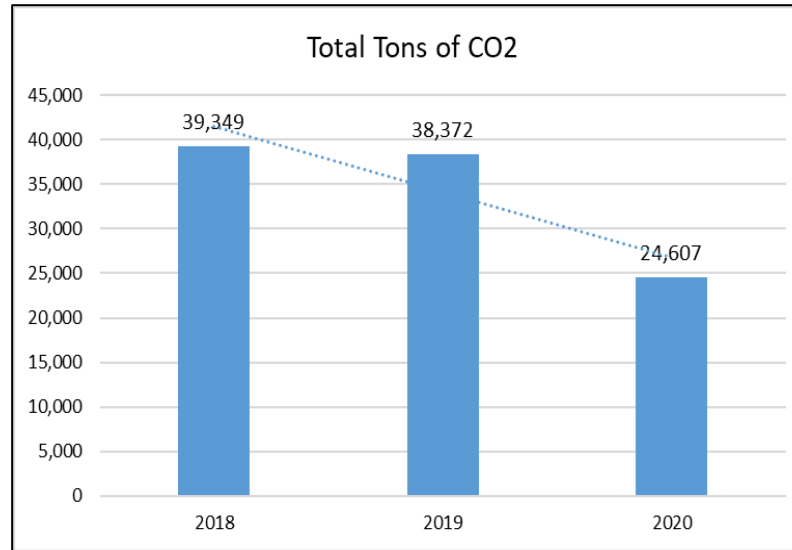
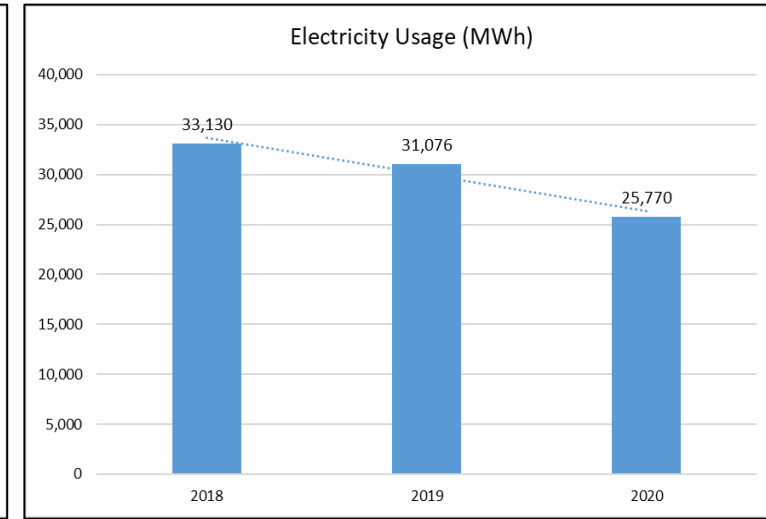
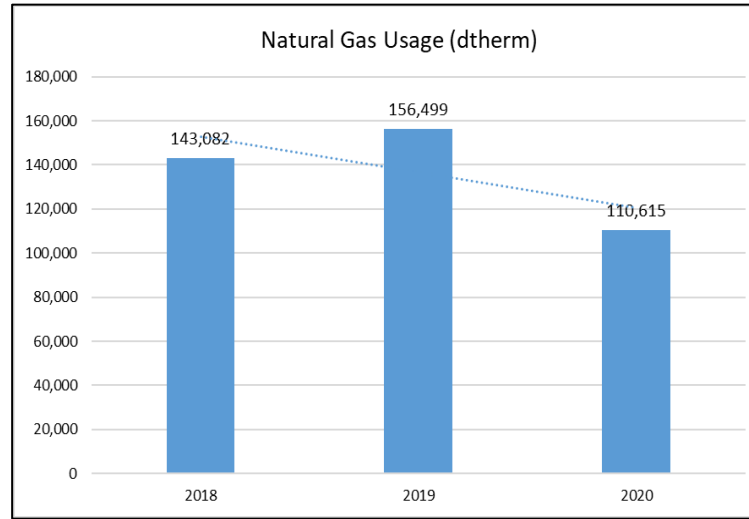


ASSOCIATE ENGAGEMENT

- ▶ Energy Conservation Tips (weekly focus items)
 - Air Leak Detection
 - Door closures in cold months
 - Lights, fans, & other equipment shut off during breaks/end of day
- ▶ Associate Safety Committee Audits

IMPACT

- ▶ Natural Gas Consumption
 - 23% overall reduction
- ▶ Electricity Consumption
 - 22% overall reduction
- ▶ CO₂ Emissions
 - 37% overall reduction
- ▶ Wind Energy Investment 2020 – 22%
 - Partnership with Hoosier Energy



FUTURE ENDEAVORS

- ▶ Third party energy audit
- ▶ Continue to learn and use data from power and gas monitoring systems to find new energy reduction opportunities
- ▶ Expand CO₂ tracking past scope 2 emissions, i.e. outside of gas/electric utility tracking



MATERIAL HANDLING

Thank you