

**NAVISTAR**



## Best Practices in Energy Reduction & Efficiency



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# Navistar, Inc. A Member of TRATON GROUP



**History**

**1902-1985: International Harvester**  
 The merger of McCormick Harvesting Machine Company and the Deering Harvester Company in 1902 resulted in the formation of the International Harvester Company (IH)



**Company**

NEWS RELEASES

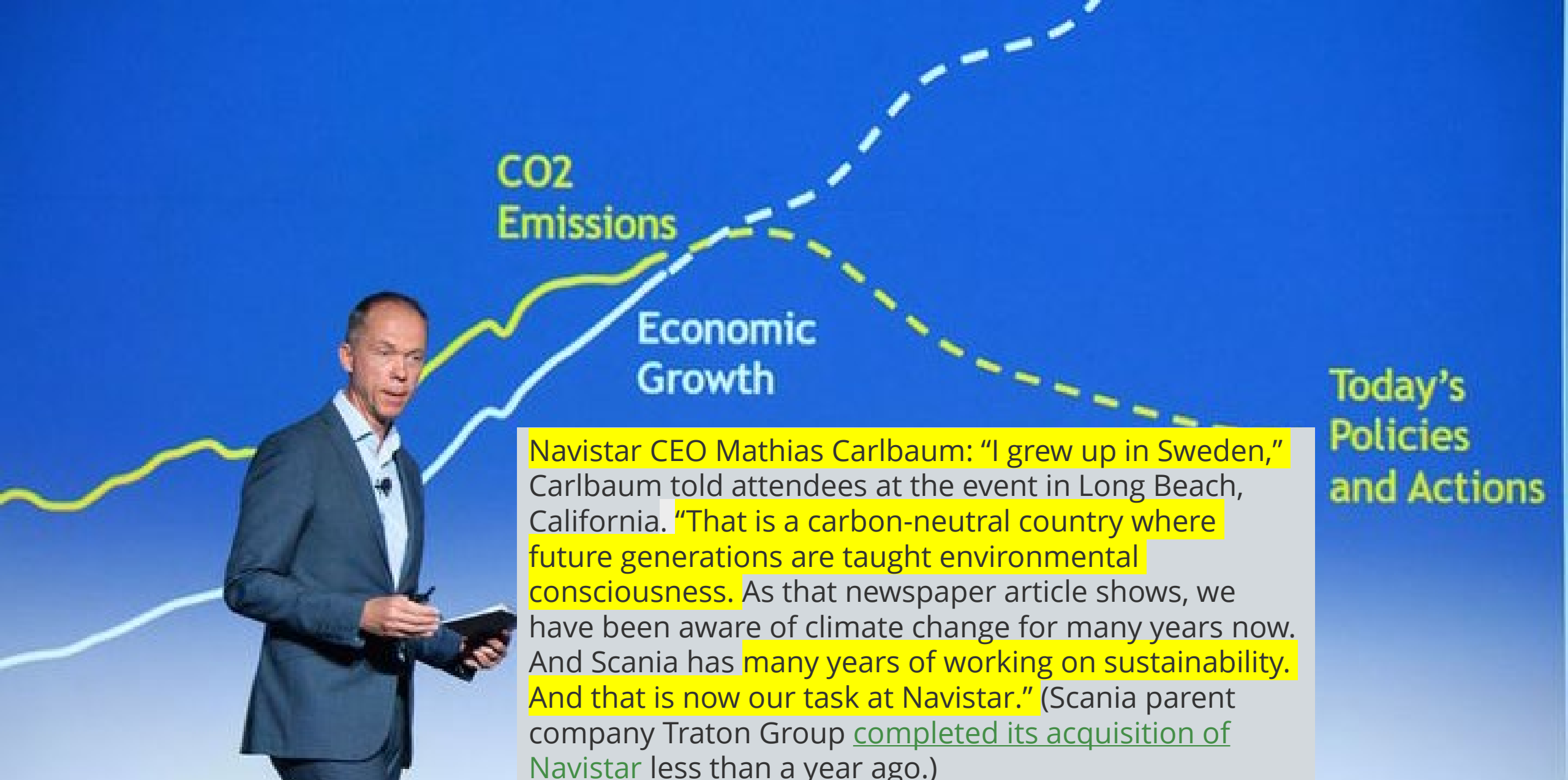
**MUNICH, July 1, 2021 /PRNewswire/ --TRATON GROUP Successfully Completes Navistar Merger and Ushers in a New Era**

- US commercial vehicle manufacturer Navistar becomes part of the TRATON GROUP following successful closing
- The TRATON GROUP now holds all Navistar common shares
- Navistar is to be delisted and deregistered with the SEC during July 2021

# Things That Changed (Accelerated)



- ◆ Completed construction and Startup of new San Antonio, Texas Truck Plant
- ◆ Many new European influences
- ◆ New faces, Executives, changes in personnel
- ◆ Consideration of VW guiding principles
- ◆ Best Practices if not US Law
- ◆ One U.S. perspective is that Climate Change is debatable and effects, if any, are well into future.
- ◆ Merger affect on Sustainability
- ◆ Europe Long-term vision: a climate-neutral EU by 2050
- ◆ EU countries have set binding emission targets
- ◆ VW is world's largest automaker



Navistar CEO Mathias Carlbaum: "I grew up in Sweden," Carlbaum told attendees at the event in Long Beach, California. "That is a carbon-neutral country where future generations are taught environmental consciousness. As that newspaper article shows, we have been aware of climate change for many years now. And Scania has many years of working on sustainability. And that is now our task at Navistar." (Scania parent company Traton Group completed its acquisition of Navistar less than a year ago.)

03 04

# Success and Barriers



# Things That Work: Energy Efficiency & Partners

**ENERGY STAR** Focus on Energy Efficiency in Motor Vehicle Manufacturing  
“motor vehicle focus” is a partnership between EPA’s ENERGY STAR program and U.S. motor vehicle producers to improve energy efficiency.

ENERGY STAR certified products help you save energy.



## ENERGY STAR

### ABOUT

- SEARCH
- Find Products
- Save at Home
- New Homes
- Commercial Buildings

### FOR PARTNERS

[Industrial Plants>>>> Home » Industrial Energy Management](#)



# ENERGY STAR Focus on Energy Efficiency in Manufacturing

[https://www.energystar.gov/industrial\\_plants/measure-track-and-benchmark/energy-star-energy-8](https://www.energystar.gov/industrial_plants/measure-track-and-benchmark/energy-star-energy-8)

## Plant energy performance indicators (EPIs)

### Industrial Plants

- Industrial Partnership
- Plant Certification
- Challenge for Industry
- Industries in Focus
  - Energy Guides
  - Industrial Insights
  - Aerospace & Defense
  - Aluminum Casting
  - Asphalt Pavement Production
  - Bakeries
  - Cement manufacturing

### Treasure Hunt

- Corn refining
- Dairy processing
- Distilled spirits production
- Fruit and Vegetable Processing
- Glass manufacturing
- Iron and steel manufacturing
- Fertilizer manufacturing
- Metalcasting
- Motor vehicle manufacturing
- Petrochemical manufacturing
- Petroleum refining
- Pharmaceutical manufacturing
- Printing
- Pulp and paper manufacturing
- Ready mix concrete manufacturing

### Participating organizations – Motor Vehicle Focus group:

- *Ford Motor Company\*\**
- *General Motors Corporation\*\**
- *Honda North America Inc.\**
- *International Truck and Engine Corporation\**
- *Mitsubishi Motors North America*
- *Nissan North America\*\**
- *Stellantis\**
- *Subaru of Indiana Automotive, Inc.\**
- *Toyota Motor Manufacturing North America\*\**
- *Volvo Trucks*

\* denotes ENERGY STAR Partners

\*\* denotes Partner of the Year awardees

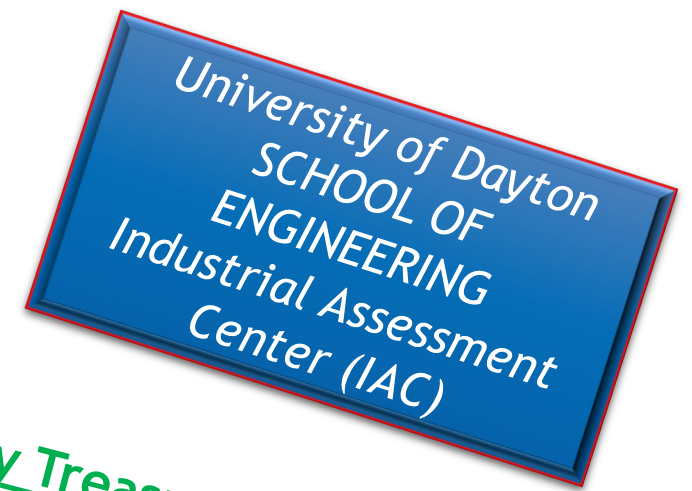
# Things That Work: Energy Efficiency & Partners



# Things That Work: Energy Efficiency & Partners

**U.S. Department of Energy (DOE)** Focus on 'Better Buildings, Better Plants'

Voluntary partnership between U.S.DOE and industrial partners to improve energy efficiency.



**Energy Treasure Hunt Exchange Toolkit**  
**BETTER BUILDINGS, BETTER PLANTS**

INPLTs are multi-day, hands-on workshops held at Better Plants partner facilities, train participants to identify, implement, and replicate energy-saving projects.

## **IN-PLANT TRAININGS (INPLTs)**

DOE hosted over 120 INPLTs with over 2,160 participants, helping to identify over \$41 million dollars in energy cost savings opportunities, (Pre-Pandemic)

## **BETTER BUILDINGS PROGRAMS & PARTNERS**





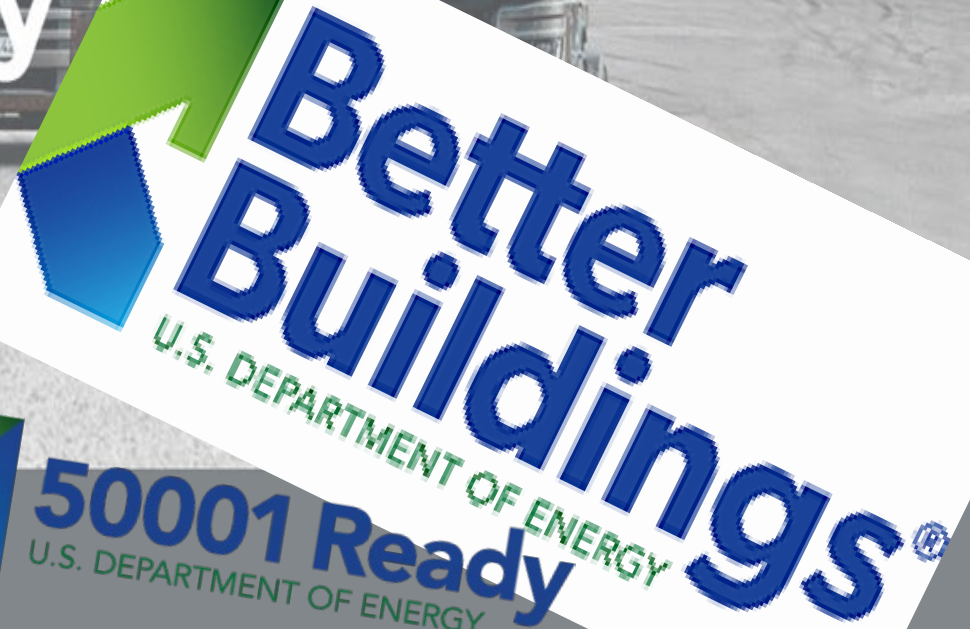
SCIENCE  
BASED  
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

# Company GOALS



**50001 Ready**  
U.S. DEPARTMENT OF ENERGY





# ACCELERATE THE **IMPACT**

SUSTAINABILITY REPORT 2021

**NAVISTAR**

# Things That Worked (Accelerated)

- ◆ Navistar long managed GHG emissions directly via energy use, with significant reductions. Energy efficiency is a prime GHG and Cost reduction method.
- ◆ Established Scope 3 inventory in 2022, forward.
- ◆ Science-Based Target Initiative, (SBTi) goal-setting process towards carbon neutrality
- ◆ CEO discusses Navistar’s carbon neutral future - Scope 1, 2, and 3
- ◆ 8 sites participating in DOE 50001 ready training, many new to ISO.
- ◆ Sustainability Reporting has many new contributions, actionable initiatives not previously highlighted
- ◆ ESG - Changing the “Talk” Sustainability everyday
  - ◆ Drives ideas and projects once not ‘cost effective’



# Things That Worked (Accelerated)

- ◆ Training & Communications
- ◆ Energy Treasure Hunts
- ◆ Off-shift walks = Quiet, Dark, Still. Buildings consume energy, with or without activity.
- ◆ Targeted areas or initiatives - Lighting, controls, air leaks, air pressure setting(s), Turn off
- ◆ Cost reductions - review and understand your utility invoices
- ◆ Removing older fixtures or unused equipment (vampire energy)

“Vampire energy consumption can account for as much as 40 percent of a building’s energy use and associated monthly electricity bill.” - **WIRED**



# Things That Worked

## Site Locations:

- ◆ Lean Manufacturing
- ◆ Demand Response Programs >>>
- ◆ Utility Rebate Incentives
- ◆ Load Ratio monitoring off-shifts
- ◆ Pandemic - Baseline off-shifts
- ◆ Treasure Hunts
- ◆ DOE IN-PLANTS
  - ◆ SME provided for focused areas - TH, Compressed Air, Motors and Fans, others

## Corporate Programs:

- ◆ Goals -DOE Better Plants Program
- ◆ DR Programs to Corp. Purchasing
- ◆ ISO 50001 ready training
- ◆ Operational efficiency
- ◆ Shadow the Leader
- ◆ External requests
- ◆ **\*\*Recommend an ‘Energy Fund’**



# Barriers or Delays to Greater Success

- ◆ **Focus on Supply (Buy) and not Demand (Use) side energy.**
- ◆ **Perceived Cost of energy efficiency. ROI? Good investment?**
- ◆ **Energy is not the top controllable spend in your business.**
- ◆ **Historically energy reliability, not efficiency, a focus of Operations >> Safety, Quality, Production...**
- ◆ **Lack of resources and tools for energy management**
  - ◆ Dedicated Energy Managers, modern energy or building management systems, sub-metering, SEUs
- ◆ **\$\$\$Budgets, Capital, Expense - ROI and production needs**
  - ◆ Our job to communicate the business case

# Barriers or Delays to Greater Success

- ◆ **Absence of U.S. including negative climate change potential effects as near-term or immediate concerns**
  - Supply chain interruptions, frequent extreme weather events, wildfires, water crisis locally, community & employees well being, cost of carbon, utility grid
- ◆ **USA Electric Grid!**
  - ◆ Estimated if 100% electric vehicle conversion, =37% carbon reduction from use of product.
  - ◆ Electric grid is majority non-renewable. Estimated average 20% Renewables, 39% fossil-free adding nuclear.
  - ◆ Renewable energy portfolio standards, not standard; state-to-state, what's renewable, incentives
- ◆ **Non-Technical declarations (Politics!)**
  - ◆ Ohio declares natural gas a renewable fuel, “green energy”



# Thank You

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[Terri.Sexton@Navistar.com](mailto:Terri.Sexton@Navistar.com)



# Corporate Sustainability Best Practices

*Honda Development and Manufacturing of America*

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Tuesday, February 28 - 10:45-11:45am

**Kailynn Zook** – Green Factory/Environmental Leader – East Liberty, OH

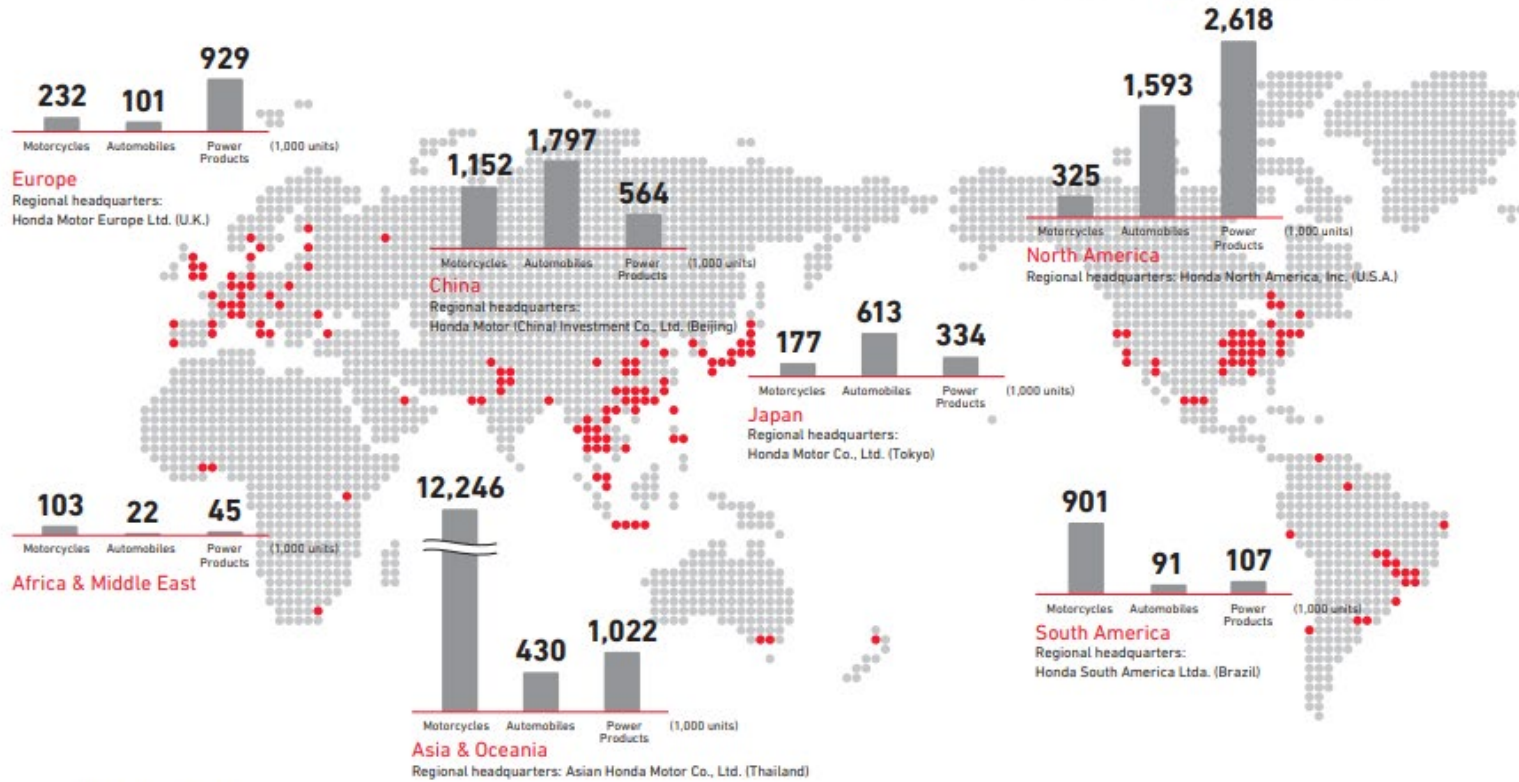
**Lisa Majchrzak** – Environmental Performance Coordinator – Marysville, OH

# Overview of Honda

## Overview of Honda

### Unit Sales and Principal Operation Bases

Joy of mobility to **25.4 million** people transcending national borders



Company name: Honda Motor Co., Ltd.

Established: September 1948

Director, President and Representative Executive Officer Toshihiro Mibe

Capital: 86,067 million yen (as of March 31, 2021)

\*The graphs show unit sales (retail) of motorcycles, automobiles and power products (in units of 1,000) for FY2021. (April 2020 to March 2021).

The symbol ● represents the approximate locations of Honda Group companies.

# Honda's History in Ohio

ESTABLISHED IN 1881  
If It's for the Good of  
Marysville and Union  
County, We're for It!

**Marysville Journal-Tribune** weather

128th Year of Publication Vol. 101, No. 26 MARYSVILLE, OHIO 43040 - TUESDAY, OCTOBER 11, 1977 Single Copy 15 Cents

## Honda To Build Near Marysville

...A new chapter in the U.S. auto industry began today as a gray 1980 Civic sedan became the first mass-production car manufactured at the new East Liberty auto plant of Honda of America MFG., (HAMA). Although the East Liberty plant will manufacture only a few Civic sedans during the remaining five days of production in 1980, the plant will build about 65,000 cars in 1981 as production rises during the year. A second shift will be added in the spring, and full production of 800 cars a day will be reached by the end of 1982. The plant will produce 100,000 cars, bringing total U.S. auto production in Ohio to 100,000 Accord and Civic.

The start of mass production at the East Liberty auto plant has been much anticipated by Honda dealers whose customers have made the Honda Civic one of the best-selling cars in the U.S. "I'm glad to see the start of production at the East Liberty plant," said [Name], president of Honda of America MFG., Inc. "With additional Civic production at East Liberty, HAMA will be able to supply Honda dealers and their customers with more quality cars in even increased numbers."

By January next figure is expected to be 1,000, and by January of 1981 the number is projected to be 5,000.

"Thanks to the teamwork of HAMA executives, local and state government officials, local contractors and the building trades construction groups, the East Liberty Auto Plant was able to begin mass production only 25 months after ground breaking in March, 1980," commented Mikoyuki Yoshida, president of Honda of America MFG.

"We are especially appreciative of the close cooperation we have enjoyed with the Governor's office, state agencies, the state legislature and our local government officials who have been very helpful during the planning and development process for the East Liberty plant," Yoshida added.

Civic sedan sales will continue to be produced at the Marysville auto plant as they have been since 1980. The East Liberty and Marysville auto plants will share the super supplier base. East Civic production is approximately 11.8 million units a year.

Article from October 11, 1977

UNITED WAY  
It Helps out the Best  
in an act of...

**Marysville Journal-Tribune** weather

117th Year of Publication Vol. 151, No. 74 MARYSVILLE, OHIO 43040 - MONDAY, DECEMBER 18, 1989 Single Copy 25 Cents

## Honda Begins Mass Production At New East Liberty Auto Plant

A new chapter in the U.S. auto industry began today as a gray 1980 Civic sedan became the first mass-production car manufactured at the new East Liberty auto plant of Honda of America MFG., (HAMA). Although the East Liberty plant will manufacture only a few Civic sedans during the remaining five days of production in 1980, the plant will build about 65,000 cars in 1981 as production rises during the year. A second shift will be added in the spring, and full production of 800 cars a day will be reached by the end of 1982. The plant will produce 100,000 cars, bringing total U.S. auto production in Ohio to 100,000 Accord and Civic.

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Article from December 18, 1989



1979-2009  
Marysville  
Motorcycle Plant



1982 Marysville  
Auto Plant



1985 Anna Engine  
Plant

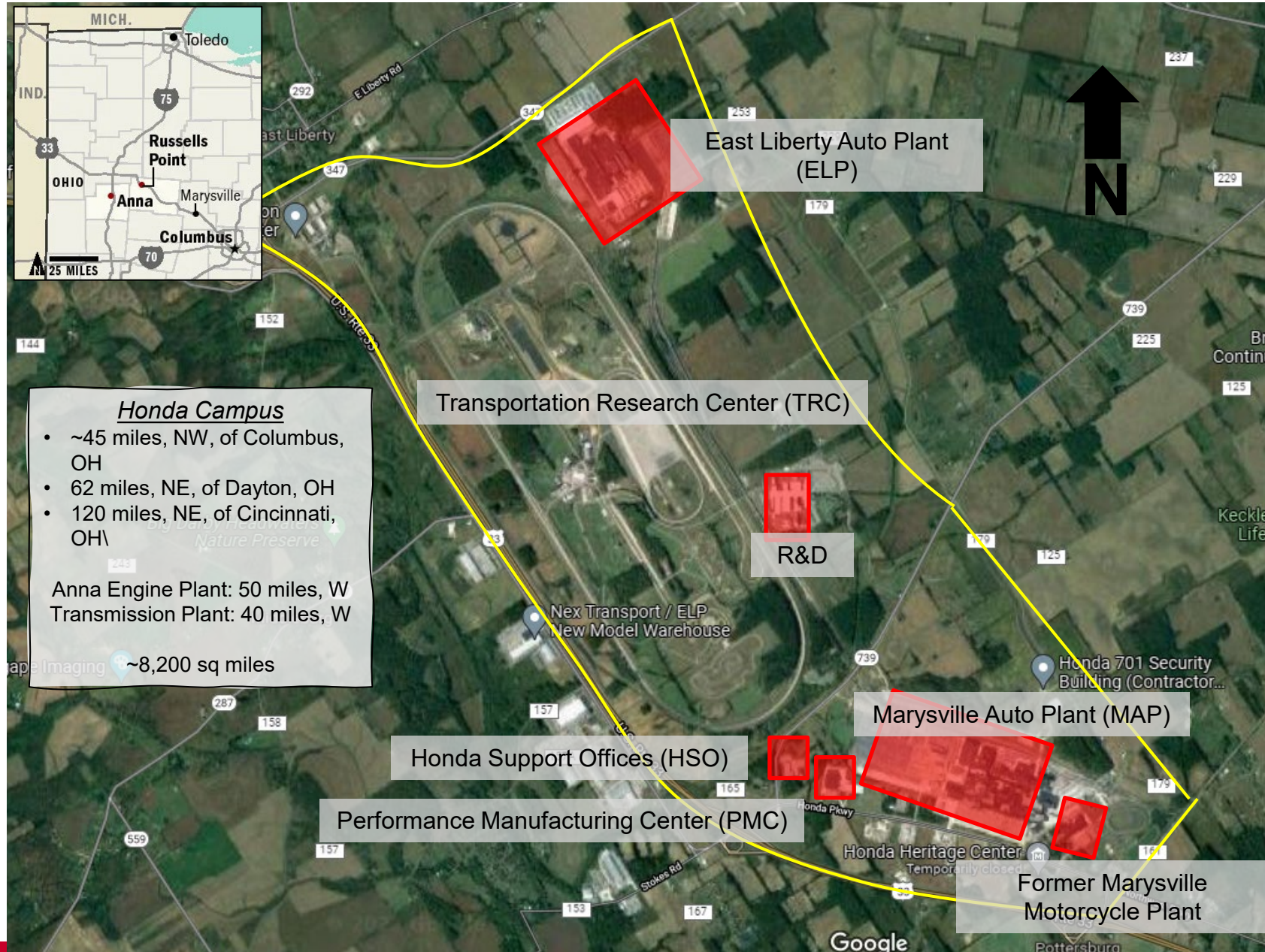


1989 East Liberty Plant



2016 Performance  
Manufacturing Center (NSX)

# Where are we located?



# Marysville Auto Plant (MAP)

**HONDA**



*Honda Accord*



*Honda Accord Hybrid*



*Acura Integra*



*Acura TLX*



*Acura TLX Type S*

|                    |   |
|--------------------|---|
| Location           | Marysville, Ohio  |
| Started production | November 1982   |
| Plant size         | 4.4 million sq. ft.   |
| Capital investment | \$5.4 billion   |
| Employment         | 3,500 associates  |
| Annual capacity    | 440,000 vehicles  |
| Products           | Honda Accord<br>Honda Accord Hybrid<br>Acura Integra<br>Acura TLX<br>Acura TLX Type S |



**HONDA**  
The Power of Dreams



# East Liberty Auto Plant (ELP)

**HONDA**



*Acura MDX*



*Acura MDX Type S*



*Acura RDX*



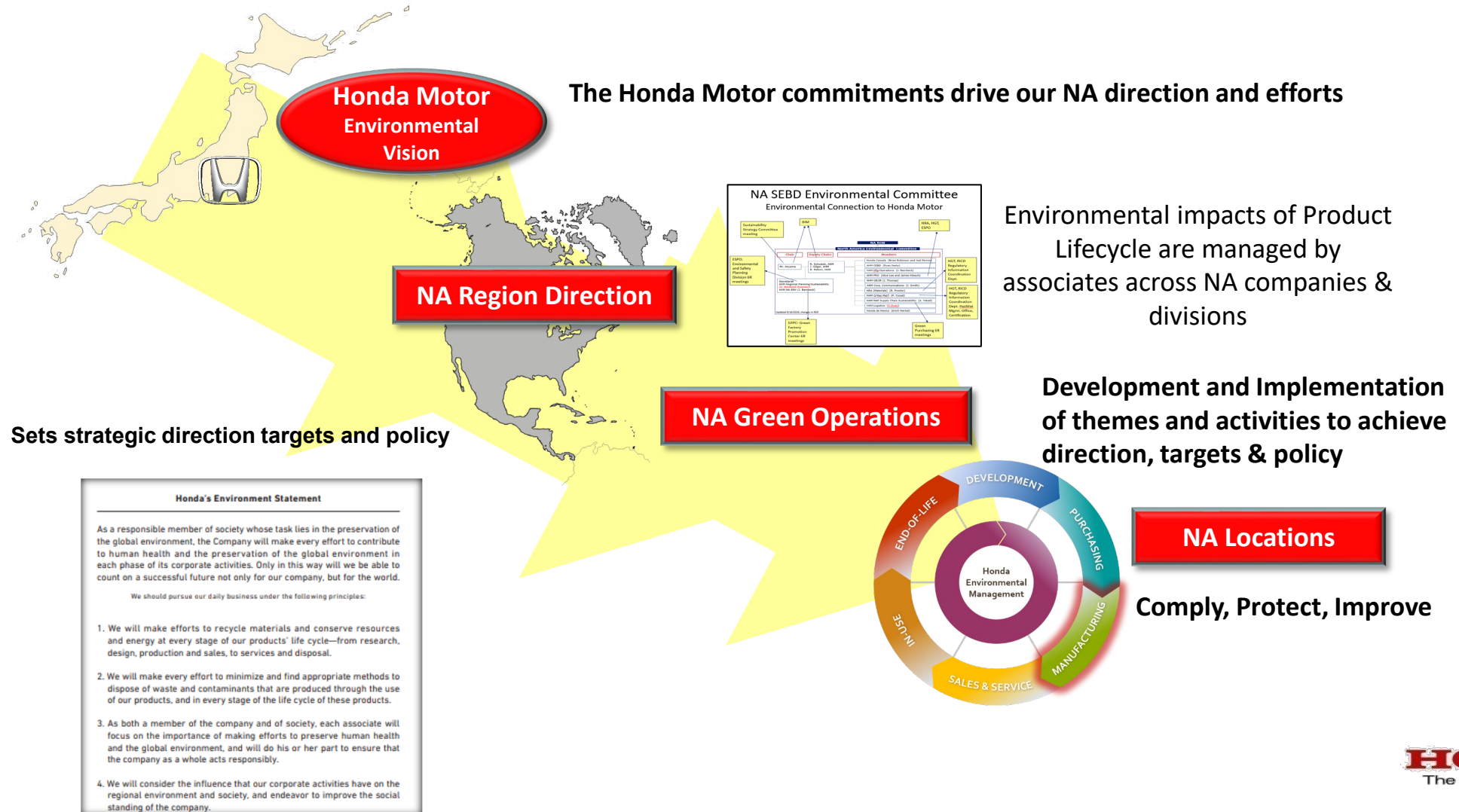
*Honda CR-V*

|                    |   |
|--------------------|---|
| Location           | 11000 St Rte. 347<br>East Liberty, Ohio 43319 |
| Started production | December 1989                                 |
| Plant size         | 3 million sq. ft.                             |
| Capital investment | \$1.9 billion                                 |
| Employment         | 2,500 associates                              |
| Annual capacity    | 240,000 vehicles                              |
| Products           | Honda CR-V<br>Acura RDX<br>Acura MDX          |



**HONDA**  
The Power of Dreams

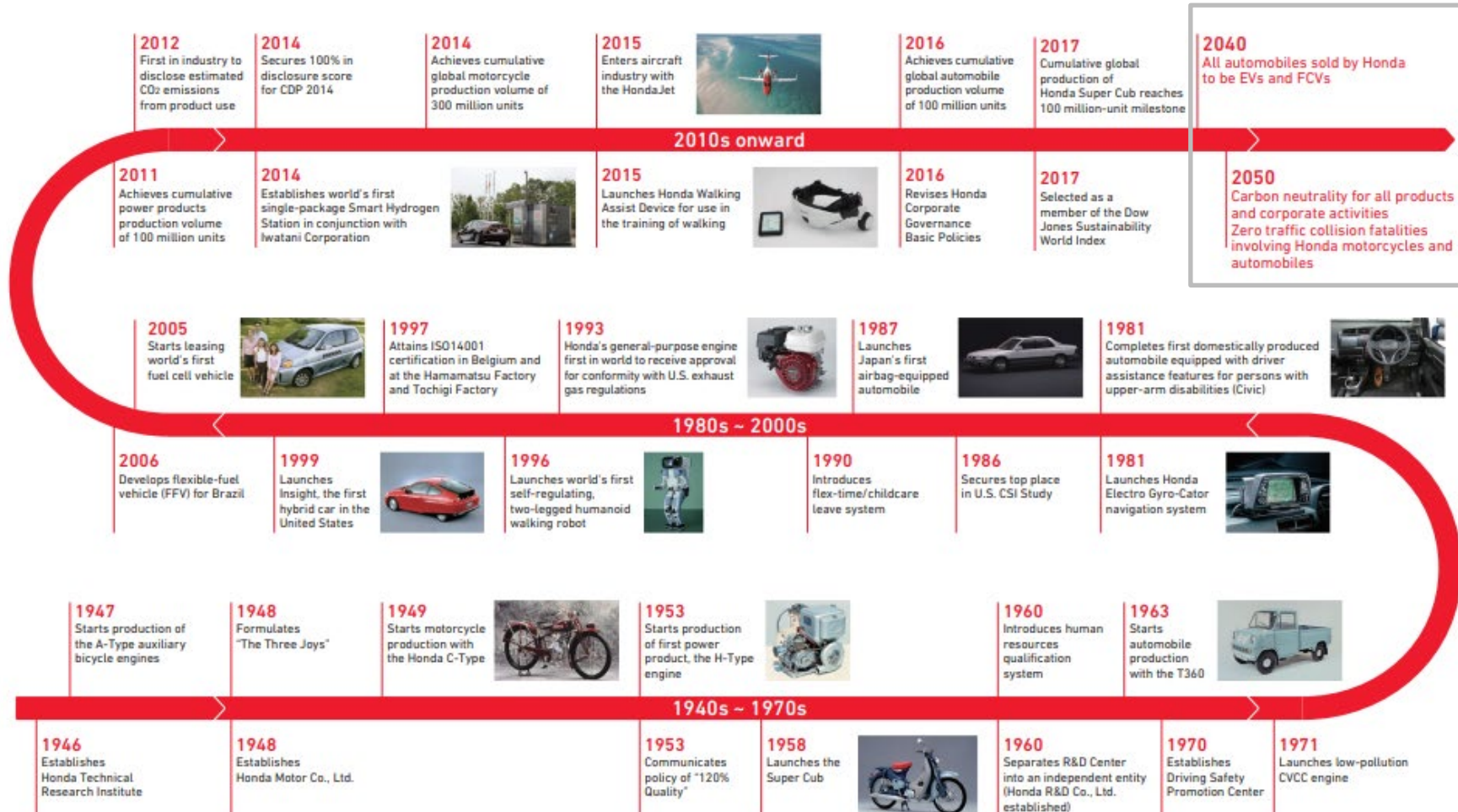
# Honda's Environmental Commitment



# Honda's Environmental Commitment

## Overview of Honda

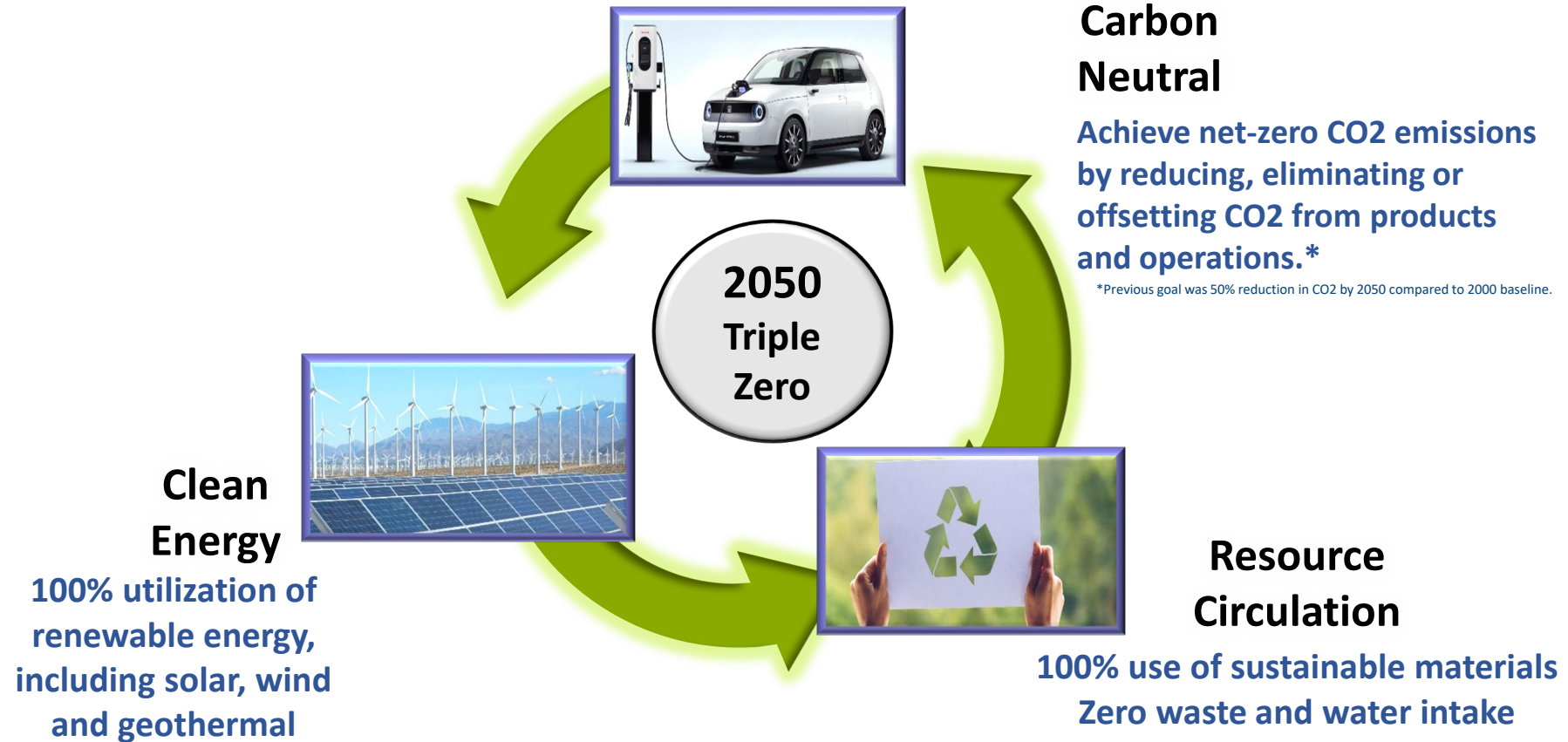
## Value Creation History



We want to be a company that society wants to exist.

# Honda's 2050 "Triple Zero" Target

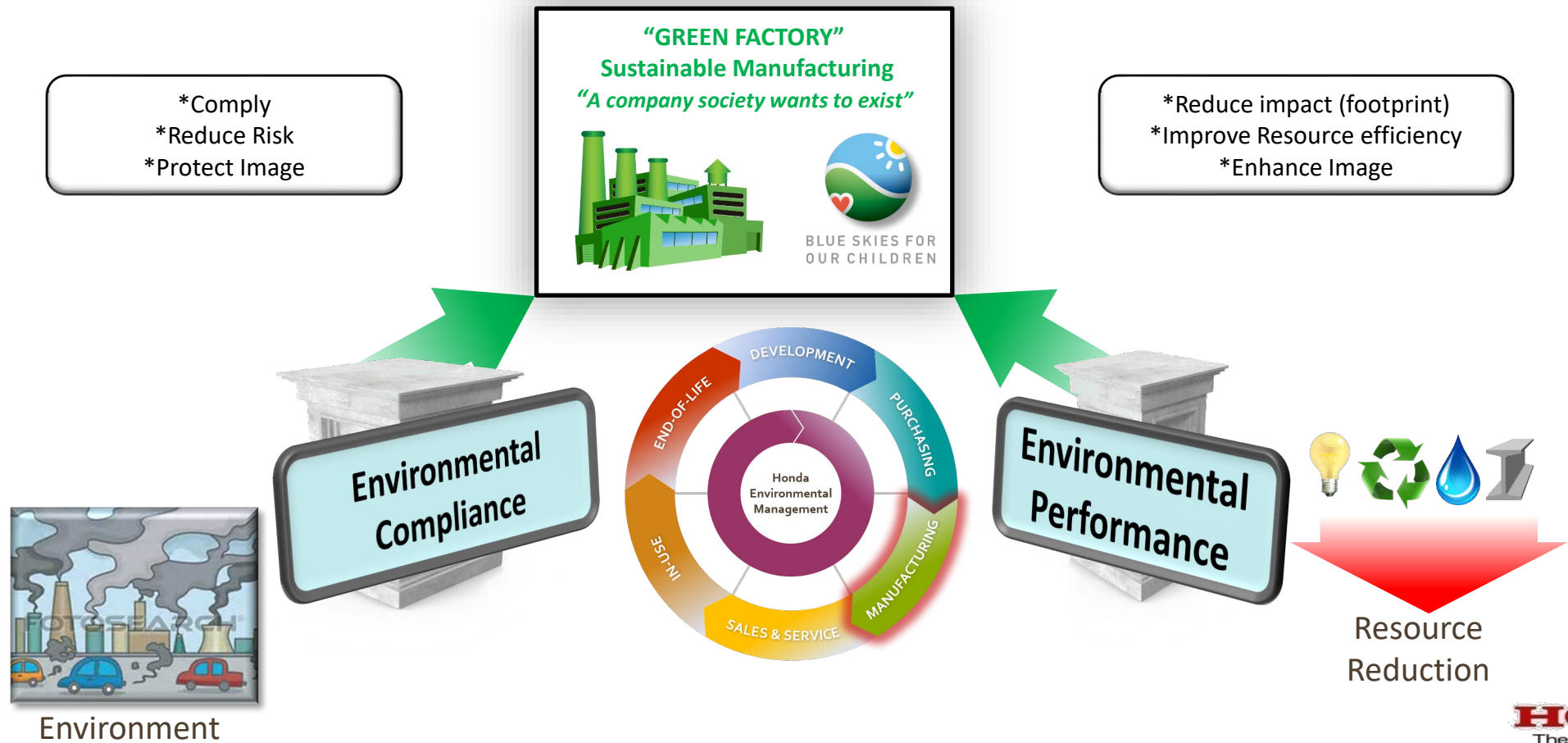
Honda introduced **Triple Zero Goals** to achieve zero environmental impact by **2050**.



# NA Green Operations Scope

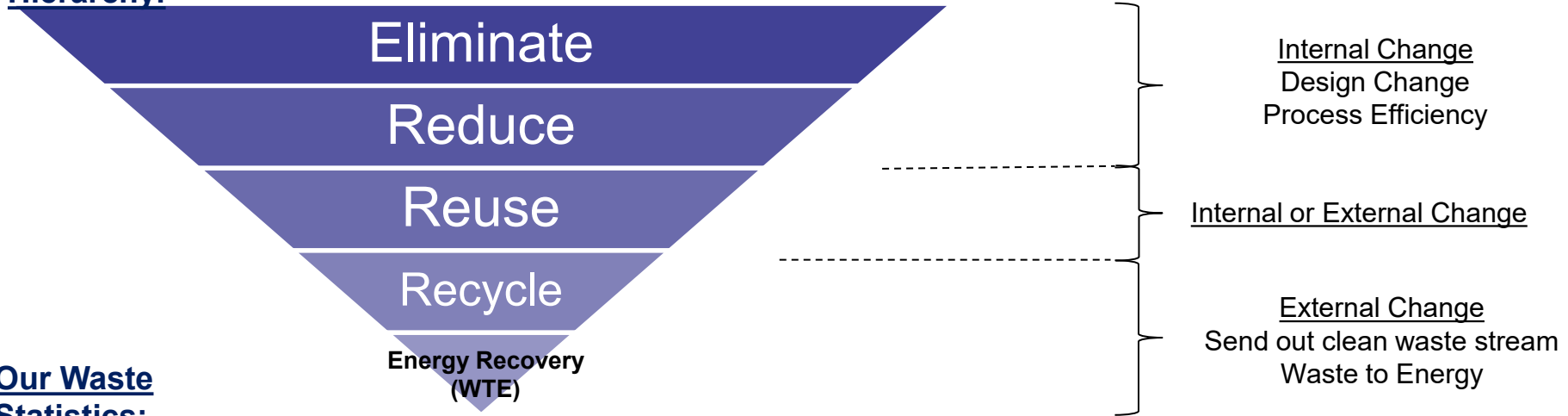
Honda implements its **Green Factory** concept through the following:

- Environmental Management Systems registered to ISO14001
- Business Plan goals to reduce **energy, water** use, and **waste**
- Relevant responsibilities for all associates and contractors

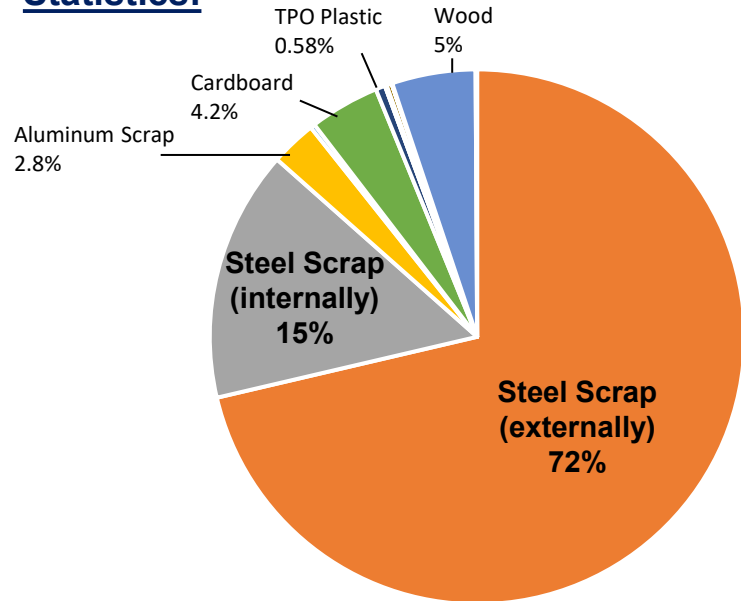


# Waste Management Strategy

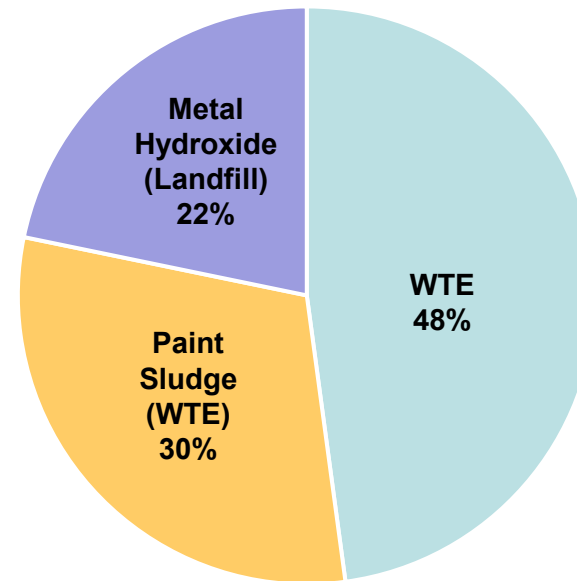
## Hierarchy:



## Our Waste Statistics:



MAP & ELP Recycled Materials (lbs)  
April 22-January 23  
Last 9 months



MAP & ELP Other Material Handling (lbs)  
April 22-January 23  
Last 9 months

# Off Line Scrap Processing Center

Construction of processing center dedicated to metal scrap baling

Allows Honda to load **full** trailers before shipping to Honda engine plant for use

Improved transportation efficiency—thus reducing CO2 emissions related to truck transport

## MTD Mfg Technical Division OSP Project: Scrap Routes, Current vs Idea Image

### Current Situation:

- No fully loaded trailers to Mill or Smelter
- Aluminum shipping built into price. Surcharge for baling.



### Ideal Image:

- Direct to scrap consumers (Mill / Smelter)



Updated based on 98ki Data

Transport Inefficiency

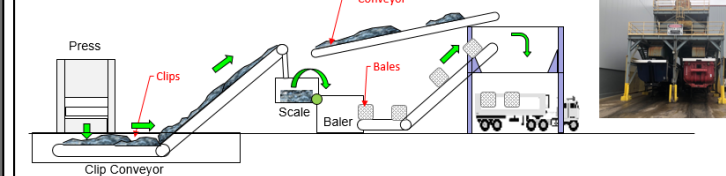
Transportation efficiency: By changing transportation flow to fully loaded trailers and sent direct we saw a large cost savings.

## Campus Facilities

### Off Line Scrap Processing – Construction Pictures



### Scrap Flow



MAP steel clippings are baled and sent to AEP (Anna Engine Plant) for direct re-use in the product

# Honda Uniforms to Dashboard Insulators



Material Feed



Grinder: Shreds the uniform



Phase 1



Phase 2



Final Fiber



Shipped to supplier

- When Honda uniforms can no longer be re-used, they are turned into **sound insulators** that are used in five different parts on 12 Honda and Acura models.
- Honda's uniform supplier, purchased a bailer to shred old uniforms





# Safety Shoe Re-Use

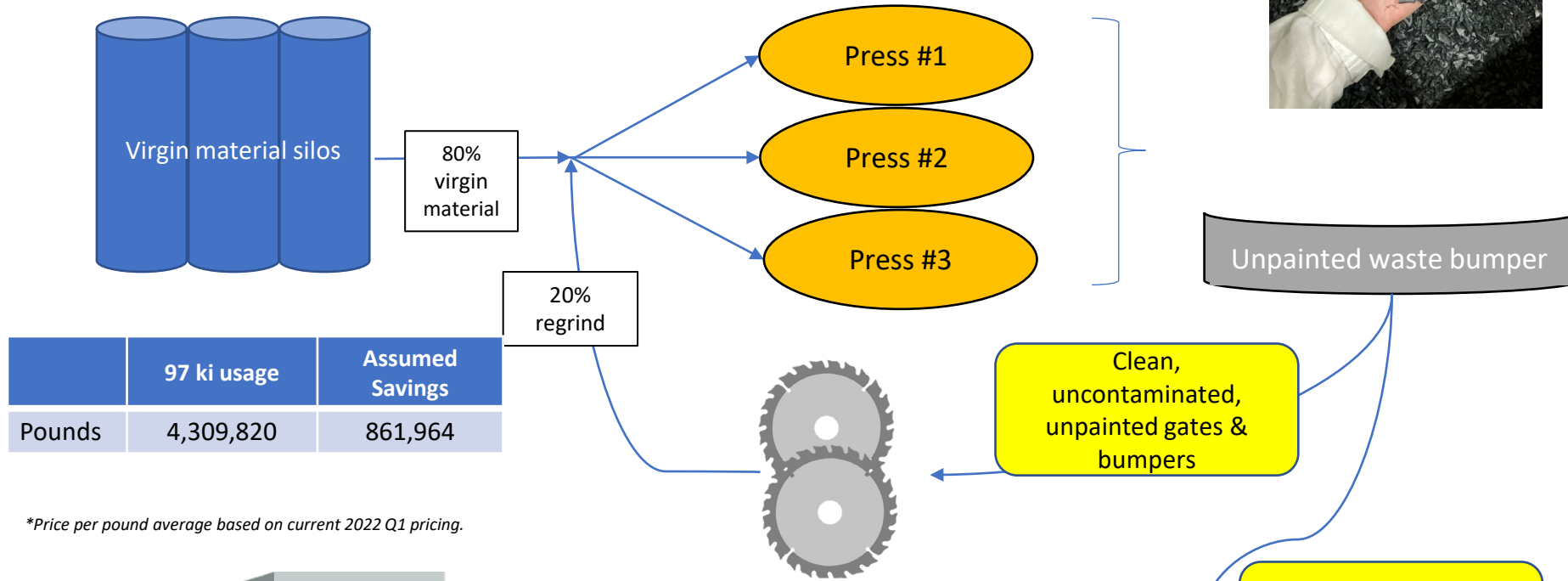


- Purpose: Collect used safety shoes to be re-used for associates in need
- On average we collect 35 pairs of shoes each month.
- Average total weight: 1,700lbs/yr.
- Cost to implement: <~\$300
  - Includes: Manpower (1hr/month); cleaning supplies, rubber gloves. Steel drum was re-used from mfg.
- Created Standard Operating Procedure to describe how we set the program up and how to operate – share with other Honda plants
- Lessons Learned:*
  - Start out as a waste reduction project but turned into an associate Morale project.



# Bumper Regrind

Defective bumpers are “ground-up” and reused in new bumpers



|        | 97 ki usage | Assumed Savings |
|--------|-------------|-----------------|
| Pounds | 4,309,820   | 861,964         |

\*Price per pound average based on current 2022 Q1 pricing.



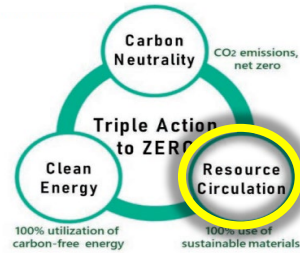
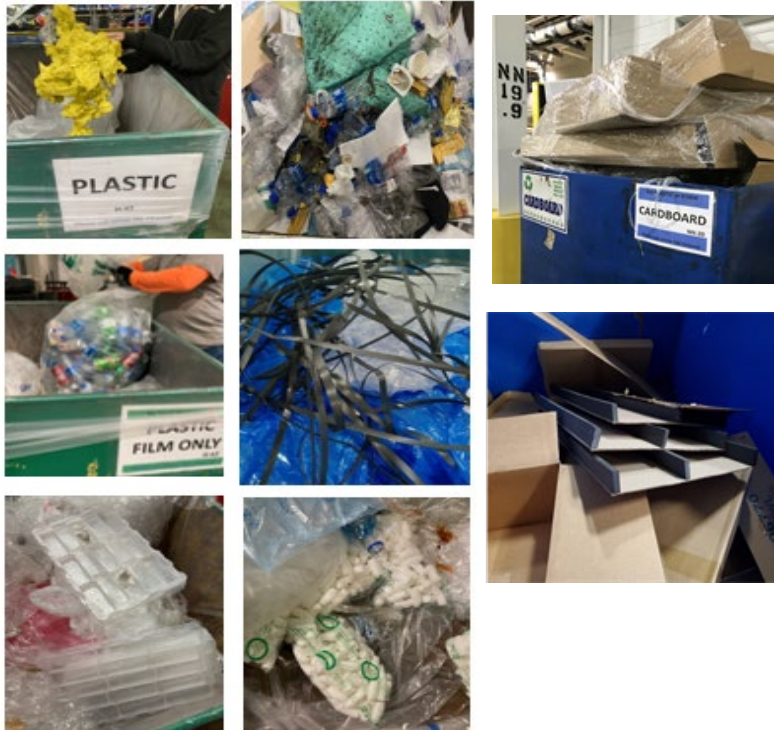
| Rebate Info  | Pounds  |
|--------------|---------|
| 98ki-to-date | 285,705 |

# NEW: "OOPS" Tagging Program

## Purpose:

- Reduce recycling contamination
- Improve plant-wide sorting behavior

*No one's perfect!...*



Location, Designated waste category

Incorrect waste stream



Shift, Additional details

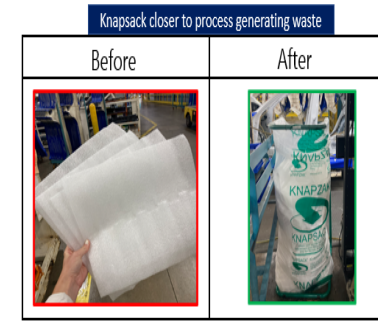
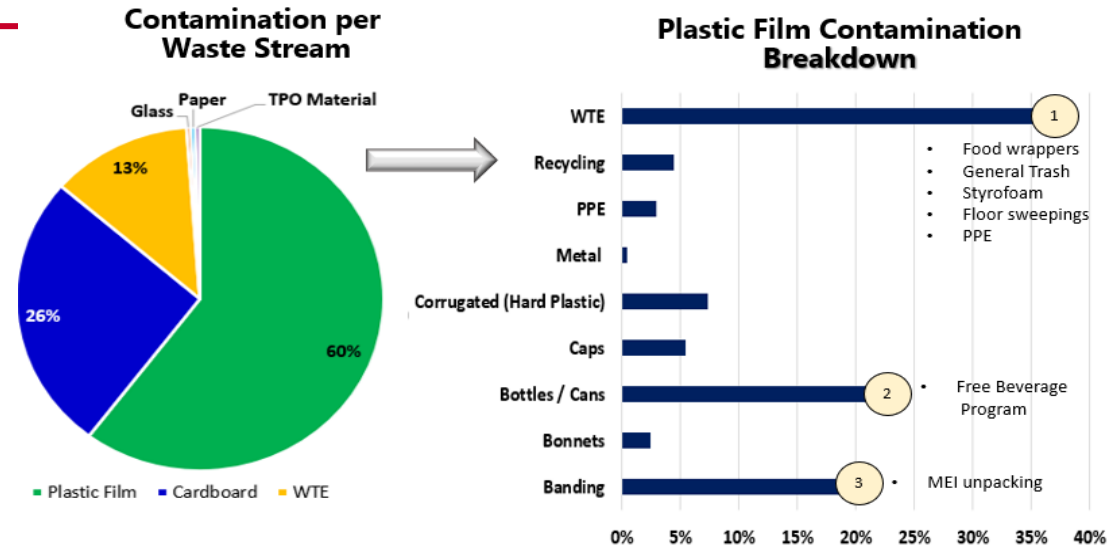
| MAP <b>OOPS</b> TAG   |  |
|---|--|
| RECYCLING CONTAMINATION NOTIFICATION                                  |  |
| DATE:   |  |
| DUMPSTER TYPE:  |  |
| COLUMN #:   |  |
| <b>NO! Please leave out!</b>  |  |
| The following was discovered in incorrect receptacle:                 |  |
| <input type="checkbox"/> WTE  | <input type="checkbox"/> Cardboard       |
| <input type="checkbox"/> Plastic Film                                 | <input type="checkbox"/> Bottles/ Cans   |
| <input type="checkbox"/> Paper  | <input type="checkbox"/> Batteries       |
| <input type="checkbox"/> Steel / Metal                                | <input type="checkbox"/> E - Waste       |
| <input type="checkbox"/> Filters/ Rags                                | <input type="checkbox"/> Bulbs/ Ballasts |
| <input type="checkbox"/> Aerosols                                     | <input type="checkbox"/> Haz. Waste      |
| <input type="checkbox"/> Other  |  |
| ASSOCIATE INITIALS:   |  |
| SHIFT:  |  |
| Additional Details:   |  |
| Questions about this notification?<br>MAP Environmental, 937-553-4010 |  |

*...to achieve zero waste in the future, we'll need essentially perfect waste sorting.*

# NEW: "OOPS" Tagging Program

## Results -

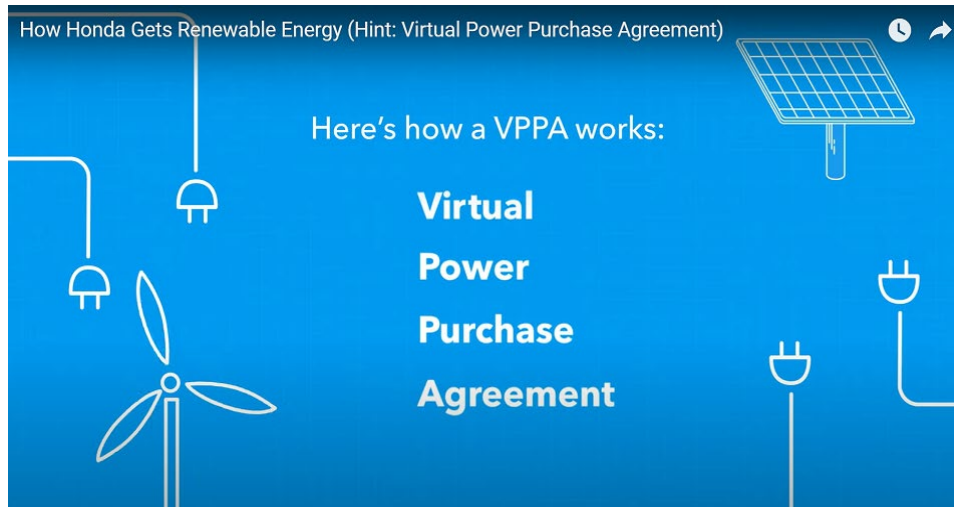
- Plastic Film most contaminated waste stream
- Provided associate education
- Assessed:
  - Right place
  - Right size
  - Right type of receptacle



Assess waste generated at each area & provide correct disposal

Optimize type of receptacle and position

# Virtual Power Agreement (VPPAs)



- HDMA Ohio site electricity is fully offset
  - VPPA offsets 60% of all electricity used in North America
- Honda has purchased over 1 million MWH of electricity (annually).
- Locations:
  - Oklahoma (wind)
  - Texas (solar)

January 2020



February 2020



March 2020



April 2020



# Expanding Hydrogen

BEFORE



AFTER



- 15 -minute battery change out time
- Required influx of fresh air to be conditioned in building
- Lead acid batteries are a hazardous waste
- Associate handling of propane tanks is slip, trip, & injury risk

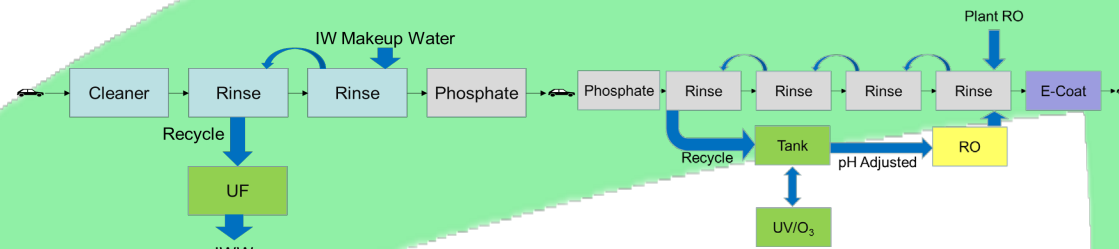
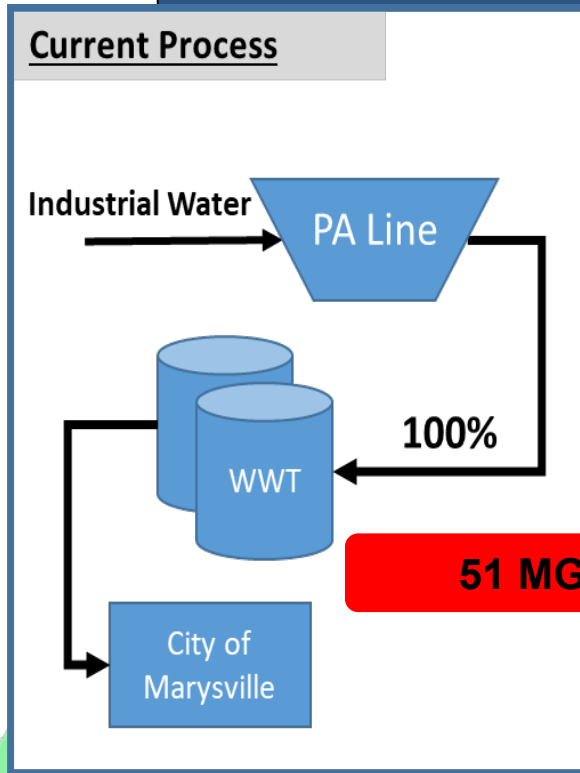
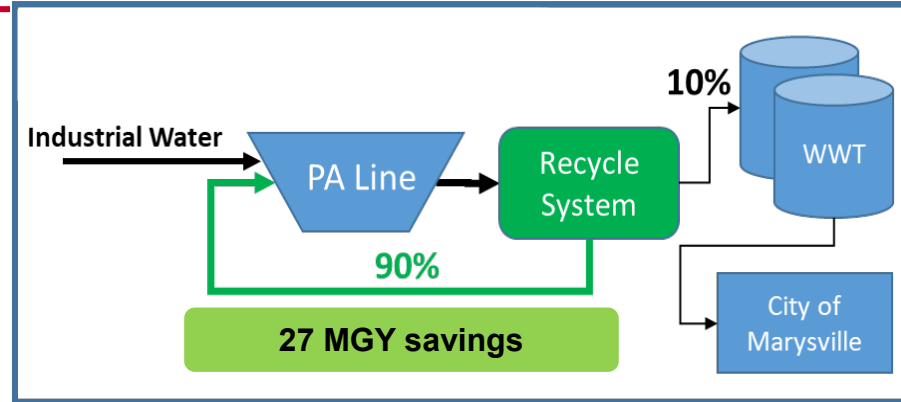
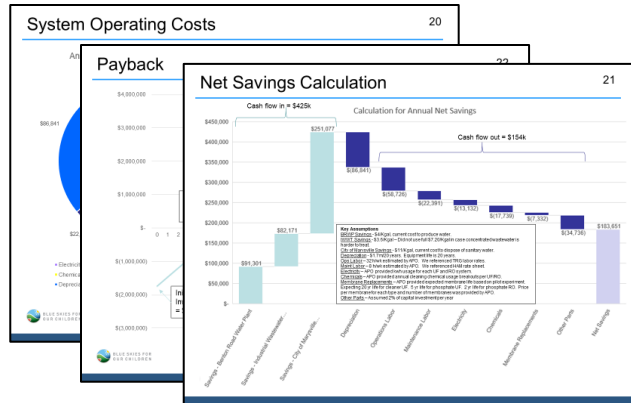
- 2 -minute charge time
- Able to scale back CC air handlers and recognize energy savings
- H<sub>2</sub>O only byproduct
- Safety risk eliminated

**Tugger:** Approx 10-15k kwh/year savings  
**Forklift:** Approx 11.5MT/year CO<sub>2</sub> savings

## Challenges:

- 1) Insurance company heavily involved in hydrogen storage construction. Required piping size to be reduced and ran along roof.
- 2) In order to be truly carbon neutral, ensure H<sub>2</sub> procured is green, rather than “blue”.

# Paint Wastewater Recycling



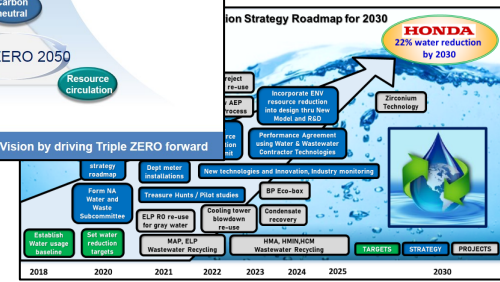
- Expected Result (ELP):**
- 27M gal/year water reduction
  - Significant cost reduction in maintenance, equipment & water costs
  - 6.42-yr payback

**Honda New Environmental Vision Package**

Realization of "the Joy and Freedom of Mobility" and "Sustainable Society Where People Can Enjoy Life"

What we aim for is: **"Society with Zero Environmental Impact"**

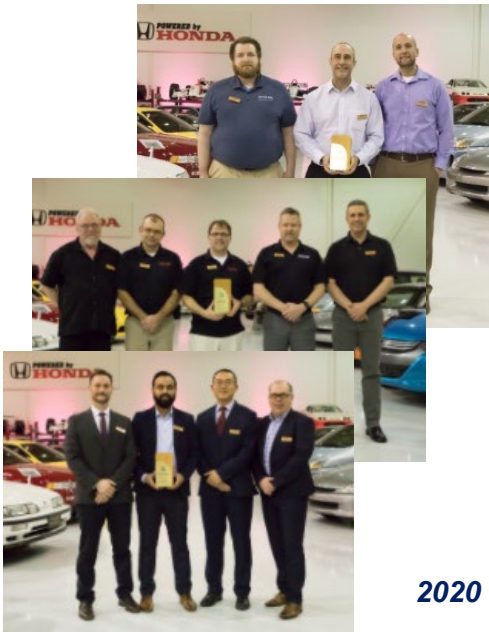
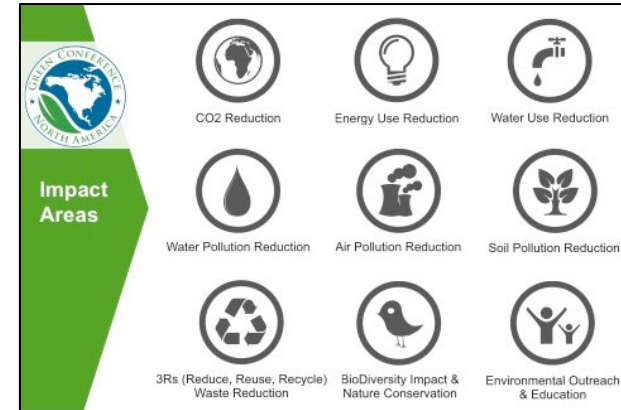
Triple ZERO 2050: Carbon neutral, Shifting to clean energy, Resource circulation.



# Honda North American Green Conference



- Internal competition
- Held every 3-years
- Top 12 teams are invited to present at the conference in Torrance, California.
- In 2022, over 50 projects were submitted
- Projects are evaluated by top Honda management for the follow characteristics:
  - Assessment
  - Innovation
  - Environmental Impact
  - Cost Benefit Analysis
  - Potential to Replicate
  - Challenging Spirit.
- Projects are openly shared across NA plants

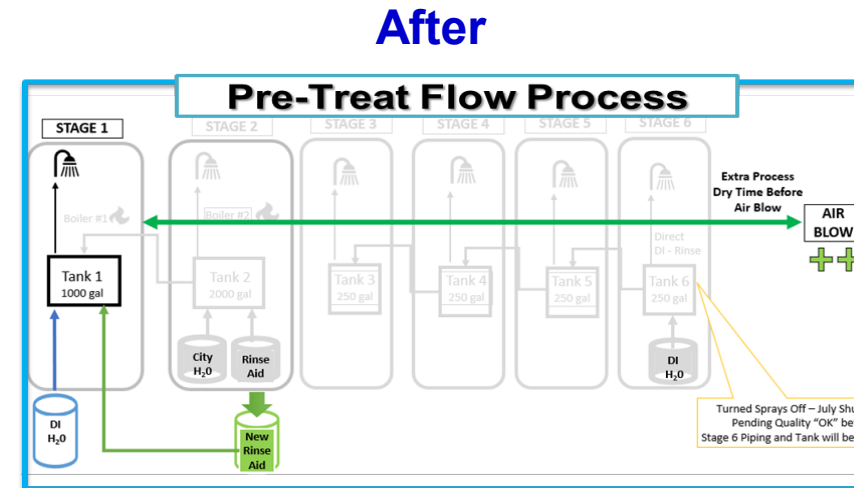
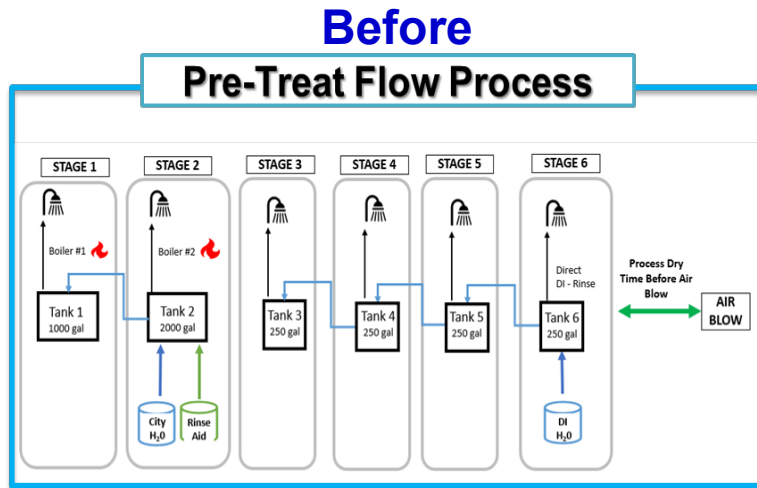


2020 Winning Teams & whole group – next award ceremony this Feb 2023



## Bumper Pre-Treat Rinse Reduction

Objective: Reducing the Pre-Treat equipment from a 6-stage rinse to a single stage rinse process.



### Cost Saving Strategies

- ✓ Demolition kept in house, and recycled metal tanks, piping
- ✓ Reduced biocide, cleaning time, and manpower by using DI water
- ✓ Worked with contractors to create a more efficient cleaning schedule
- ✓ Installed DI storage tank to reduce cleaning, manpower, and refill time.



| Calculation | Result (USD)   |
|-------------|--|
| Lif         | <p>Cost payback showed large payback with very little change in equipment and process flow</p> |

# Environmental Impact Tools & Forms

Honda has developed documents & forms to help Project Leaders evaluate their environmental & compliance impact.

Forms –used for any project (E-flow, New Model, large expense projects)

### Compliance

COMPLETE AT PRE-E PLAN / SCOPE DEVELOPMENT

Project Leader Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Environmental Signatures: *"Digital signature is accepted"*

Compliance Signature: \_\_\_\_\_

Performance Signature: \_\_\_\_\_

Project Name: \_\_\_\_\_

Project Description: \_\_\_\_\_

06/20/22

Form Completion Date: \_\_\_\_\_ Today

Expected Start Date: \_\_\_\_\_ Equipment installation begins

Expected Equipment Resp: \_\_\_\_\_

Will the project: Preliminary Assessment

Compliance Select Dr

General

introduce new manufacturing technology or processes?

involve any demolition and/or renovation?

potentially increase exterior noise, once complete?

Stormwater Construction (Permit/ Wetlands Permitting)

disturb land (clearing, grading, excavating) outside existing building walls?

disturb any existing storm water drainage, pond, wetland, or natural waterway? (ex: stream, creek)

add new or replace existing combustion equipment or equipment with external exhaust?

add new or replace existing boiler (or hot water generator)

generate any particulate or dust? (welding, sanding, grinding, machining, painting)

involve storage tank(s) (pressurized or unpressurized) for liquids or gases?

Air Permit to install

involve any melting, molding operations, or other process heating?

include new refrigeration equipment or retrofitting to replace an existing refrigerant?

include any new material, chemical, application, or chemical reaction process used in the finished product (paints, sealers, adhesives, sprays) or on Honda property (during construction projects)

construct a new roadway, parking lot, or expansion of existing?

increase process capacity or overall production rate?

allow the process to produce a larger box, model, or product?

### Equipment Spec

LET PERM / SCOPE DEVELOPMENT

**TRIPLE ZERO MINDSET**

The HDMA Green Equipment & Building Guide aligns project with Honda's corporate environmental goals:

- carbon neutrality for manufacturing operations means: elimination of natural gas + fuels (diesel, propane, etc.)
- zero industrial water intake by 2050
- zero industrial waste generation by 2050

Below are minimum environmental performance standards for new and rebuilt production or non-production. The project leader is responsible for specifying and/or purchasing machinery, equipment, and equipment components that conform with the Standard.

Select all equipment categories that apply:

|  |   |   |
|--|---|---|
| <input type="checkbox"/> Process Cooling | <input type="checkbox"/> Electric Motors & Drives | <input type="checkbox"/>                        |
| <input type="checkbox"/> Process Heating | <input type="checkbox"/> Fuel Utilization         | <input type="checkbox"/> New Building/Structure |
| <input type="checkbox"/> HVAC            | <input type="checkbox"/> Task Lighting            | <input type="checkbox"/>                        |
| <input type="checkbox"/> Water Usage     | <input type="checkbox"/> Sub-metering             | <input type="checkbox"/> Not Applicable         |
| <input type="checkbox"/> Compressed Air  | <input type="checkbox"/> Plug-load Equipment      | <input type="checkbox"/>                        |

Continue to next Tab, Part 2 **CONTINUE**

### DA/Carbon Cost

WILL THIS PROJECT QUALIFY FOR HONDA'S TRIPLE ZERO ACTION FUND? (\*\*\*)

Environmental knows the equipment or process that best contributes to our Triple Zero goals is not always the cheapest option. Environmental can help support by covering the incremental improvement cost. \*application required\*

Have you evaluated different equipment options? Yes  No

| Environmental Characteristic (Emissions, Water, Waste, Waterwaste) | Describe Improvement |                    | Cost Impact |
|--|----------------------|--------------------|-------------|
|  | Traditional Option   | Triple Zero Option |             |
| Equipment Description  |                      |                    |             |
| Equipment Useful Life (years)                                      |                      |                    |             |
| Annual Operating Cost  |                      |                    |             |
| Primary Utility Cost   |                      |                    | \$ -        |
| Secondary Utility Cost   |                      |                    | \$ -        |
| Annual Maintenance Cost  |                      |                    | \$ -        |
| Total Annual Operating Cost  | \$ -                 | \$ -               | \$ -        |
| Investment Cost  |                      |                    |             |
| Equipment Cost   |                      |                    | \$ -        |
| Additional Equipment Cost  |                      |                    | \$ -        |
| Substation Upgrade Cost  |                      |                    | \$ -        |
| Total Investment Cost  | \$ -                 | \$ -               | \$ -        |

CO2 Emission (t/mton CO2)

Emissions MT CO2 / Year

Requires Input!

CARBON COST (\$/mton CO2)

Note: Carbon cost of \$100/mton or less is preferred.

Do you intend to apply for the Triple Zero Action Fund?

Record the Environmental Characteristic in the "Utility Calculation Sheet"

| Environmental Characteristic | (+/-) |
|------------------------------|-------|
| Electricity                  |       |
| Natural Gas                  |       |
| Water                        |       |
| Waste Water                  |       |
| Compressed Air               |       |
| Solid Waste                  |       |

### Utility Calculator

Select utility impact(s) and click the Add button.

Fill in yellow cells with equipment specs

| Condition  | Electricity | Natural Gas | BEFORE     |          |            |          | AFTER      |          |            |          |
|------------|-------------|-------------|------------|----------|------------|----------|------------|----------|------------|----------|
|            |             |             | MCF (year) | BTU/hour | MCF (year) | BTU/hour | MCF (year) | BTU/hour | MCF (year) | BTU/hour |
| BEFORE     | 0.0         | 0.00        | 0.00       | 0.00     | 0.00       | 0.00     | 0.00       | 0.00     | 0.00       |          |
| AFTER      | 0.0         | 0.00        | 0.00       | 0.00     | 0.00       | 0.00     | 0.00       | 0.00     | 0.00       |          |
| DIFFERENCE | 0.0         | 0.00        | 0.00       | 0.00     | 0.00       | 0.00     | 0.00       | 0.00     | 0.00       |          |

FINAL RESULT / COMPARISONS

| Condition  | Electric | Natural Gas | Water | Waste Water | Compressed Air | Solid Waste |
|------------|----------|-------------|-------|-------------|----------------|-------------|
| BEFORE     | 0.0      | 0.00        | 0.00  | 0.00        | 0.00           | 0.00        |
| AFTER      | 0.0      | 0.00        | 0.00  | 0.00        | 0.00           | 0.00        |
| DIFFERENCE | 0.0      | 0.00        | 0.00  | 0.00        | 0.00           | 0.00        |

**Challenge:** Project Leaders don't know or forget to use them (manpower changes, other job duty requirements)

- Honda is working to further 'bake' this into the project flow so it can't be forgotten or neglected
- Requires regular contact with Project Leaders by Environmental Team
- Path forward: Created specific training for PL for the specific Environmental plant to ensure connection with PL. All investment project go to a committee which asks to see the signed Impact Form during presentation



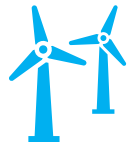


“We only have one future, and it will be made of our dreams, if we have the courage to challenge convention.” – **Soichiro Honda**



## Carbon Neutrality

Achieve net-zero CO2 emissions by reducing, eliminating or offsetting CO2 from products and operations.



## Clean Energy

100% utilization of renewable energy, including solar, wind and geothermal



## Resource Recirculation

100% use of sustainable materials  
Zero waste and water intake

## Biographical Information

**Terri Sexton, Manager, Environmental & Energy Affairs, Navistar, Inc.**  
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Terri is a corporate Manager of Environmental and Energy Affairs for the Office of Environment and Sustainability at Navistar, Inc. She manages various environmental and energy projects and programs across the corporation, most recently focused on Scope 1, 2, and 3 greenhouse gas emissions, and energy conservation leading to cost reduction.

Terri is also responsible for ensuring EPA and related ISO compliance at the various Navistar manufacturing and operations sites. She has worked in the EHS field for 30 years including employment at corporate, manufacturing/industrial facilities, wastewater treatment operations, and EPA. Terri holds a master's degree in environmental management systems from Southern Methodist University and a bachelor's degree in biology and environmental sciences from Wright State University.

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Lisa is a Rutgers University graduate with a degree in Environmental Science. She has been with Honda's environmental team for seven years: beginning in Purchasing and Supply Chain sustainability, moving to the regional environmental team, and now the Marysville Auto Plant for the past year. She is a Certified Energy Manager (CEM) and TRUE Waste Advisor.

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Kailynn is West Virginia University graduate with a Bachelor's in Animal & Nutritional Science with a minor in Environmental Protection, and a Master's in Industrial Hygiene. She has worn multiple hats during her 7-year long career in Safety & Environmental focusing in on compliance, ergonomics, new model, process safety management (PSM) and environmental. And within the last 1.5 year has moved into the role as East Liberty Plant's Environmental Green Factory/Environmental Leader.