

Corporate Sustainability Best Practices

Honda Development and Manufacturing of America

Tuesday, March 29, 2022, 2:00pm-3:15pm

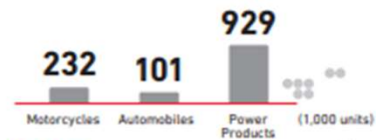
Kailynn Cerny – Green Factory/Environmental Leader – East Liberty, OH

Lisa Majchrzak – Environmental Performance Coordinator – Marysville, OH

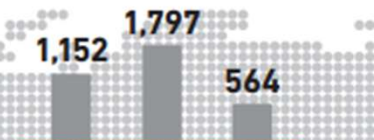
Overview of Honda

Overview of Honda

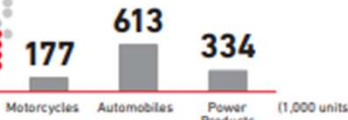
Unit Sales and Principal Operation Bases



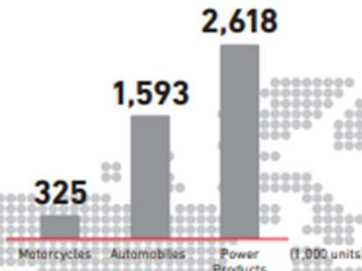
Europe
Regional headquarters:
Honda Motor Europe Ltd. (U.K.)



China
Regional headquarters:
Honda Motor (China) Investment Co., Ltd. (Beijing)



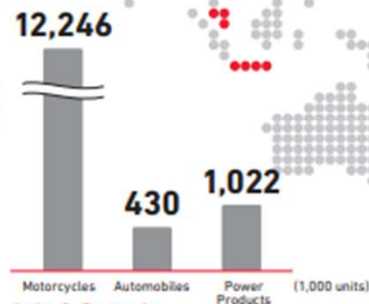
Japan
Regional headquarters:
Honda Motor Co., Ltd. (Tokyo)



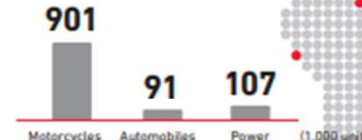
North America
Regional headquarters: Honda North America, Inc. (U.S.A.)



Africa & Middle East



Asia & Oceania
Regional headquarters: Asian Honda Motor Co., Ltd. (Thailand)



South America
Regional headquarters:
Honda South America Ltda. (Brazil)

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)

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

*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



Article from October 11, 1977



Article from December 18, 1989



1979-2009
Marysville
Motorcycle Plant



1982 Marysville
Auto Plant



1985 Anna Engine
Plant

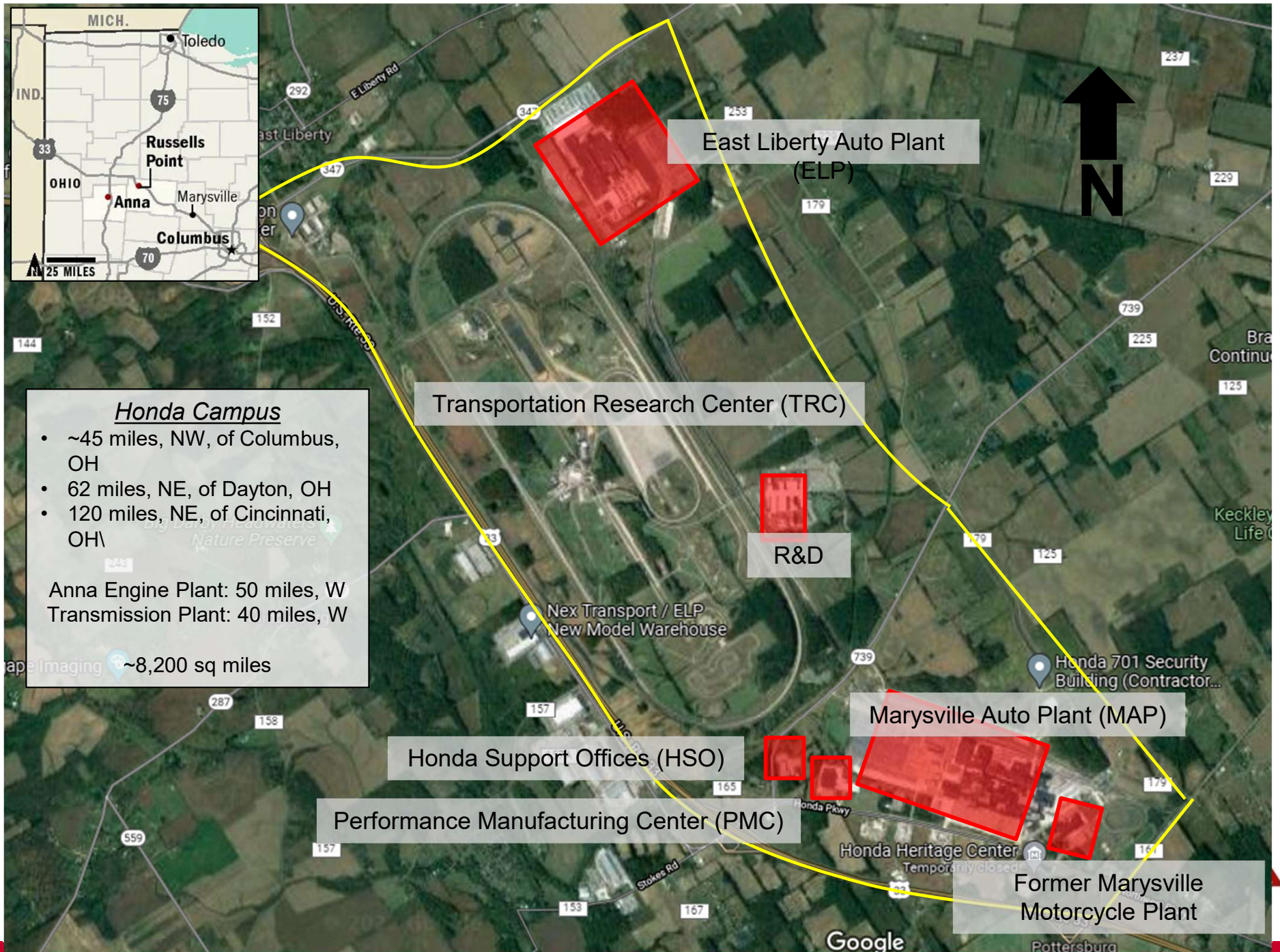


1989 East Liberty Plant



2016 Performance
Manufacturing Center (NSX)

Where are we located?



Marysville Auto Plant (MAP)

HONDA



Accord



CR-V



Acura ILX



Acura TLX

Location Marysville, Ohio

Started production November 1982

Plant size 4.4 million sq. ft.

Capital investment \$5.4 billion

Employment 3,900 associates

Annual capacity 440,000 vehicles

Products Accord
Accord Hybrid
CR-V
Acura ILX
Acura TLX
Acura TLX Type S



Information source Honda Web

HONDA
The Power of Dreams

East Liberty Auto Plant (ELP)

HONDA



Honda CR-V



Acura RDX



Acura MDX

Location 11000 St Rte. 347
East Liberty, Ohio 43319

Started production December 1989

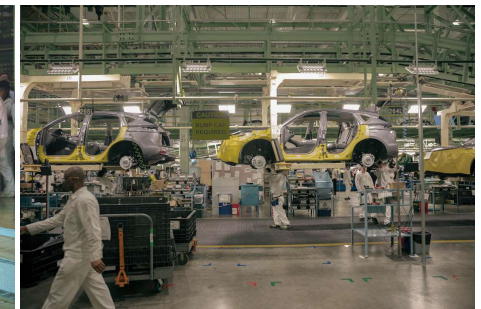
Plant size 2.8 million sq. ft.

Capital investment \$1.7 billion

Employment 2,500 associates

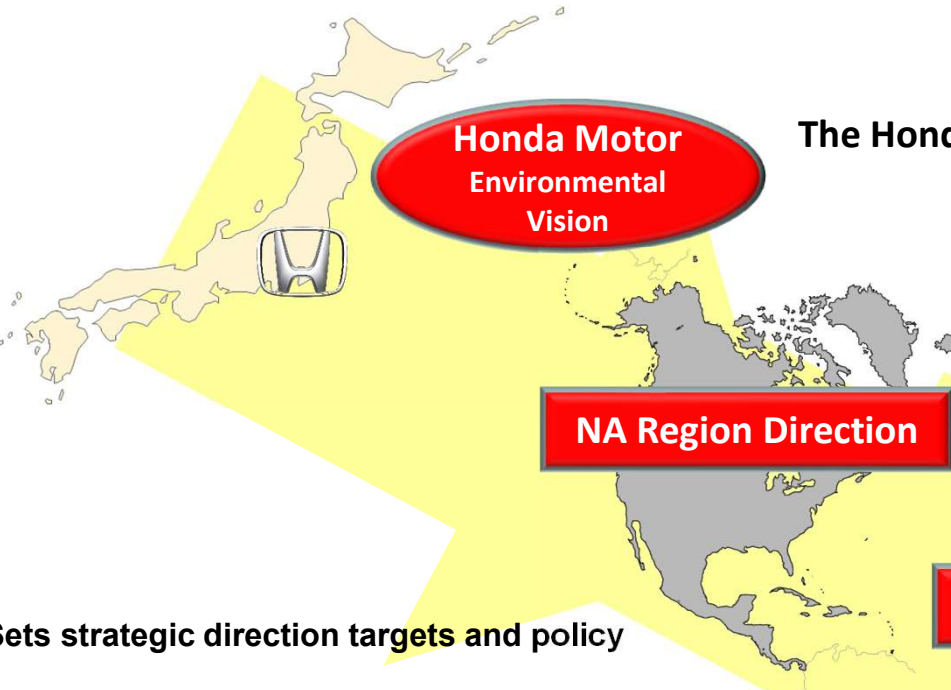
Annual capacity 240,000 vehicles

Products Honda CR-V
Acura RDX
Acura MDX

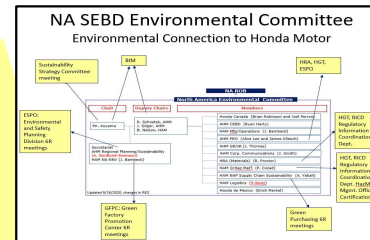


HONDA
The Power of Dreams

Honda's Environmental Commitment



The Honda Motor commitments drive our NA direction and efforts



Environmental impacts of Product Lifecycle are managed by associates across NA companies & divisions

Development and Implementation of themes and activities to achieve direction, targets & policy

Sets strategic direction targets and policy

NA Green Operations



NA Locations

Comply, Protect, Improve

Honda's Environment Statement

As a responsible member of society whose task lies in the preservation of the global environment, the Company will make every effort to contribute to human health and the preservation of the global environment in each phase of its corporate activities. Only in this way will we be able to count on a successful future not only for our company, but for the world.

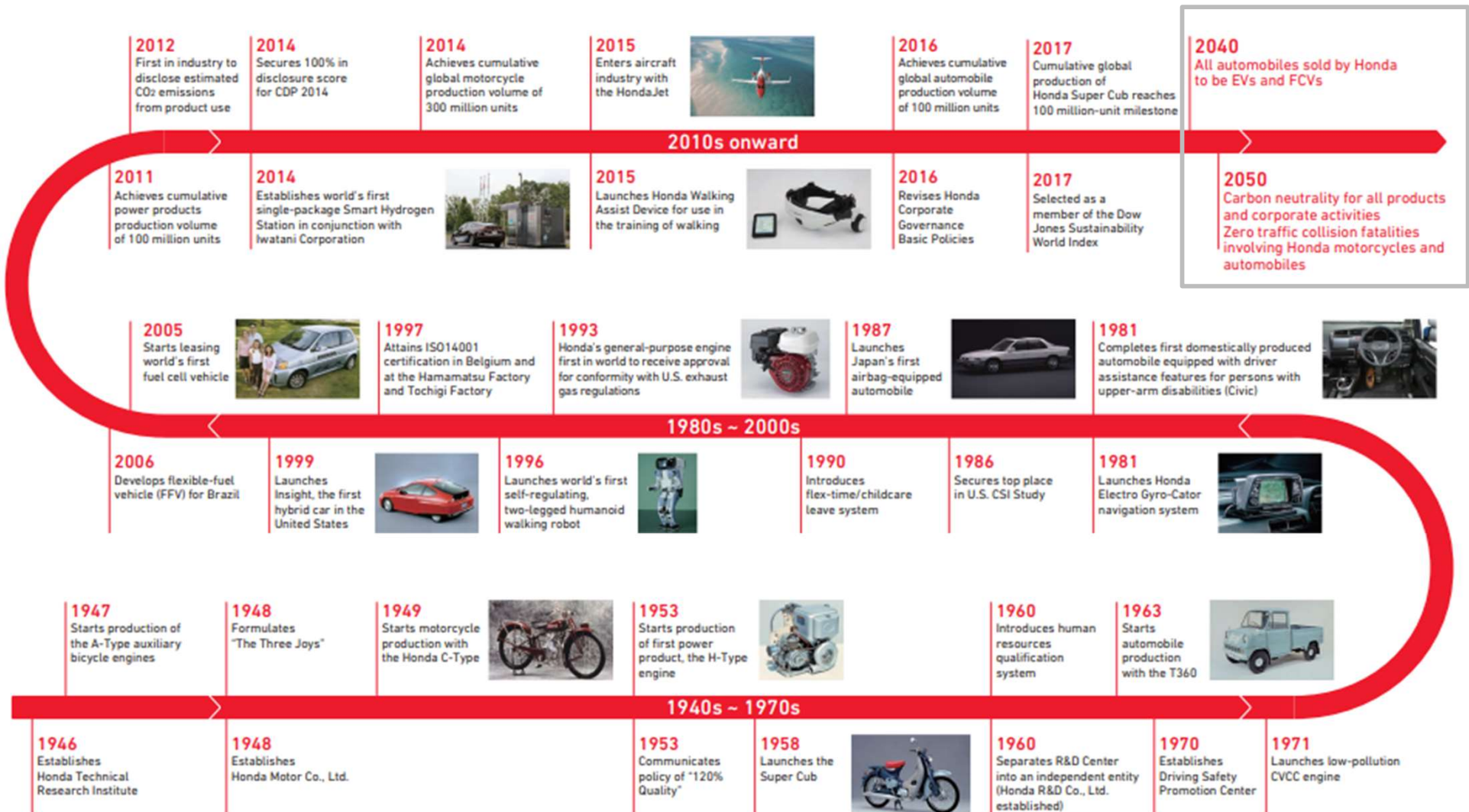
We should pursue our daily business under the following principles:

1. We will make efforts to recycle materials and conserve resources and energy at every stage of our products' life cycle—from research, design, production and sales, to services and disposal.
2. We will make every effort to minimize and find appropriate methods to dispose of waste and contaminants that are produced through the use of our products, and in every stage of the life cycle of these products.
3. As both a member of the company and of society, each associate will focus on the importance of making efforts to preserve human health and the global environment, and will do his or her part to ensure that the company as a whole acts responsibly.
4. We will consider the influence that our corporate activities have on the regional environment and society, and endeavor to improve the social standing of the company.

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**.



Carbon Neutral

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

*Previous goal was 50% reduction in CO2 by 2050 compared to 2000 baseline.

**2050
Triple
Zero**



Clean Energy

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



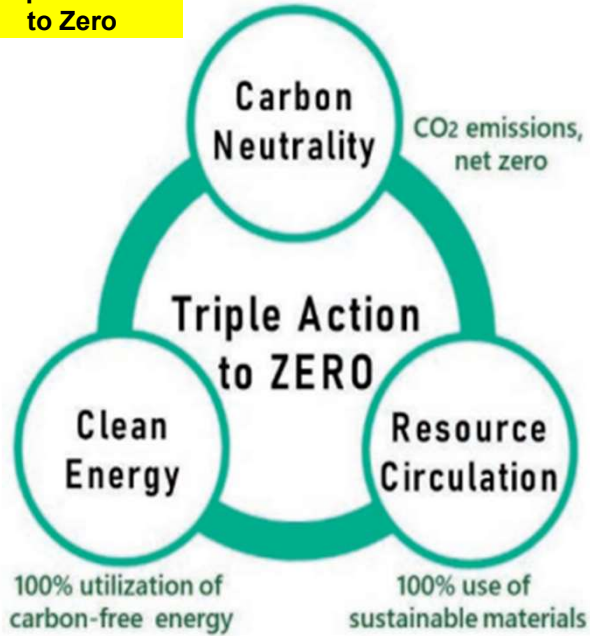
Resource Circulation

100% use of sustainable materials
Zero waste and water intake

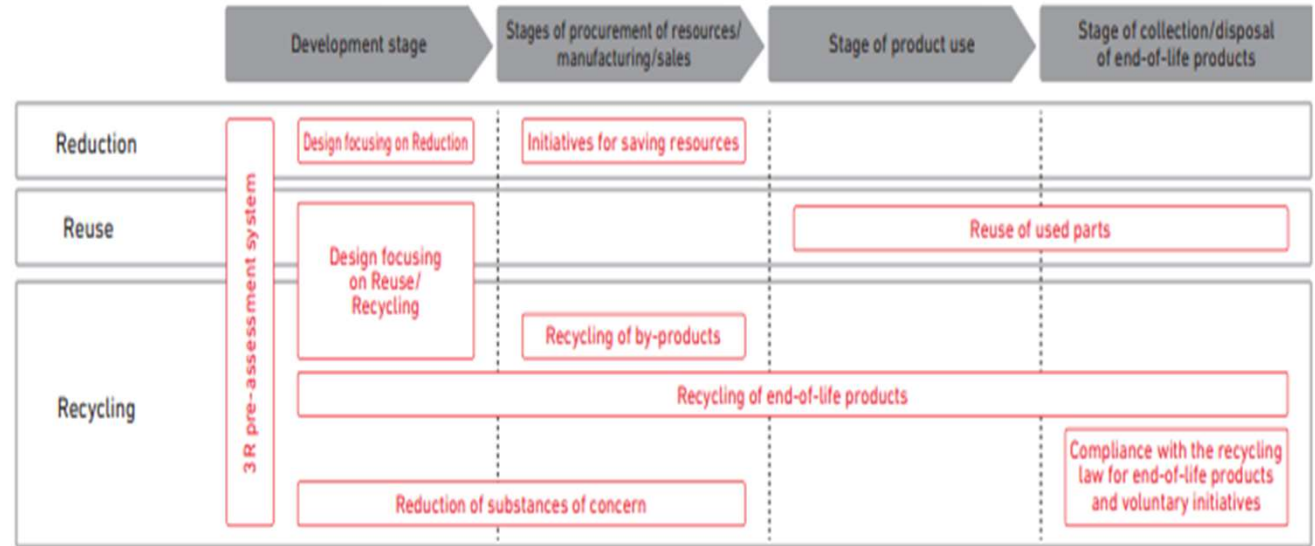
Honda's Sustainability Report

<https://global.honda/about/sustainability/report.html>

Triple Action to Zero



Initiative for zero environmental impact related to resources and disposal



Emissions from “use of products” account for approximately 80% of CO2 emissions from Honda’s entire product life cycle.

Three Initiatives:

- ① Reducing CO2 emissions through efficiency improvements of internal combustion engines
- ② Reducing CO2 emissions by introducing environmentally innovative technologies and diversifying energy sources
- ③ Eliminating CO2 emissions through the use of renewable energy and total energy management

Releasing the Gyro e: Business-Use Electric Motorized Three-Wheeled Scooter

In March 2021, Honda initiated sales of the Gyro e: business-use electric motorized scooter for corporate customers. It is a three-wheeled, Category-1 motorized scooter that uses two removable “Honda Mobile Power Pack” units.

The Gyro e: offers excellent environmental performance unique to electric means of mobility, that is, not emitting CO₂ while in operation. It uses two mobile power packs, the same ones used for the Benly e: series, as its power source. Users can ride the scooter without having to wait for recharging as they can replace used units with charged units.

Honda will help provide a quieter and cleaner living environment by working to promote the widespread use of the Honda e: series of business-use motorcycles that are friendly to both the environment and users.



3R pre-assessment system, which assesses the 3R elements of each model to be newly developed

- ① Design Focusing on Reduction
 - Downsizing & weight reduction by using different materials from the frame to bumper and bolts
- ② Design Focusing on Reuse/Recycling
 - Use of materials that are easily recyclable
- ③ Recycling of End-of-Life Components
 - Honda collects and recycles end-of-life components generated from repair, replacement, etc., from dealers nationwide. In FY2021, the Company collected and recycled approximately 136,000 end-of-life bumpers. Collected bumpers are recycled and used for undercovers and other components

NA Green Operations Scope

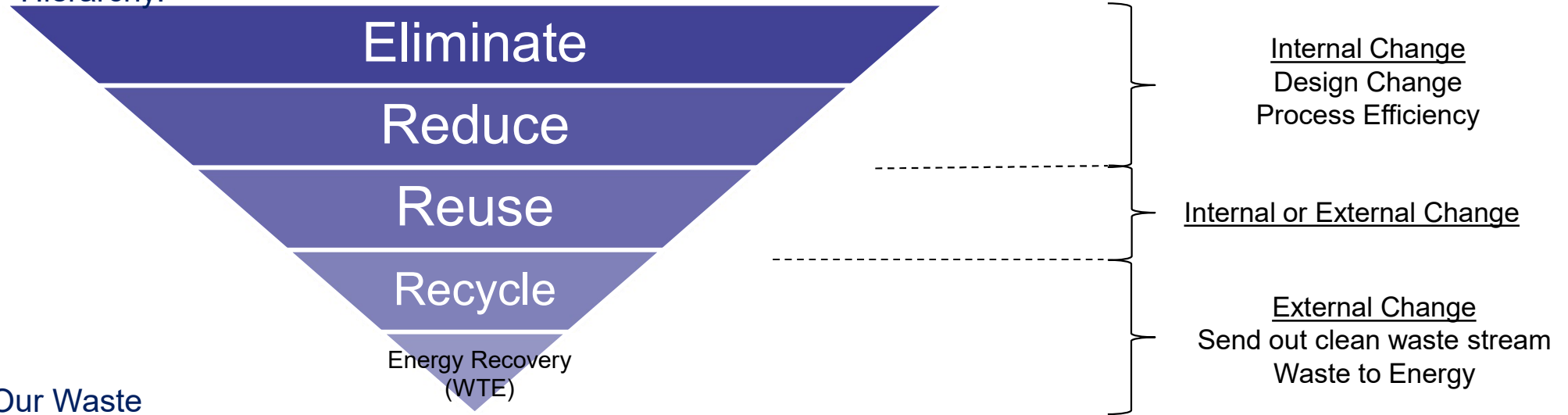
Honda implements its **Green Factory** concept through the following:

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

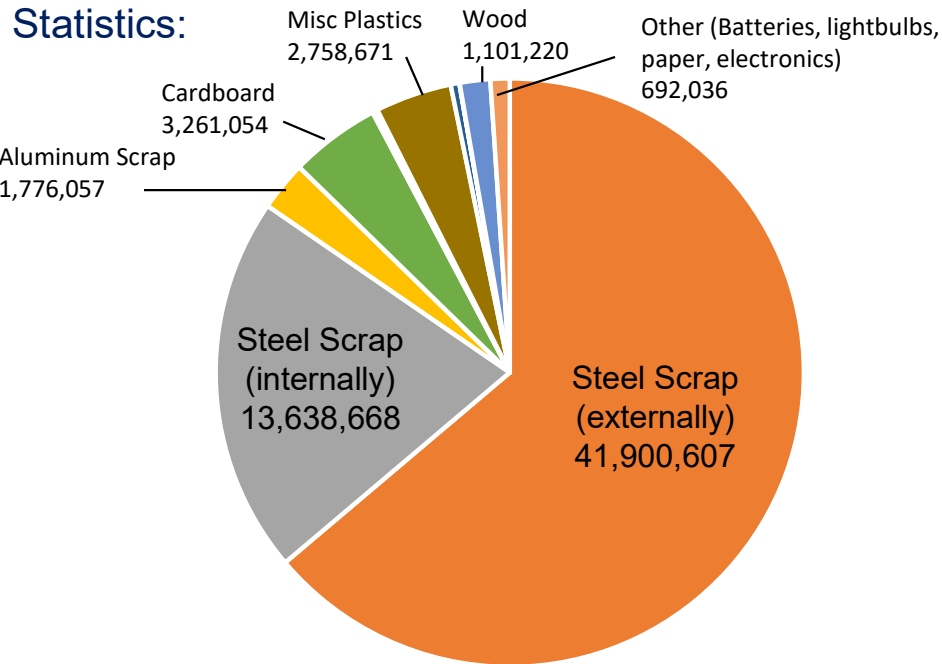


Waste Management Strategy

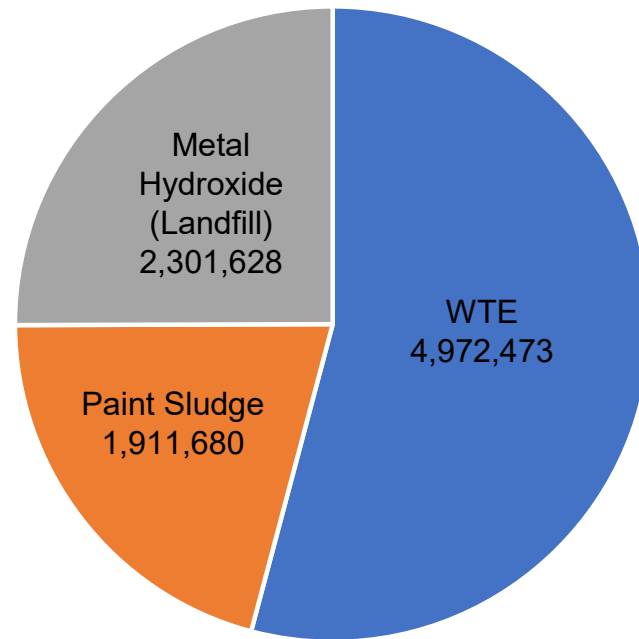
Hierarchy:



Our Waste Statistics:



MAP & ELP Recycled Materials (lbs)
April 21-February 22
Last 10 months



MAP & ELP Other Material Handling (lbs)
April 21-February 22
Last 10 months

Honda is zero landfill by definition (<1% of mfg. waste goes to landfill in NA)

Logistic Initiatives

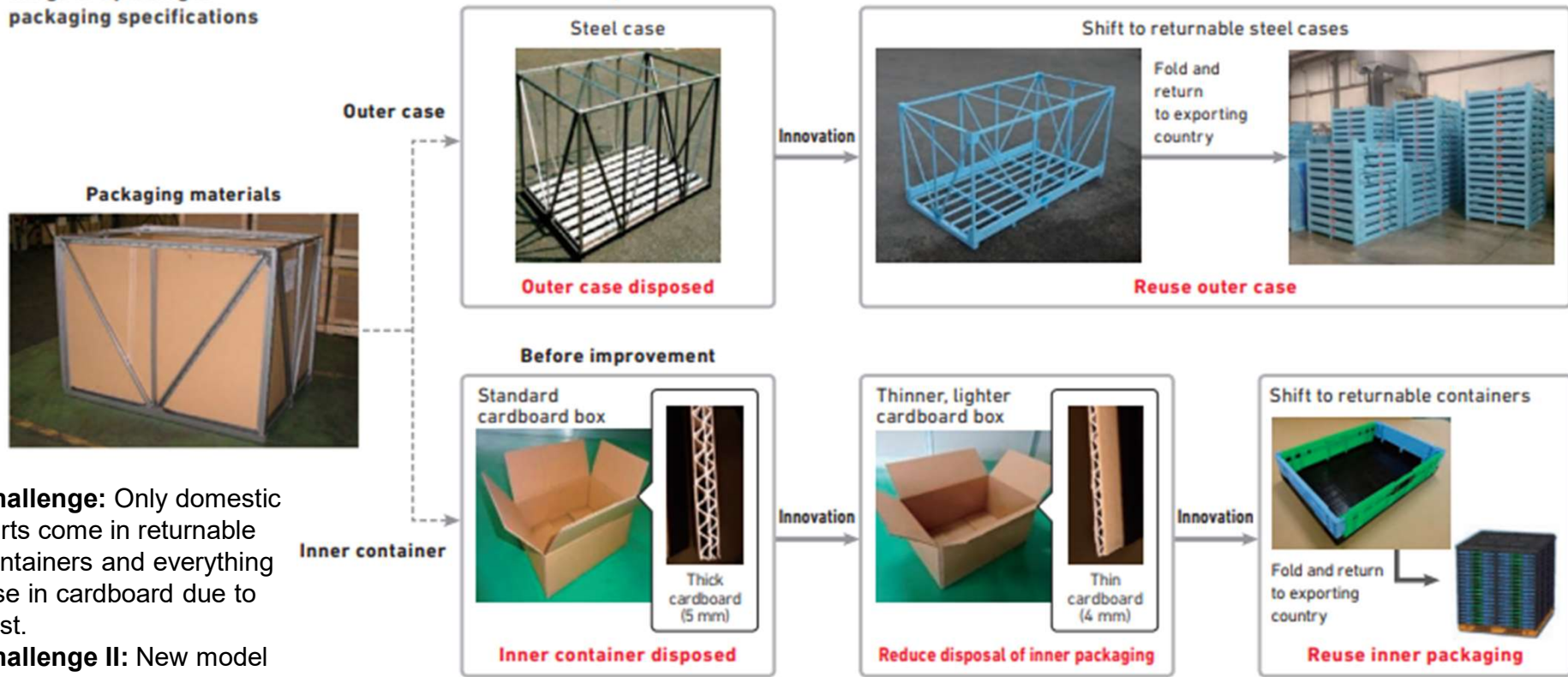
Technological Advancement of Packaging Materials

Honda exports (supplies) parts between factories across different countries and regions, and conducts assembly of vehicles and equipment in the importing countries.

Such export of parts involves usage of packaging materials, which are classified into outer case and inner container.

In the past, these packaging materials were disposed of in the importing country. To counter this, Honda has innovated packaging technology to reuse containers and reduce the weight of packaging materials, thereby reducing both waste and CO₂ output.

Image of updating of packaging specifications



Classification and evolution of packaging materials

Packaging materials	Use	Evolution of packaging techniques
Outer case	Case to be loaded onto containers	Returnable steel cases
Inner container	Container to pack parts, which is then enclosed in an outer case	Use of thin, light cardboard boxes; shift to returnable containers

Challenge: Only domestic parts come in returnable containers and everything else in cardboard due to cost.

Challenge II: New model timing sees an increase in cardboard due to returnable containers not being "ready"

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

\$5.3M investment

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.



Logistics \$/Yr

Total Transportation Cost 19-1	\$3.585 M
Total Transportation Cost 19BIM + AI correction	\$3.141 M

Idea Image:

Updated based on 98kl Data

- Direct to scrap consumers (Mill / Smelter)



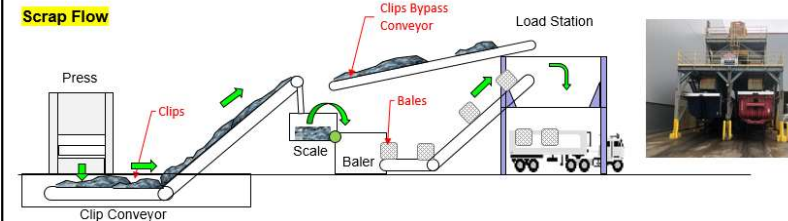
Logistics \$/Yr

Total Transportation Cost 19-1	\$1.362 M	\$2.223 M
Total Transportation Cost 19BIM + AI correction	\$1.372 M	\$1.769 M

Transport Inefficiency Loss

Campus Facilities

Off Line Scrap Processing – Construction Pictures



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 \$20,000 bailer to shred old uniforms



Safety Shoe Re-Use

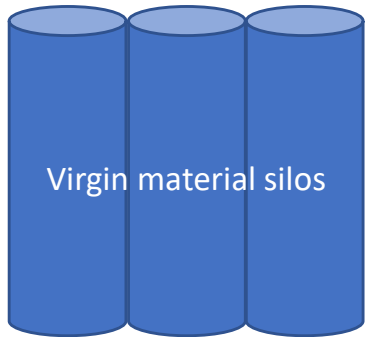


- Purpose: Collect used safety shoes to be re-used for associates in need
- On average we collect 35 pairs of shoes each month.
- Average total weight: 1,700lbs/yr.
- Cost to implement: < \$375
 - Includes: Manpower (1hr/month); cleaning supplies, rubber gloves. Steel drum was re-used from mfg.
- Created 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.

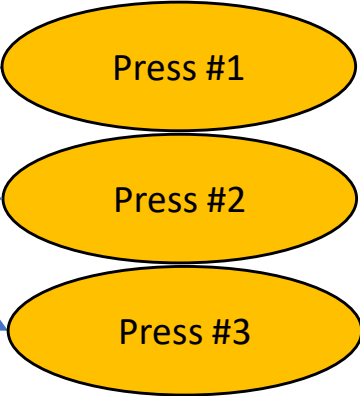


Bumper Regrind

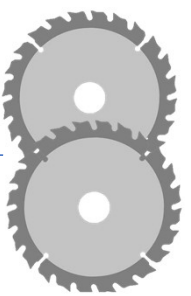
Defective bumpers are “ground-up” and reused in new bumpers



80%
virgin
material



20%
regrind

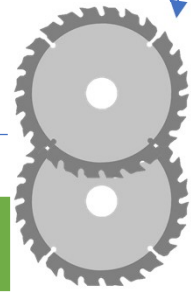


Clean,
uncontaminated,
unpainted gates &
bumpers

Unpainted waste bumper

Contaminated parts,
purge patties, painted
scrap parts

Sent to
recycler



Rebate Info	Pounds	USD
98ki-to-date	285,705	\$54,350.58

	97 ki usage	Assumed Savings
Pounds	4,309,820	861,964
USD*	\$7,214,204.70	\$1,442,841.54

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

NEW: "OOPS" Tagging Program

Intent:

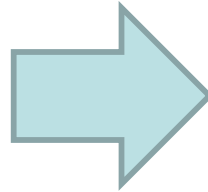
- Reduce recycling contamination
- Improve plant-wide sorting behavior

No one's perfect!...



BIN ID, location, designated waste category

Incorrect waste stream



Level of contamination

Auditor comments

MAP OOPS TAG	
RECYCLING CONTAMINATION NOTIFICATION	
DATE:	12/10/2021
BIN ID #:	
Designated Waste:	
NO! Please leave out!	
The following were 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"/> Scrap Steel/Metal	<input type="checkbox"/> E - Waste
<input type="checkbox"/> Filters/Rags	<input type="checkbox"/> Light Bulbs/Ballasts
<input type="checkbox"/> Aerosols	<input type="checkbox"/> Haz. Waste
<input type="checkbox"/> Other	<input type="text"/>
Level of contamination	
Additional Details:	
Auditor comments	
Questions about this notification? MAP_environmental@na.honda.com 937-553-4010	

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

Virtual Power Agreement (VPPAs)



- Ohio sites' electricity use will be fully offset
 - Offsets 60% of electricity Honda used in North America
- Since Fall of 2021, Honda has purchased 1.012 million Mwh of electricity
- Locations:
 - Oklahoma (wind)
 - Texas (solar)

January 2020



February 2020



March 2020



April 2020



BLUE SKIES FOR OUR CHILDREN

Energy Efficient Equipment

Blowers replacing compressed air



Lighting efficiency



New air supply houses



Bag house variable speed drives



Intelligent Paint Booths

Predictive HVAC control mechanism gets booth air to operating window cheaper and faster

Significantly reduces energy use and related greenhouse gas emissions from auto body painting by improving efficiency

“Wasted” Energy Reduction

End of Shift Energy Conservation Procedure – Implemented Aug. 6th Dept. Wide

Sign. On File

End of Shift Energy Conservation Procedure

Lights

Fans

Monitors

SR1SR2 Pump Motors

And More Not Shown.....

Zone Coordinator must verify task lights have been turned off at the end of the shift*

Zone Coordinator must verify fans have been turned off at the end of the shift*

Zone Coordinator must verify computers have been turned off at the end of the shift*

Zone Coordinator must verify electric motors have been turned off at the end of the shift*

Process Energy Efficiency

By controlling to the WINDOW created by the limits of 65 to 75 deg and 65 to 75%, large utility savings are attainable



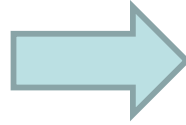
Expanding Hydrogen

BEFORE

Battery
Electric
tuggers



LPG
Forklifts



AFTER



ProGen Engines

Fuel cell systems for a wide range of transportation and mobility applications

**Fuel Cell
Battery**



**H2 Charging
Stations**

- 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
- H₂O is only byproduct
- Safety risk eliminated

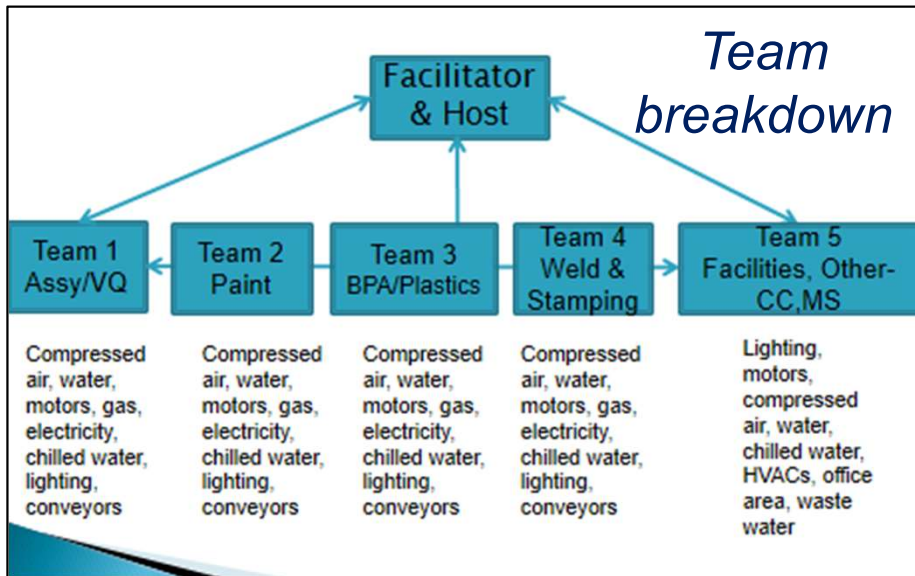
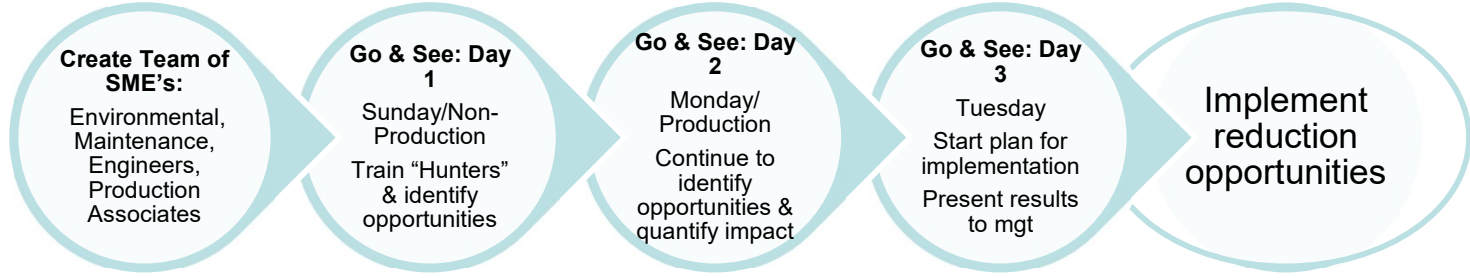
Tugger: Approx 10-15k kwh/year savings

Forklift: Approx 11.5MT/year CO₂ savings

Challenge: Insurance company was heavily involved in the hydrogen storage construction. Required piping size to be reduced and ran on the roof.

Treasure Hunts (Energy Audits)

Process:



Kaizen Info		Plant:	0
Business Unit:			
Process / Equipment:		Originator:	
		Date:	11/2/2021 Set to Today
<input type="checkbox"/> Electricity <input type="checkbox"/> Natural Gas <input type="checkbox"/> Compressed Air <input type="checkbox"/> CA Leak Survey <input type="checkbox"/> Steam <input type="checkbox"/> Chilled Water <input type="checkbox"/> Water <input type="checkbox"/> WWT <input type="checkbox"/> POTW <input type="checkbox"/> Other			
Description:			
Current Situation (Before Kaizen)		Projected Situation (After Kaizen)	
Production Hours		Production Hours	
Hrs/Day		Hrs/Day	
Days/Mo.	Winter/Gas	Days/Mo.	Winter/Gas
Months	Mo.	Months	Mo.
# of units		# of units	
Energy units		Energy Use Before Kaizen (Energy units/yr.)	Energy Use After Kaizen (Energy Units/yr.)
Electricity (kWh) Non-prod	N		
Gas (MMBtu)			
Compressed Air (kSCF)			
Compressed Air Leak (kSCF)			
Steam (kLB)			
Chilled Water (kTon)			
Water (kGal)			
WWT (kGal)			
POTW (kGal)			
Other: Explain			
CO ₂ (metric tons)			
Implementation Cost		\$/unit	Projected Annual Savings
Engineering Services:	\$	\$ 0.07	Electricity (kWh) \$
Material:	\$	\$ 3.95	Gas (MMBtu) \$
Labor: Contract	\$	\$ 0.29	Compressed Air (kscf) \$
Labor: In House	\$	Hourly rate: \$ 69	Comp Air Leak (kscf) \$
Other:	\$	\$ -	Steam (kLB) \$
Other:	\$	\$ 68.99	Chilled Water (kTon) \$
Other:	\$	\$ 1.80	Water (kGal) \$
Other:	\$	\$ 1.80	WWT (kGal) \$
Other:	\$	\$ 1.80	POTW (kGal) \$
Total:	\$		Other: Explain \$
			Total: \$
Simple Payback Period (yrs.):			
Best Solution		OK Solution	
<input type="checkbox"/> Poka-Yoke	<input type="checkbox"/> Mod Standard Work	<input type="checkbox"/> Mod Work Instruction	<input type="checkbox"/> Visual Aid
<input type="checkbox"/> Initial Quality	<input type="checkbox"/> End of Line Quality	<input type="checkbox"/> Employee Training	
Project Type			
<input type="checkbox"/> Operations	<input type="checkbox"/> Capital	<input type="checkbox"/> Maintenance	

Utility Calculation Sheet
used

Treasure Hunts (Energy Audits)

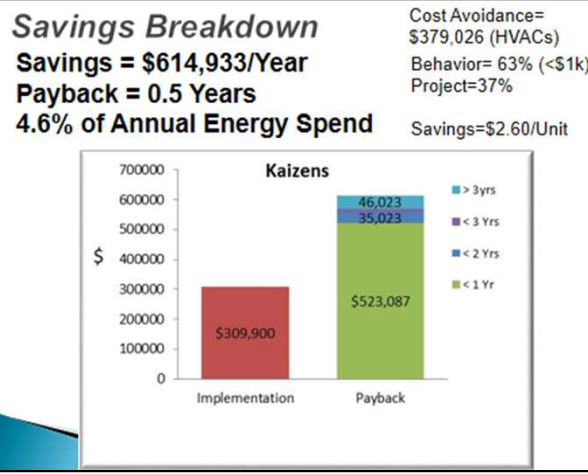
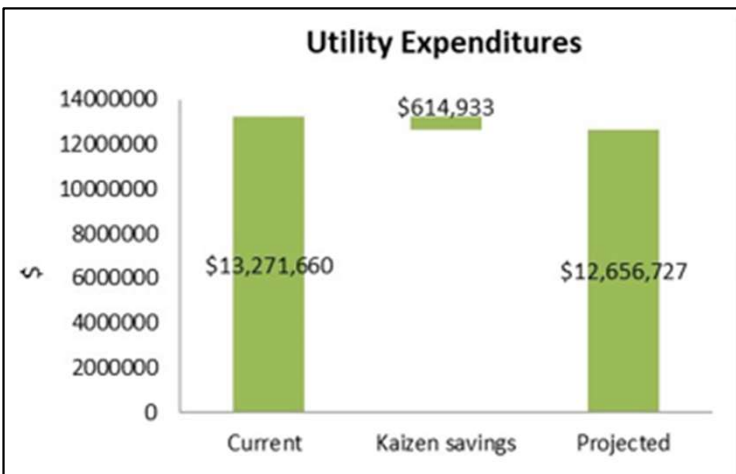
Results:

Most common opportunities identified:

- Convert to LED Lighting
- Equipment left on during non-production
 - EX: Lighting, air handlers, production/maintenance
- Fix compressed Air Leaks

Kaizen ID	Concept	KWH	KWH \$	Total Savings \$	Implementation Cost	Payback		
1	Switch AF Office Lights from Fluorescent to LED	20,436	\$ 1,267	\$ 1,267	\$ 14,750	11.64		
1	Break Area Lighting							
1	Place Door Sealer Pumps valves	421,304	\$ 26,121	\$ 26,121	\$ 7,200	0.28		
1	Set schedule for HVAC to 1/2 on	100,885	\$ 6,255	\$ 6,255	\$ -	0.00		
1	Reduce AF HVAC by 1/2 on	434,928	\$ 26,966	\$ 26,966	\$ 125,000	4.64		
1	Turn off IP Harness Heater	121,377	\$ 7,525	\$ 7,525	\$ 4,000	0.53		
1	Turn off key set transfer during							
1	Change New Model High Bay on schedule	45,742	0	\$ 2,836	\$ -	0.00		
1	Utilize Primer Shaker Timer	8,407	50	\$ 521	\$ 211	\$ 732	\$ -	0.00
1	Setting up seat conveyors	12,983	0	\$ 805	\$ -	0.00		
1	AF Skywalk Lighting Reduction							
1	Replace VQ High Bay Fluoro							
4	AB Zone Task Lighting Alternative	141,005	\$ 8,742	\$ 8,742	\$ -	0.00		
4	Air Leaks	75,634	\$ 4,689	\$ 4,689	\$ -	0.00		
4	Task lighting							
4	D Zone Welders Left On	4,797,299	\$ 297,433	\$ 297,433	\$ -	0.00		
4	Zone Fans left on	773,370	\$ 47,949	\$ 47,949	\$ -	0.00		
4	Air Handlers Left On	306,561	\$ 19,007	\$ 19,007	\$ 20,000	1.05		
5	Turn off lights when not in use	8,078	\$ 501	\$ 501	\$ 501	600	1.20	
5	Turn off outside high mast lights during the day	92,835	\$ 5,756	\$ 5,756	\$ 1,000	0.17		
5	Turn off lights when area not occupied	148,505	\$ 9,207	\$ 9,207	\$ 1,700	0.18		

Overall Annual Savings



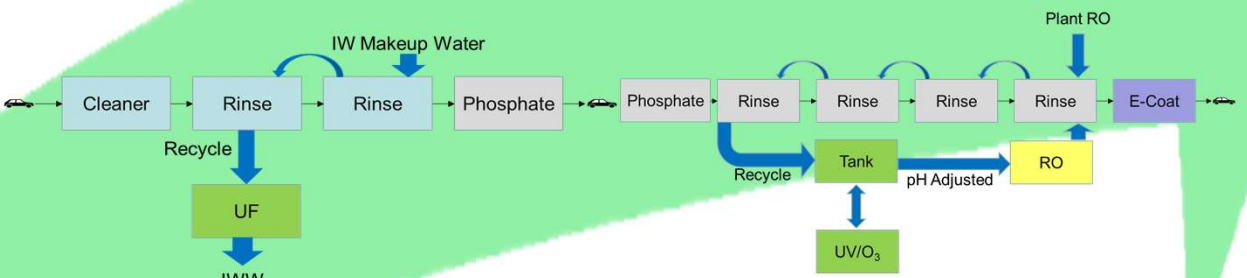
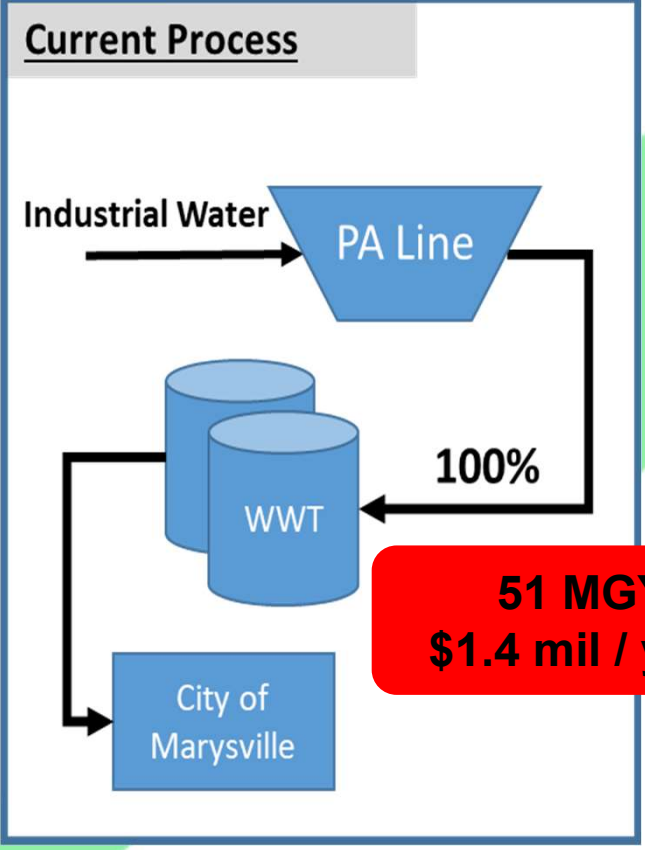
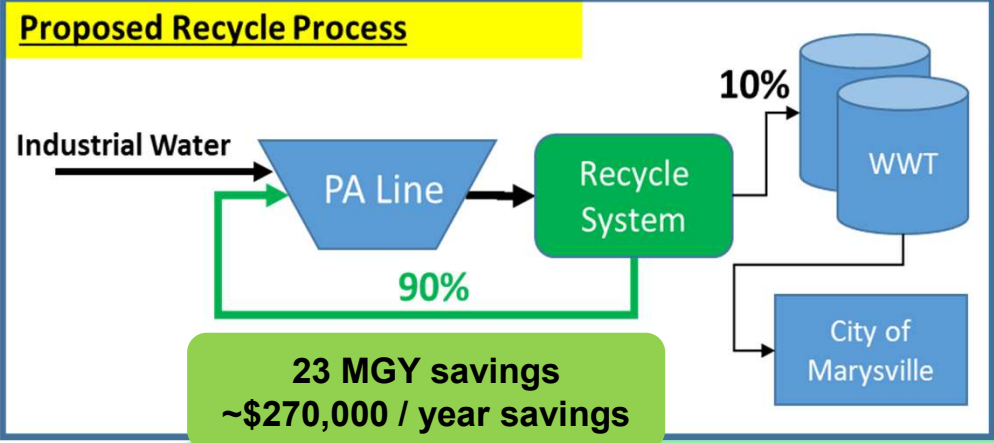
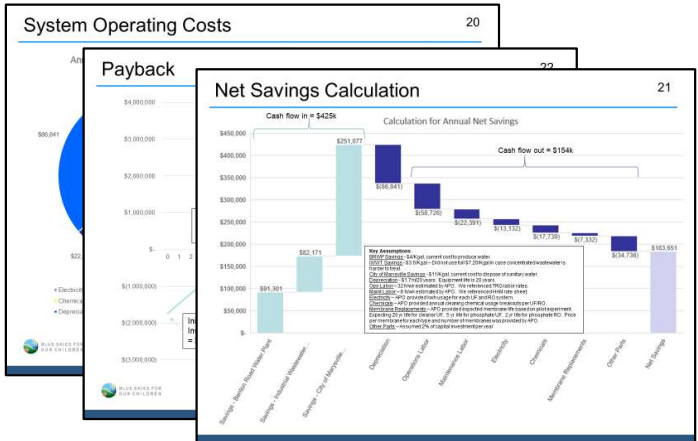
- ### Next Steps: Consultant Comments
- **Good Activities:**
 - Energy Teams with engaged members, knowledge, skills
 - Energy projects Ongoing: lighting and measuring systems
 - Continuous improvement initiatives, best practice sharing
 - **Opportunities:**
 - Monitoring and measurement of energy (compressed air and water)
 - Horizontal energy program involvement with employee engagement
 - Standardized job instruction sheets, processes, and operations
 - Visualize and educate associates about energy
 - Back to basics of weekend energy control-HVACs & lighting
 - Prioritize and implement the identified results

- ### Next Steps: Plant Comments
- **Project Implementation:**
 - Evaluate and prioritize projects
 - Create detail sheets for the "Other Opportunities" and include in the prioritization process
 - Coordinate with production, operations, engineering and maintenance as needed to schedule and implement
 - Plan and budget for implementation
 - Include the Treasure Hunt findings in the Plant Loss activity
 - Have teams present progress reports
 - Department management - monthly
 - Plant management - quarterly
 - Communicate to all employees treasure hunt process and results
 - Explore integration of treasure hunt tool with existing initiatives and other categories such as: Safety, Quality, Delivery, Cost, Morale, Environmental
 - Develop schedule for plant internal treasure hunt

Challenge: Once opportunities were identified, management wanted to implement immediately.

- Advice: evaluate feasibility of implementing opportunity before presenting to management
 - What will it take to implement and is the benefit worth someone's time to manage
 - EX: Computer monitors

Paint Wastewater Recycling



- ### Expected Result (ELP):
- 28M gal/year water reduction
 - \$270,000 cost reduction in maintenance, equipment & water costs
 - 6.42-yr payback
 - \$1.8M implementation cost
 - (cost to complete without major innovation in E-Coat & Pre-Treat)

Honda New Environmental Vision Package

Honda Environment and Safety Vision
 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!"

Honda's approaches to realize the society with zero environmental impact as early as possible

- Carbon neutral
- Triple ZERO 2050
- Shifting to clean energy
- Resource circulation

Honda Environmental Vision by driving Triple ZERO forward

2018 2020 2021 2022 2023 2024 2025 2030

HONDA
The Power of Dreams

on Strategy Roadmap for 2030
HONDA
22% water reduction by 2030

Zirconium Technology

Performance Agreement using Water & Wastewater Contractor Technologies

Integrate ENV resource reduction into design thru New Model and ESD

BP Eco-box

Treasure Hunt / Pilot studies

Draft water restrictions

New technologies and innovation, industry monitoring

Form NA Water and Waste Subcommittees

MAP, ELP, Wastewater Recycling

WWT re-use for gray water

Cooling tower blowdown recovery

Condensate recovery

Establish Water usage baseline

Set water reduction targets

SMA, HMIH, HCH

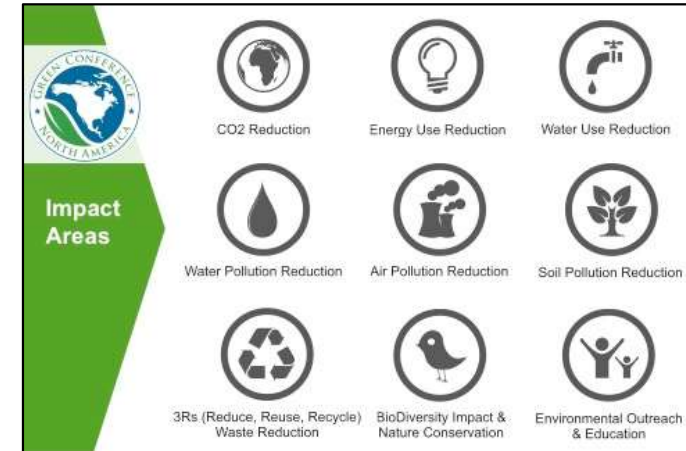
Wastewater Recycling

TARGETS STRATEGY PROJECTS

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 2020, over 70 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

Environmental Impact Tools & Forms

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

Project Environmental Impact Form (E-flow, J-flow, New Model, Expense)

NA Region - Project Environmental Impact Form

Environmental Impact Form Evaluation

Project Leader: ENVI / Green Factory

Name: _____ Signature: _____

Project Environmental Impact Assessment (Pre E Plan)

Project Name: _____ Project Description: _____

Project Leader: _____ Expected Start Date: _____ Expected End Date: _____

Pre E Plan: Will the project:

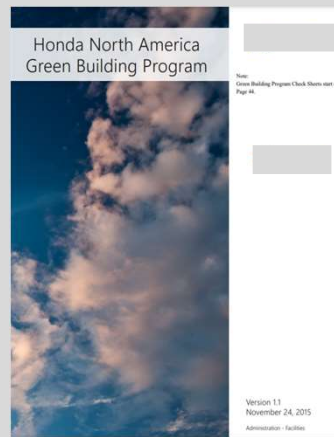
Pre E Plan	Yes	No
Introduce new manufacturing technology or processes?		
Involve any demolition and/or renovation?		
potentially increase exterior noise?		
disturb land clearing, grading, etc.		
require any tree or wooded areas?		
drainage, pond, or natural waters?		
add any new or replace any exist external exhaust?		
activity cause particulate or dust?		
involve storage tanks (liquids)?		
involve any melting or molding of?		
include new refrigeration equipment?		
include any new material, new or chemical reaction process to store construct a new roadway, parking		
allow an increase in process capacity overall production rate?		
allow the process to produce a by-product?		
involve any change or addition to wastewater generation, or change use any solvents, material containing activity?		
impact electricity, natural gas, wa increase or decrease usage or an Other		

Environmental Characteristic Changes: estimated environmental performance impacts

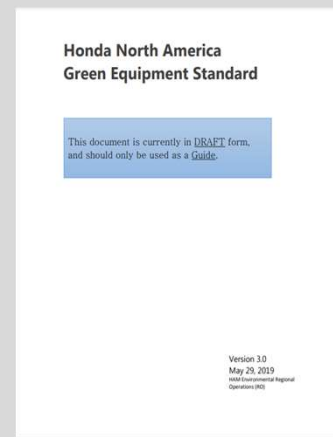
Environmental Characteristic	Units/Year	Estimated Impact (increase/decrease)
Electricity Use		ED Revision after ED
Natural Gas Use		
Water Use		
Waste Generation		
Other		

Version 1.1 November 24, 2015 Administration - Facilities

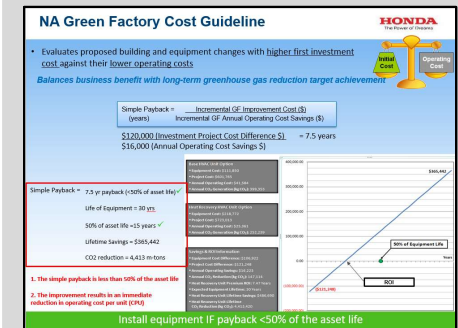
Green Building Standard



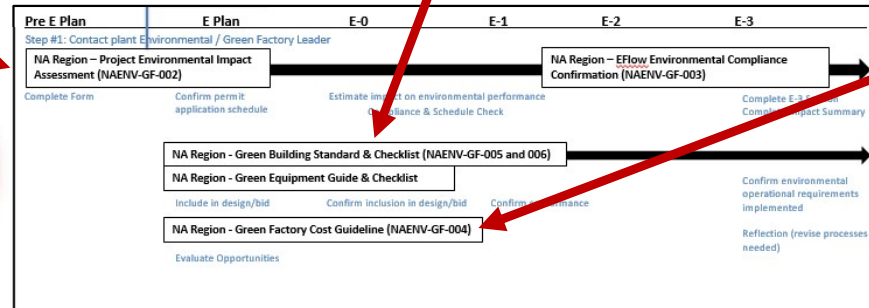
Green Equipment Standard



GF Cost Guideline



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



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

- These documents & forms are only helpful if the project leader knows about them and what is their responsibility.
- Requires regular contact with Project Leaders by Environmental Team
- Path forward: Created specific training for PL for the specific Environmental plant to make that connection with the PL.



Mission:

Cultivate Honda’s environmental efficiency and awareness

Purpose:

Support the Honda 2030 vision of creating a sustainable society by providing a platform for associates to suggest, get involved in, and lead initiatives within their company(s)

Key Initiatives:

Earth Day

– Plan and execute plant-wide events celebrating Earth Day and highlighting Honda’s environmental efforts

Environmental Treasure Hunt Teams

– Work with Honda Environmental Associates to plan, execute, and follow up on Environmental Treasure Hunt activities at our plants.

Community Outreach

– Seek out and sponsor outreach programs in the area of sustainability such as: community center beautification, school sustainability education, nature preserve beautification/improvement, etc.

Who:

Any associate passionate about working towards a sustainable society

Challenge:

Involvement of associates at all level (production to office to management)

- Covid
- Email access
- How to get associates to care

Targeted Impact Areas:



Path forward: Honda NA recently completed a company-wide org change, therefore BRGs are “re-setting”.

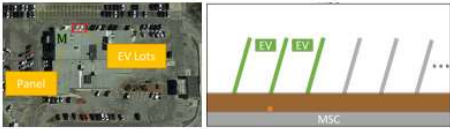
EV Chargers

EV Chargers

- Installed 5 EV chargers across campus- each with 2 charging ports
 - For associate pool car usage only
 - \$35K investment

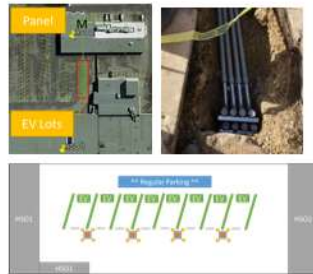
• MSC:

- Short conduit run
- Minimal impact to associate



• HSO:

- Pre-existing conduit
- Short conduit run
- Minimal impact to associate
- Purchasing pool car trips:
 - Frequent
 - Short distance



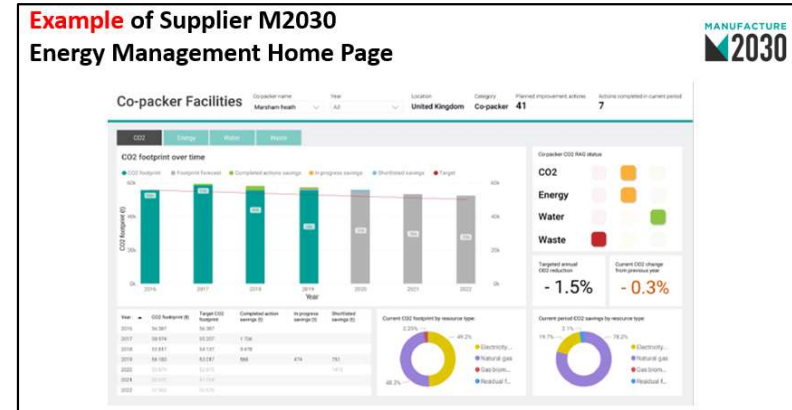
Challenge: Manpower & Cost

- Struggle hiring manpower needed to run program
- Costs vary per location, running conduit is \$\$\$
- Covid remote work policy reduces utilization

Supply Chain Sustainability

Green Energy Program with M2030

- Honda has about 60 suppliers who have committed to GEP
- Purpose is to provide suppliers a low cost, comprehensive Energy Management System showing data visualizations/trends and easily allocate data to customers in one platform



Sustainable Packaging Guidance for Automotive Manufacturing Operations – Supplier Partnership Collaboration

- Five OEMs (Honda is included in this number) came together to establish guidance document
- Purpose is to help automakers and suppliers source sustainable packaging designs used in automotive manufacturing operations
- Guidance Document: <https://www.supplierspartnership.org/sustainablepackaging>



Edison Energy VPPA for Suppliers

- Approved pilot bringing on suppliers to Honda's VPPA program
- Supplier commitment finalized in 2020

SMART ENERGY DECISIONS

Industrial Sourcing Renewables, Wind - January 21, 2021

Honda obtains 120 MW of wind through VPPA

Following a VPPA last September, Honda will receive 120 MW of renewable power from the recently completed Boiling Springs Wind Farm. Project owner RWE Renewables announced on Jan. 20 that the offtake is one of the largest-ever renewable energy purchases by the automotive industry.

The 148-MW Boiling Springs Wind Farm is the first onshore wind farm in Oklahoma. It is powered by 60 GE turbines and came online in late December.

"After several years of development, we are thrilled to see this project fully operational in the Southwest Power Pool (SPP), a new market for us," Silvia Ortin, COO North America of RWE said in a statement. "SPP is a highly-attractive market with considerable potential for working with new customers in the corporate, industrial and utility segments. As always, we appreciate the local support from the community and our landowners to help us bring Boiling Springs from development through construction and now to successful operation."

HONDA
The Power of Dreams

Honda Secures Auto Industry's Largest Renewable Energy Purchase

Seeking to slash CO₂ emissions from its North American manufacturing operations, Honda has entered into long-term virtual power purchase agreements (VPPAs) for renewable wind and solar power that will cover more than 60% of the electricity that Honda uses in North America.

These VPPAs will enable Honda to fully offset the remaining carbon intensive grid-supplied electricity being used in its Ohio, Indiana, and Alabama automobile manufacturing operations, and will help the company meet its voluntary carbon reduction goal. As a result of the deal, Honda is one of the top automakers globally in the adoption of renewable energy to power its operations.

Starting in fall of 2020, Honda will purchase 530,000 MWh/year from 120 MW of wind power generated by the Boiling Springs Wind Farm in Oklahoma, a 150 MW development of the energy company E.ON. Then in fall of 2021, Honda will secure an additional 492,000 MWh/year from 200 MW of solar power generated



“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

Lisa Majchrzak, Environmental Coordinator
Honda of America Mfg. Inc., 24000 Honda Pkwy., Marysville, OH 43040-9251
937-553-4010 lisa_majchrzak@na.honda.com

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.

Kailynn Cerny, Green Factory Leader
Planning and Strategy | Facilities | Environmental | ELP
Honda Development Manufacturing,, East Liberty Auto Plant
11000 State Route 347, East Liberty, OH 43319
937-642-7333 ext. 65253 Kailynn_Cerny@na.honda.com

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.