

CARBON ACCOUNTING AND GOAL SETTING

To Address Supplier Surveys

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UCHIYAMA MFG AMERICA LLC

What Do We Do?



TOYOTA



SUBARU



HYUNDAI



UCHIYAMA MFG AMERICA LLC

- Before Carbon Accounting
- 2015 - Internal Requirements
 - Portfolio Manager
 - Electricity, Diesel, Water
 - 3489 CO2E metric tons



PROJECT DRIVERS

- 2019 External
 - M2030 – product per OEM
- 2022
 - UMC & M2030 Scope
- 2023
 - July reduced to 1685 CO2E



PROJECT SCOPE



Focus Areas

1. Review/Research carbon emissions, GHG protocols
2. Carbon Accounting:
 - Scope I and II emissions
 - Scope 3 emissions and major components
3. Energy Assessment
4. Roadmap to achieve target reductions

PROJECT TEAM

Uchiyama MFG America

- Teddy Chrisman, EHS & Maintenance Manager
- Rusty Rose, President & Plant Manager
- Kensuke Nishinaka, VP and Engineering Manager
- Lianne Hayford, Asst. Plant Manager & Quality Lead

Waste Reduction Partners

Land of Sky Regional Council / NCDEQ partnership

- Land of Sky employed Summer Associate, Michael Zorger

Duke University

- Dr. Jeremy Pare, Ph.D., Project Advisor, Nicholas School of Environment

WRP Team:

- Eric Soderberg
- John Roberts
- Kim Van Niekerk
- Terry Albrecht

EPA Grant Supported

CARBON ACCOUNTING PROJECT:

UCHIYAMA MANUFACTURING AMERICA

WASTE REDUCTION PARTNERS



PROCESS

Calculation



Welcome to the GHG Emissions Calculation Tool
A calculation tool for estimating GHG emissions based on the GHG Protocol



Data Collection



Assessment

Waste Reduction Partners
PRE-ASSESSMENT SURVEY

Client: Building:
Year Built:

Site Contact: Name: Title:
Street: City:
County: Phone:
Mobile:

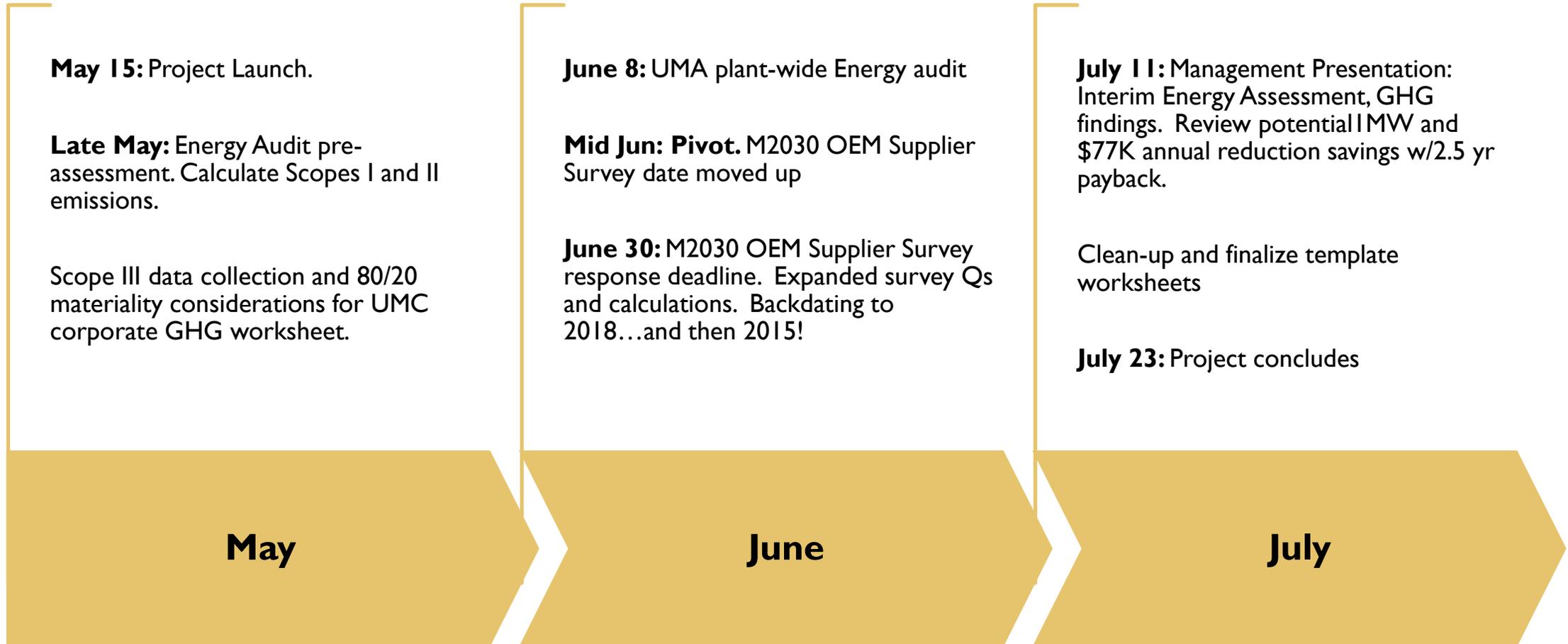
Mailing Address: State - NC: Zip:
Email:

Site Information: No. of floors:
No. of occupants:
Hrs. occupied per week:

After-hours usage/yr. Use (office, etc.):
Floor area (GSF):

Cross-functional data and information sourcing informed and enabled GHG calculations, site energy audit, and future improvement efforts.

TIMELINE: KEY DATES



TOOLS

Research

- Customers: Corporate ESG reports, targets and commitments
- Internal: JPA, EUR reporting requirements on large businesses.

Emissions Factors

- EPA Emissions Factors hub
- GHG Protocol's “Cross-Sector Tools”
- Internationally – IPCC Emissions Factor Database; UK DEFRA Emissions Factor Toolkit; Carbon Footprint
- Uncommon/Specific – EPA TRACI, EEIO Lifecycle Emissions Factors; LCA Databases (e.g., EcolInvent, GaBi, SustainableMinds)

GHG Calculations

- Greenhouse Gas (GHG) Protocol Emissions Calculation Tool
- EPA Center for Corporate Climate Leadership Calculator Tool
- GHG Protocol Corporate Standard (online trainings + calculation guidance)

PROJECT OUTCOMES: WRP ENERGY ASSESSMENT

Low-Cost Measures

215,000 kWh/yr

151,800 lbs CO_{2e}

- Set back HVAC - RTUs
- Ovens Scheduling
- Motor Cog Belts
- Compressed Air Leak Program
- Cooling Tower Motor Controls
- Boiler System insulation

Capital Cost Measures

758,00 kWh/yr

510,100 lbs CO_{2e}

- HVAC Controls & Economizers Retrofits
- Compressed Air Area Booster
- Dust Collection VFDs
- Lighting Completion – LED
- Water Heater Replacement
- Emission System Controls.

On-site PV Solar Proposals

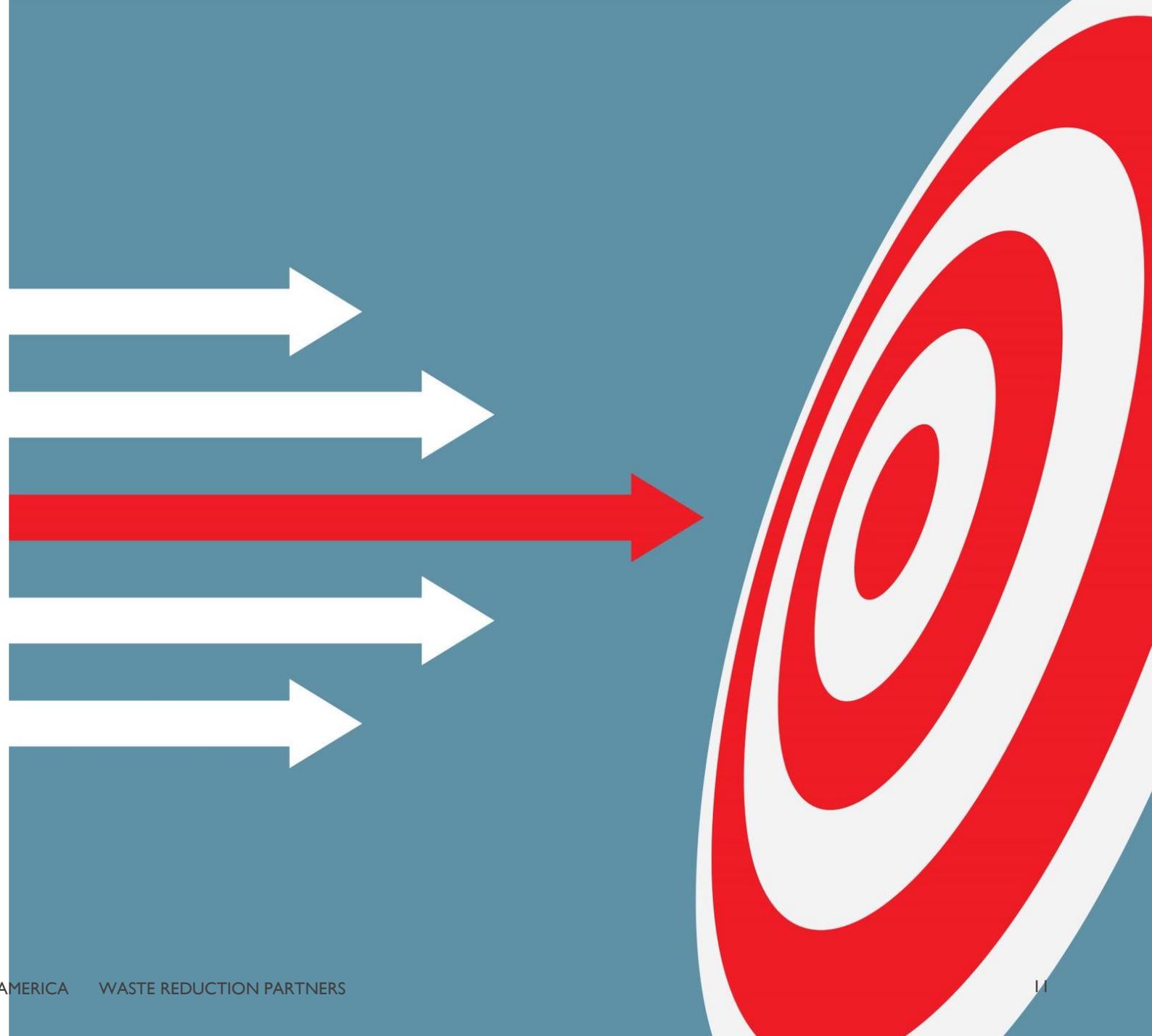
414,300 kWh/yr (output)

278,000 lbs CO_{2e}

- Rooftop Proposal
- 8 year Payback w/Incentives

PROJECT OUTCOMES: NEW REDUCTION TARGETS

Near- & Mid-Term	Long-Term
3% annual CO ₂ e reduction	Net-Zero by 2050
<ul style="list-style-type: none">• Raises UMA's previous 2% annual reduction target• Aligns to Toyota's 14% absolute CO₂ emissions cut from FY2018 baseline by FY2026 for all suppliers.	<ul style="list-style-type: none">• Aligns to multiple OEM customer pledges.• Pushes UMA to continually consider CO₂ as part of ongoing capex and operational decisions.



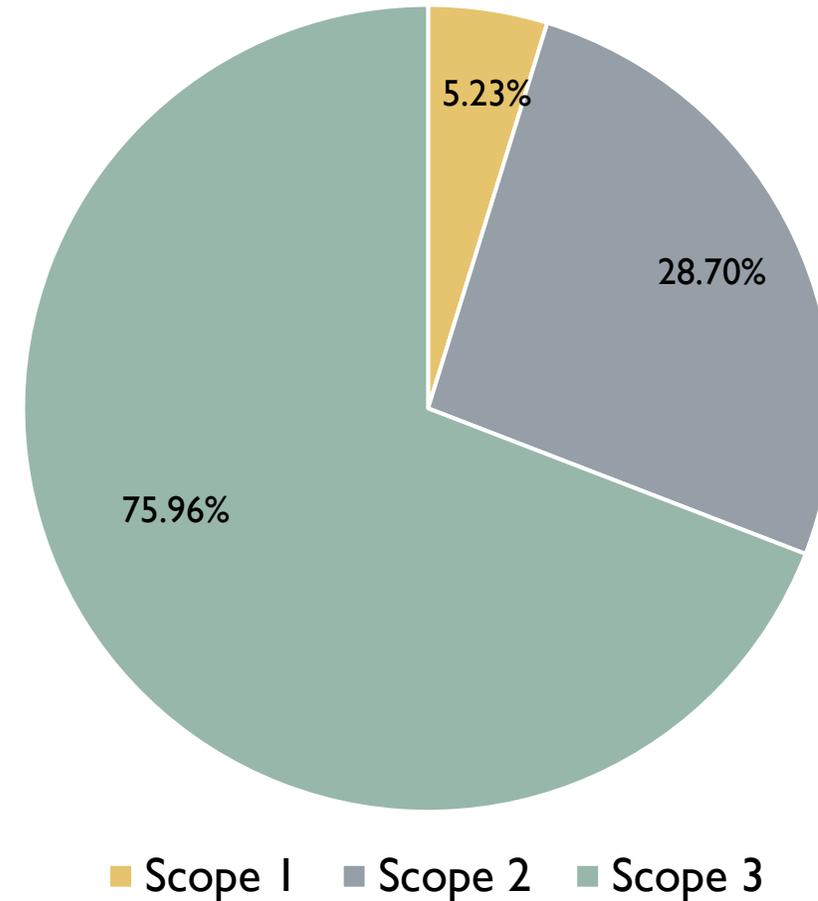
PROJECT OUTCOMES: EMISSIONS WORKSHEET

Assumptions:

- Doubles current Purchased Goods and Services; and Upstream T&D
- 50% value for Downstream T&D (i.e., Domestic vs Int'l)

Excludes:

- Capital Goods
- Processing, Use, and End-of-Life of Sold Products, Leased assets



LESSONS LEARNED



Prioritization

- **Time:** Be realistic (goals, needs, collection plans, deadlines, etc.)
- **Competing Interests:** Customers versus Internal. Required vs Nice-to-Do



Targets & Goal Setting

- **Research:** What are Customer targets/drivers near- and long-term? Who/What driving them?
- **Scope 3:** Art, not science
- **GHGs:** Leverage off-the-shelf calculator tools (GHG Protocol, US EPA)



Management

- **Data collection:** You can't manage what you don't monitor!
- **Process:** Tie to ISO, KPIs, etc. Otherwise, no ownership!
- **Business:** Compliance to Opportunity (Ops/CapEx, Marketing, etc.)

Q & A

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Waste Reduction Partners

US EPA Grant Supported Project

Need Assistance with Your Carbon Reduction Goals?

Initiate an Assessment with
Waste Reduction Partners.

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