



NEW TOOLS FOR EMISSION-TARGETED DEMAND RESPONSE

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LEEM



A NATIONAL SUMMIT ON
SMART GRID AND
CLIMATE CHANGE

OCTOBER
13-14 2015
WASHINGTON, DC

What LEEM Is

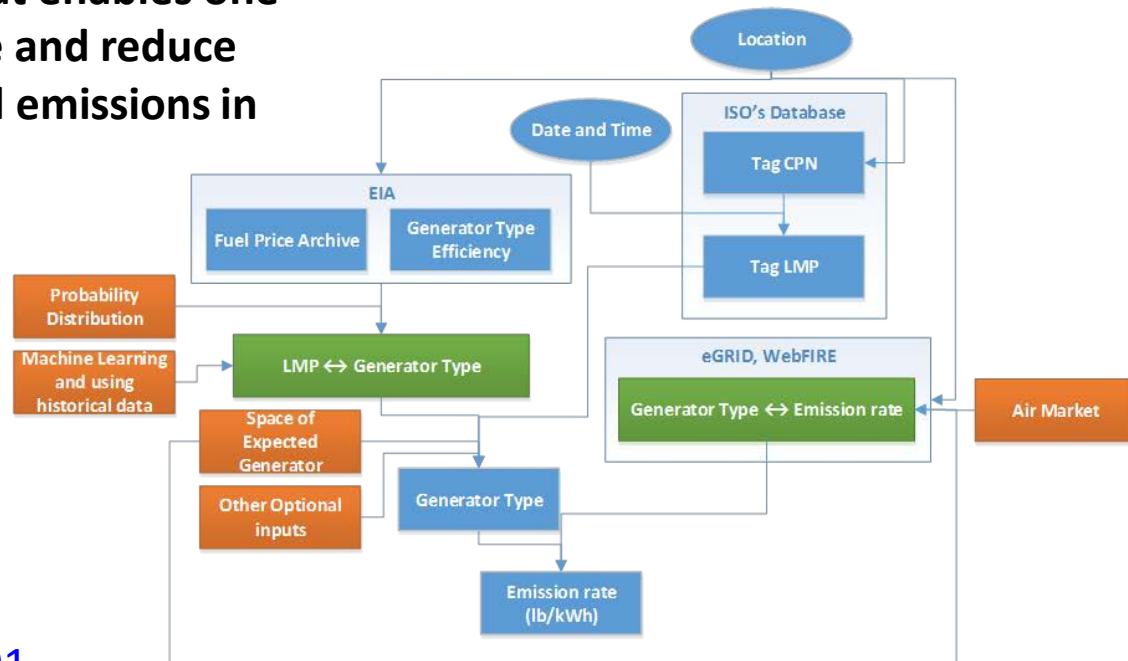
Fossil fuel combustion to generate electricity is the single largest source of CO₂. Beyond reducing electricity use, how can we reduce THIS source of emissions?

LEEM is a new big-data tool that enables one to automatically track, manage and reduce their specific electricity-related emissions in real time at very low cost.



**Smart Energy for a
Cleaner Great Lakes**

<https://vimeo.com/123342691>



How LEEM Works

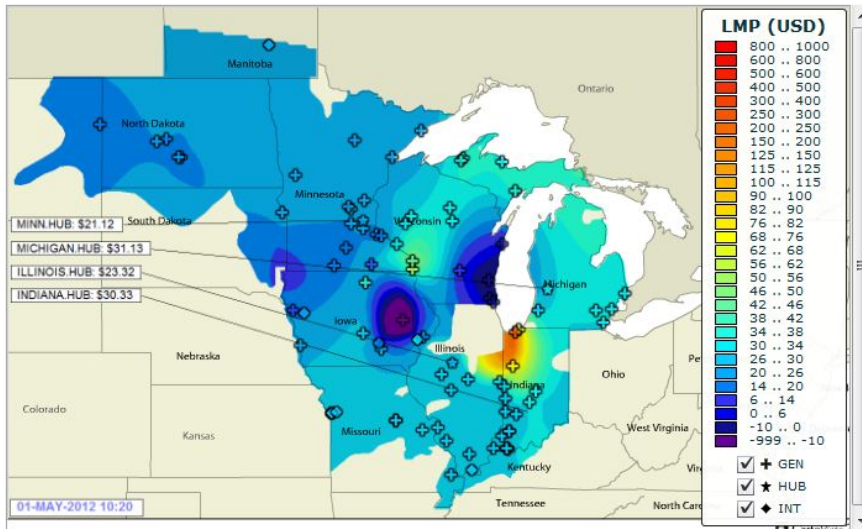
LMPs
(Locational
Marginal Prices)



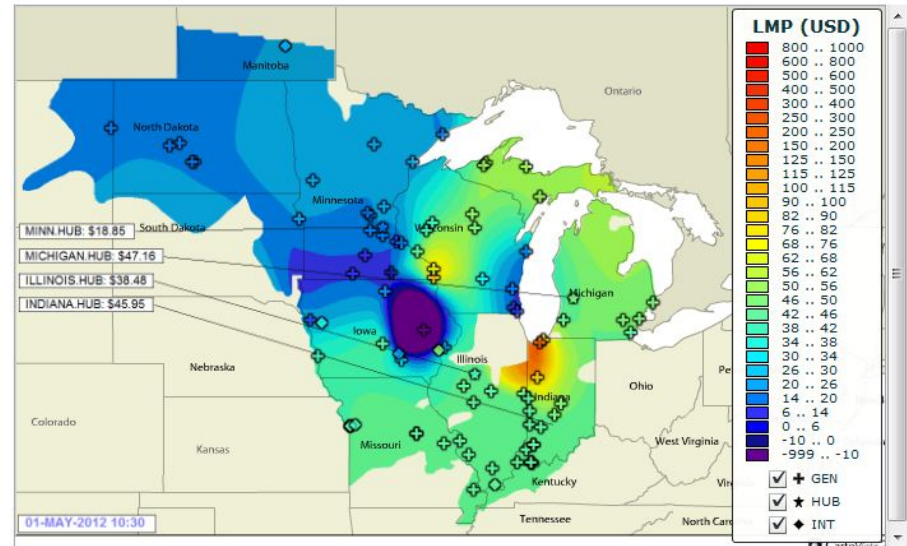
Marginal
Generating Unit
Type



Real-Time
Emissions

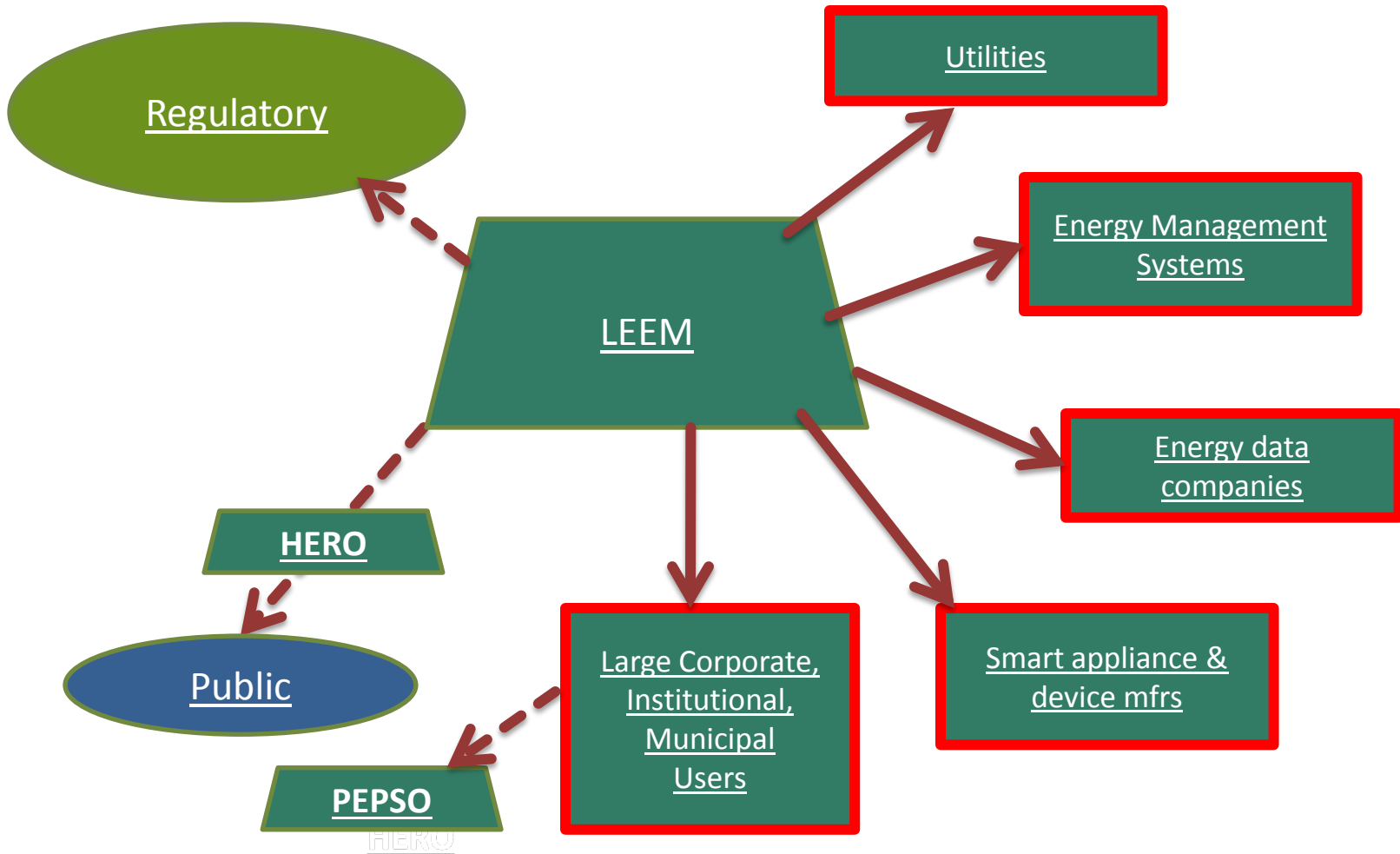


10:20 AM



10:30 AM

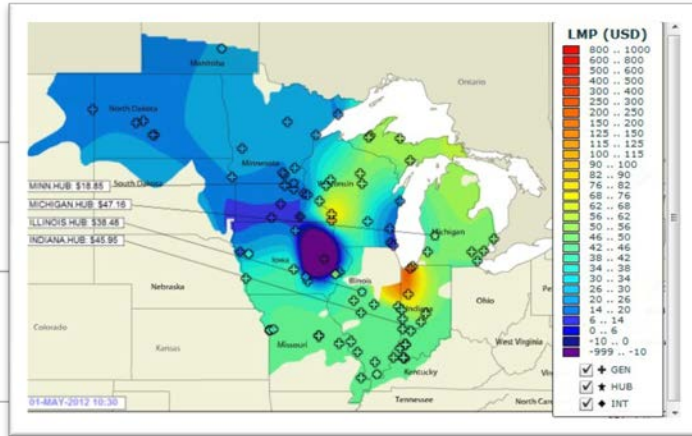
Who LEEM Benefits



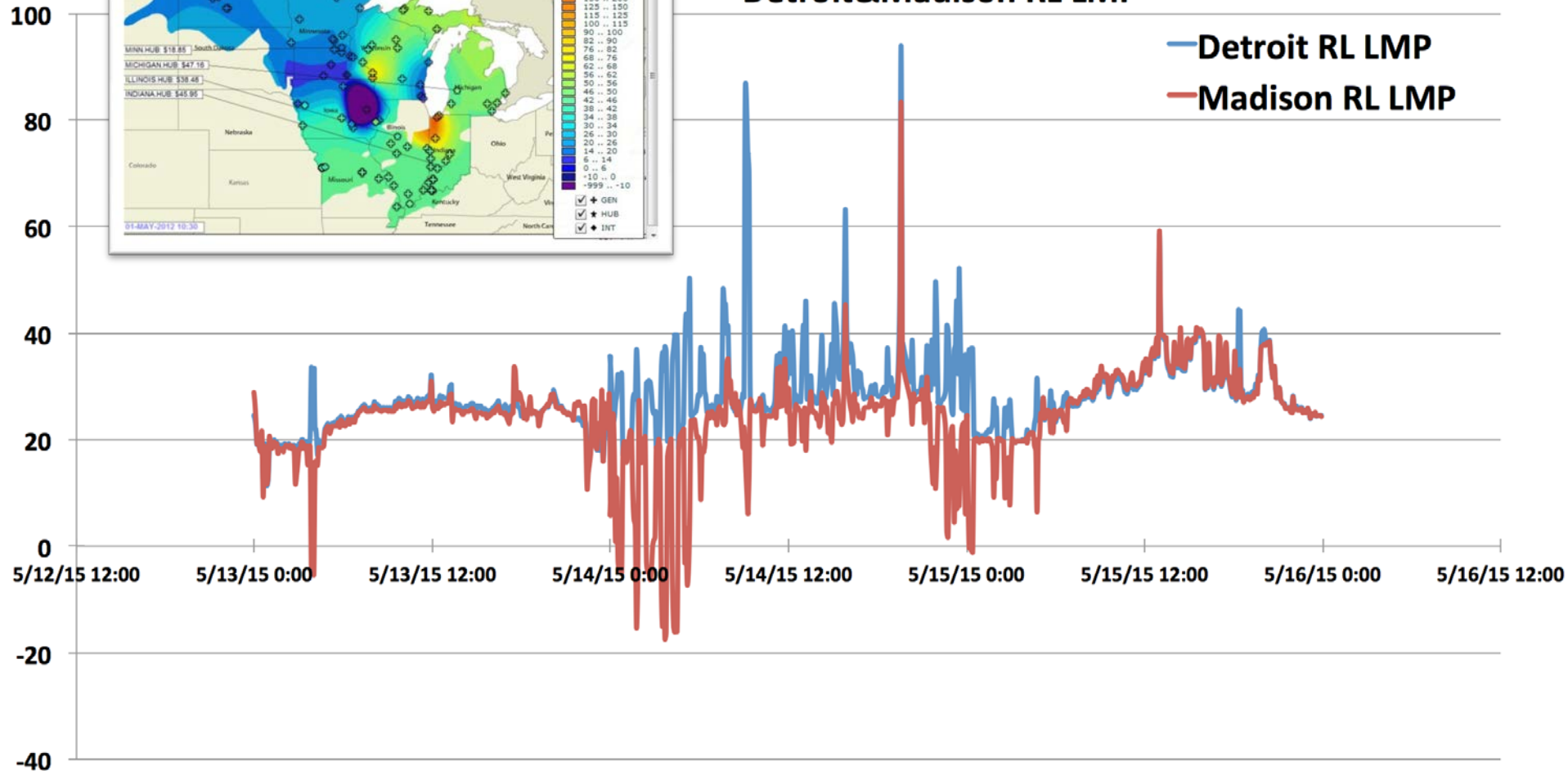
Who LEEM Benefits

- Environmentally concerned organizations & innovative energy management companies:
 - Managing and reducing carbon at low cost using location-specific electricity-related carbon emission measurement, management, & reporting
 - Carbon footprint calculator
 - Load switching away from high-carbon emission periods
- Cutting Edge Utilities:
 - Greater customer engagement (i.e. marketing)
 - Higher energy efficiency adoption and persistence rates
- Innovative Policy Maker & Regulators:
 - Innovative environmental demand response applications
 - More granular and dynamic energy-emission modeling

$$\text{LMP} = f(\text{space, time})$$

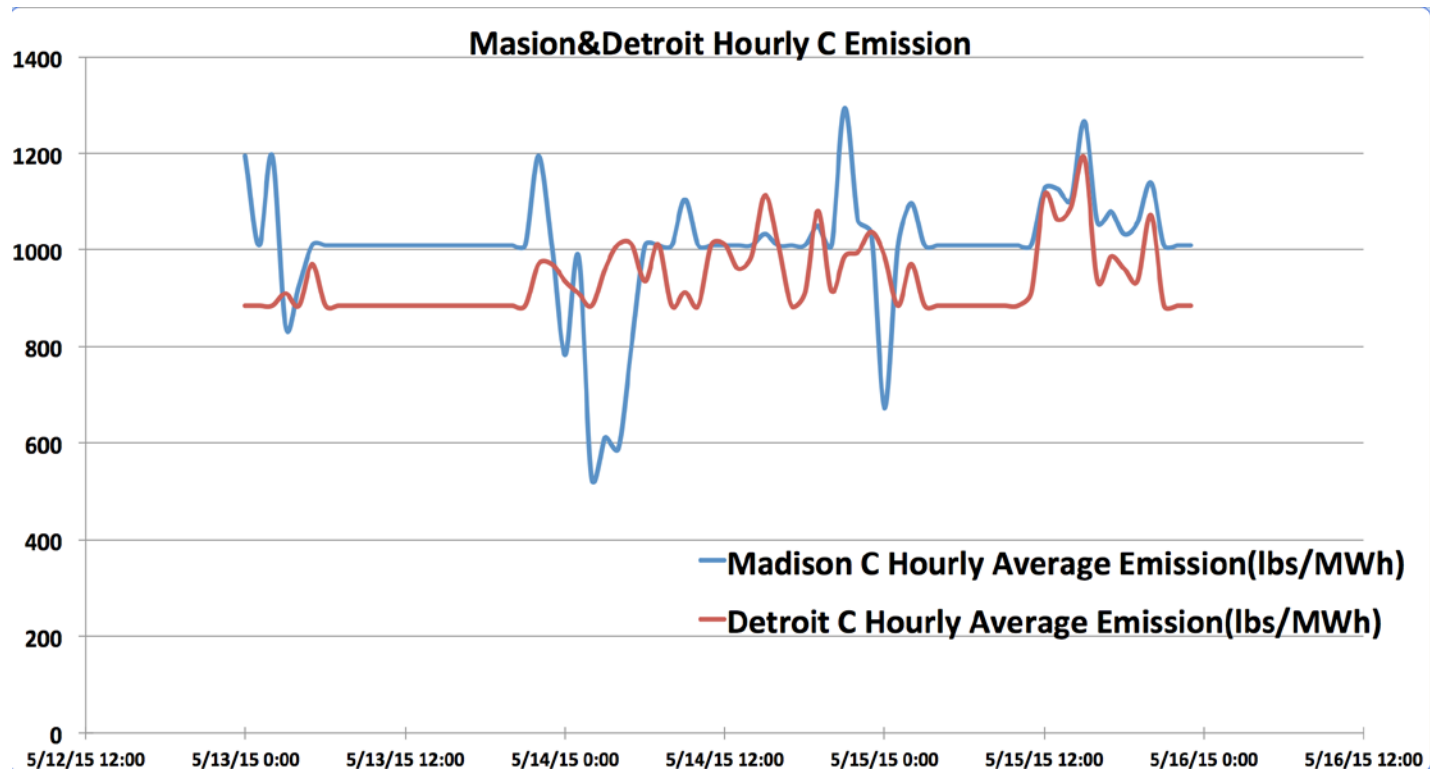


Detroit&Madison RL LMP



LMP to LME

Locational Marginal Emissions

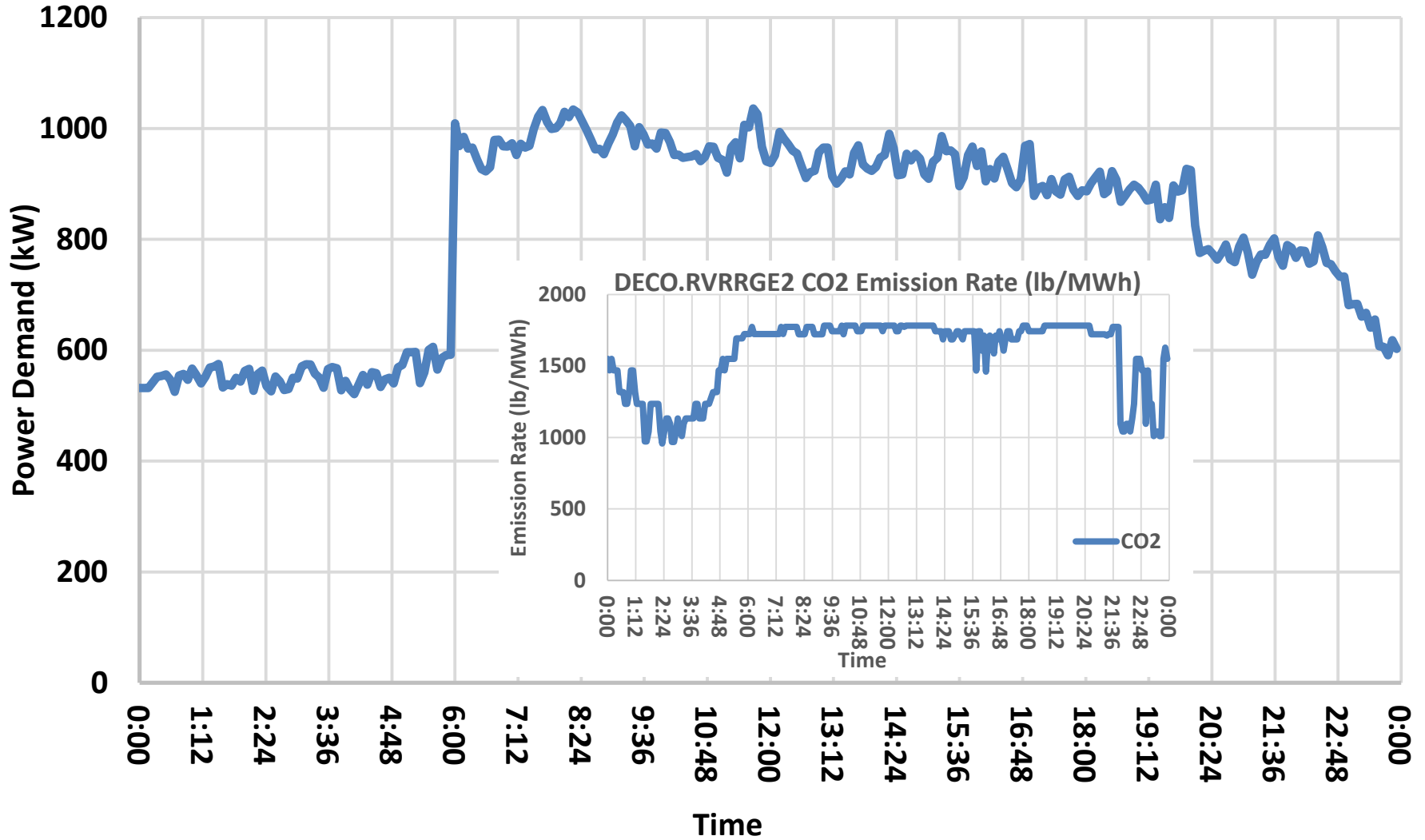


Pilot with HCS – HEPTA Control Systems

- Chrysler House –Detroit
 - One of over 50 Bedrock Real Estate Buildings
- Carbon Footprint & Carbon Mgt

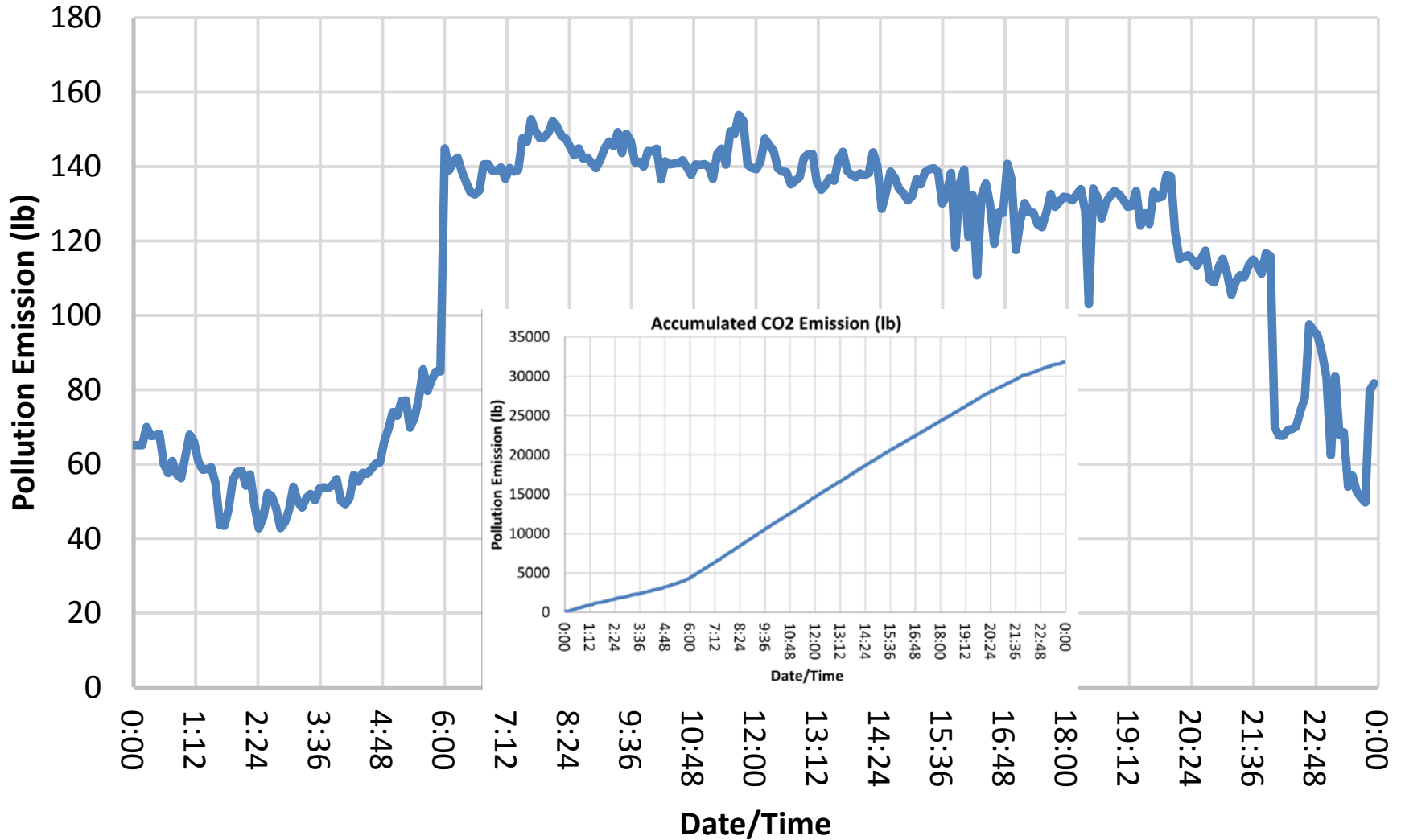


Chrysler House Power Demand (kW) on 08/20/2015

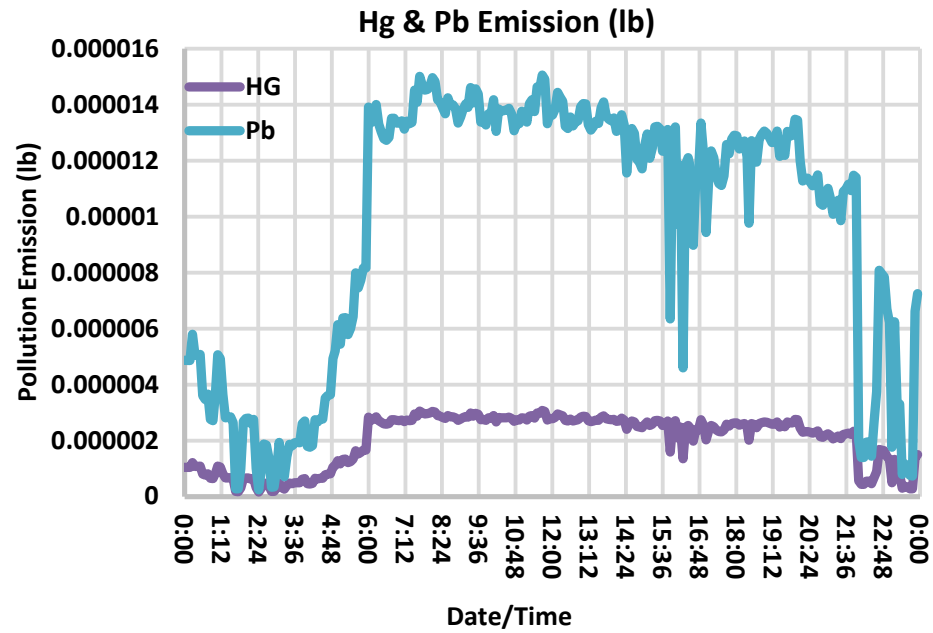
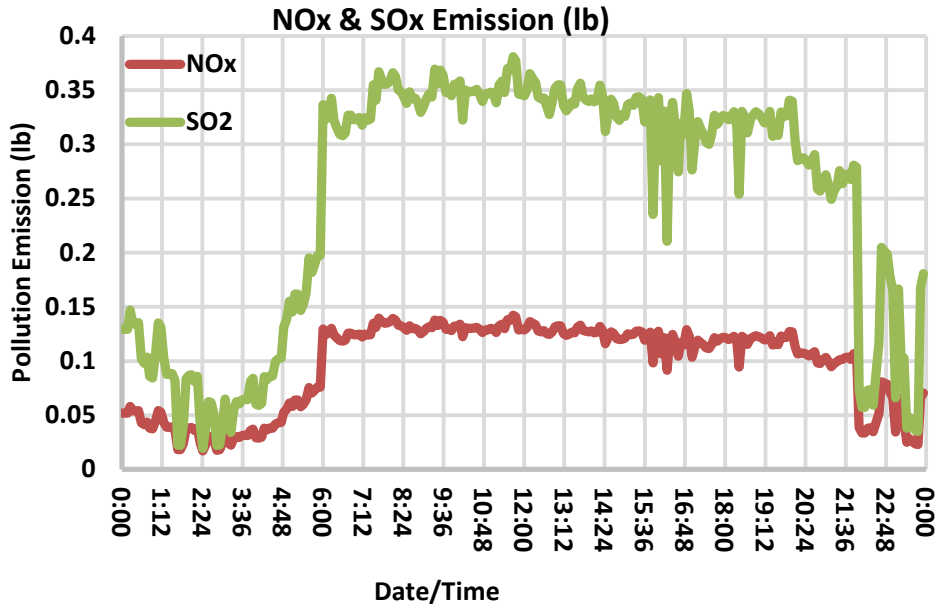
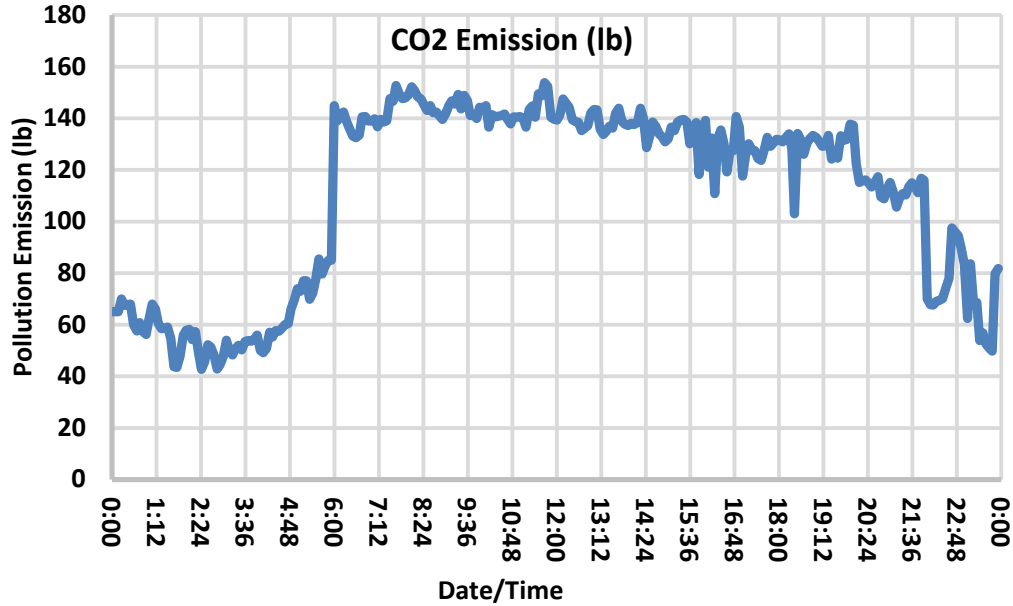


Chrysler House CO2 Emission 08/20/2015

Chrysler House CO2 Emission (lb)



Chrysler House Pollution Emission (lb)



Looking for Pilots & Partners. Ask Us.

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THANK YOU!