



# Maximizing & Measuring Carbon Impact: How to Operationalize “*Emissions First*” Principles

Lee Taylor, CEO, REsurety

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# Agenda

- REsurety Introduction
- A Brief History of Incentives
- A Problem Worth Solving
- The Solution: More Accurate Data
- Taking Action



# REsurety Overview and Product Suite

## Company Overview

- Founded in 2012
- ~65 interdisciplinary professionals
- Experience in most U.S. markets and Australia
- Differentiating expertise in tracking and forecasting generation, power prices, carbon impact of wind, solar, and storage

## Our Offerings

### Software Suite

- REmap for market intelligence
- REmodel for new project & contract simulation
- REview for existing project & contract management

### Analytics Services

- Hedging: Renewable project offtake and hedges (for buyers & sellers of power)
- Transaction Services: contract settlement and auditing, portfolio diligence & optimization





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# By the Numbers: Corporate Procurement of Clean Energy

**2008**

**2 GW**

**70 GW**

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# By the Numbers: Corporate Procurement of Clean Energy

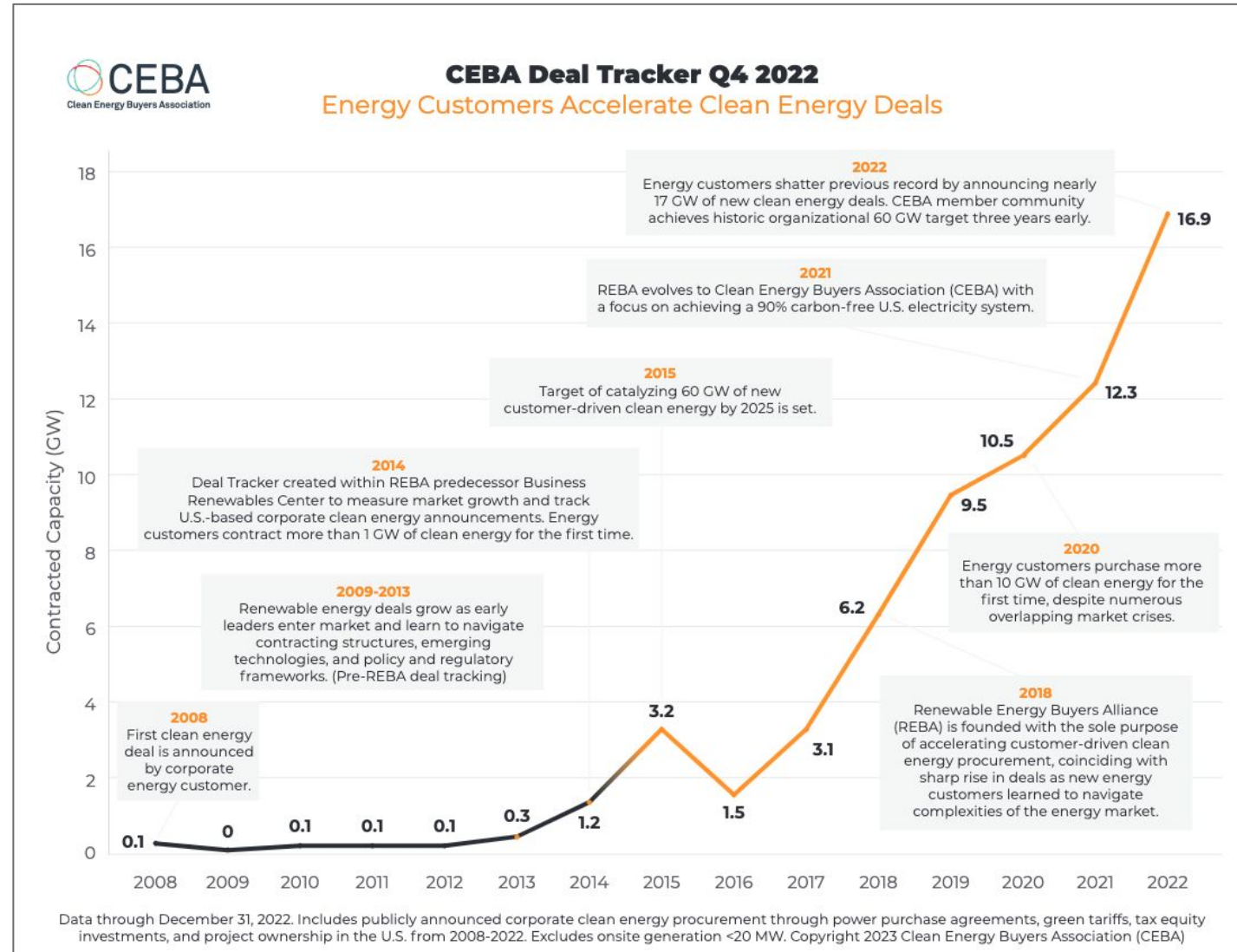
**2008** Year of first corporate purchase (PPA)

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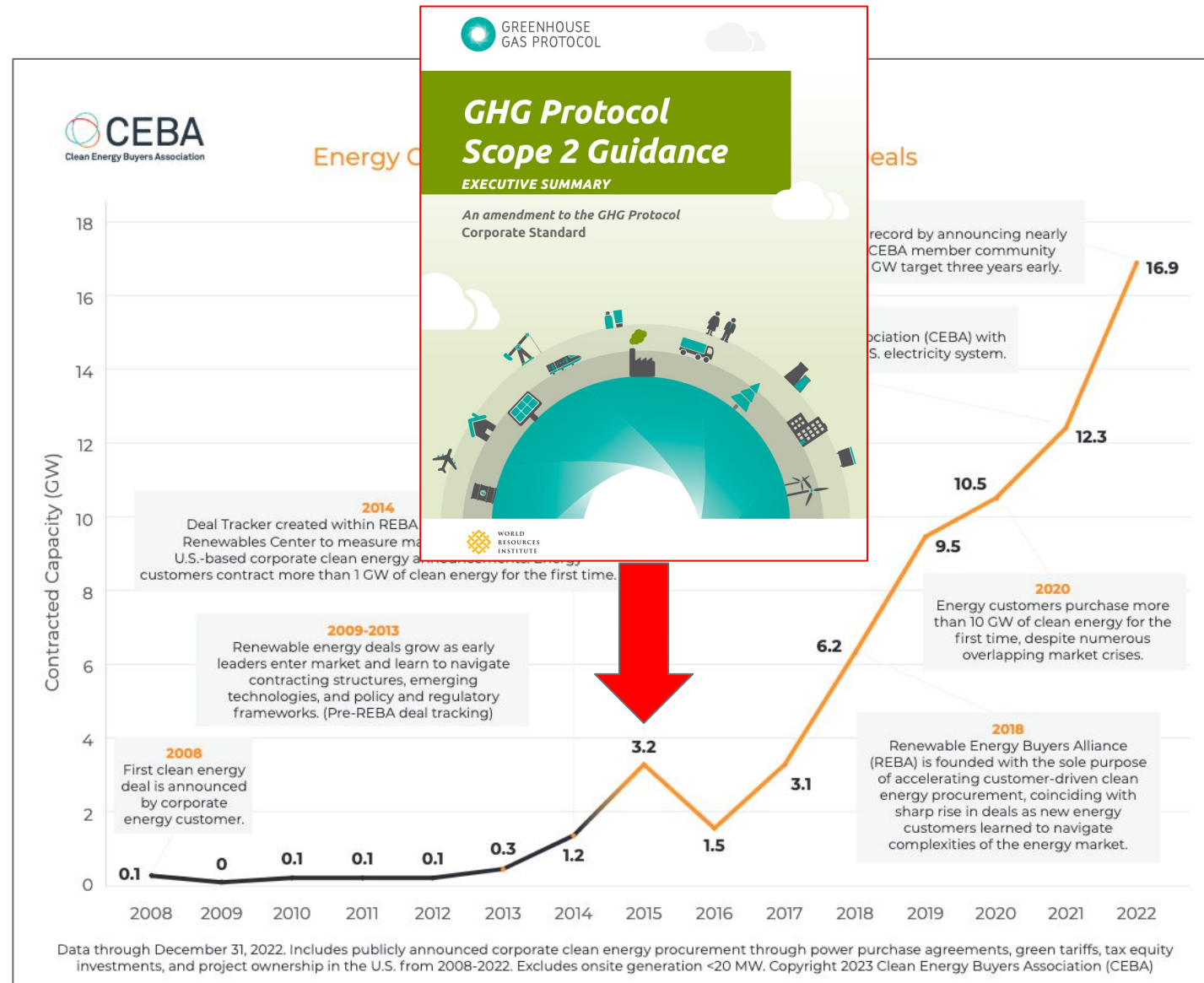
**70 GW** PPAs contracted '15-'22 (8 yrs)



# A History of Corporate Procurement (and Incentives)



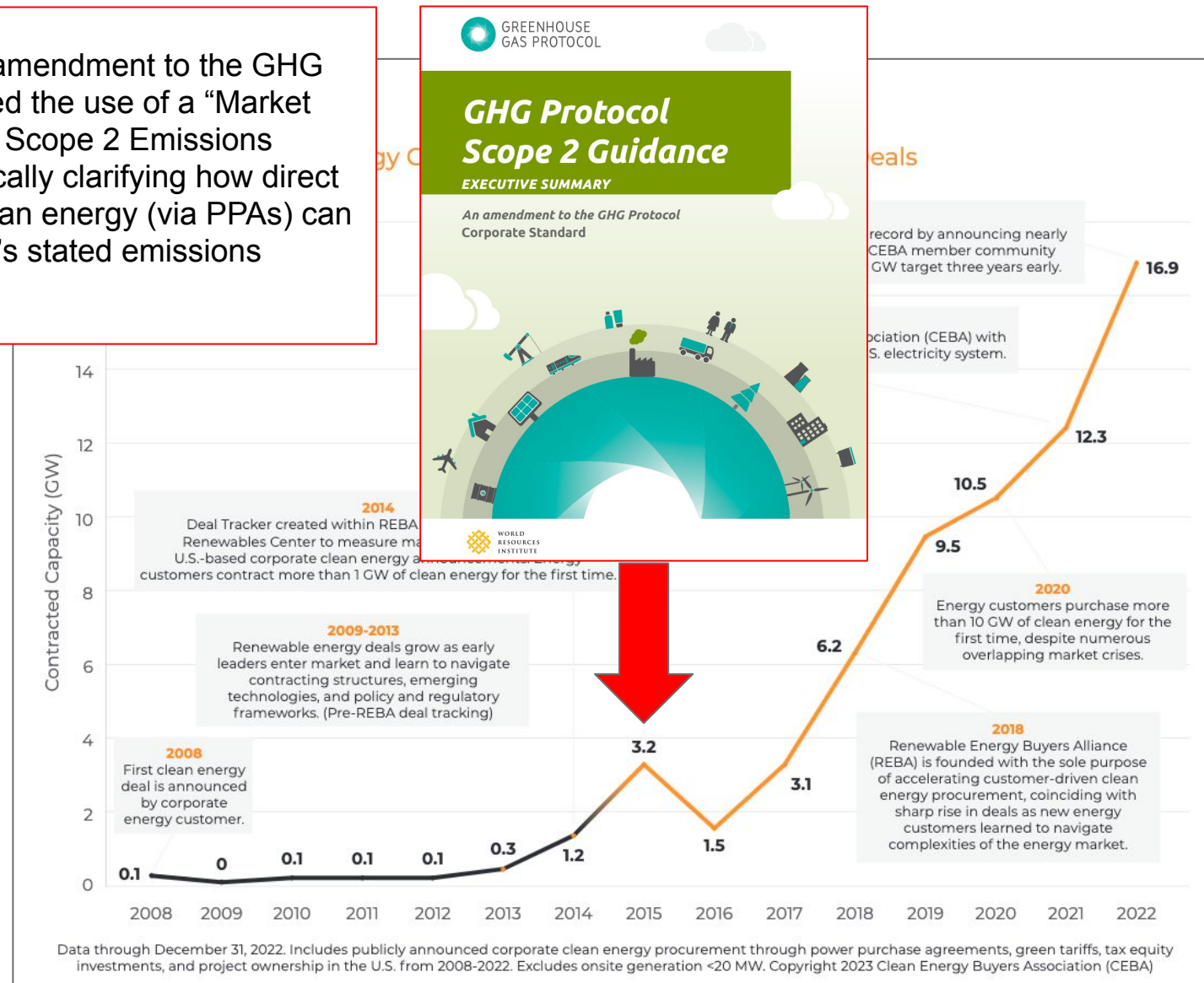
# A History of Corporate Procurement (and Incentives)





# A History of Corporate Procurement (and Incentives)

A 2015-published amendment to the GHG Protocols formalized the use of a “Market Based Method” for Scope 2 Emissions Reporting - specifically clarifying how direct procurement of clean energy (via PPAs) can reduce a company’s stated emissions footprint.



# A History of Corporate Procurement (and Incentives)

A 2015 published amendment to the GHG  
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## Summary

For the past 8 years, corporations have been incentivized to reduce their carbon footprint through the direct purchase of clean energy.

The quantity of procurement has been phenomenal: sustainability-motivated Corporate buyers have purchased a LOT of renewable MWh.

Data through December 31, 2022. Includes publicly announced corporate clean energy procurement through power purchase agreements, green tariffs, tax equity investments, and project ownership in the U.S. from 2008-2022. Excludes onsite generation <20 MW. Copyright 2023 Clean Energy Buyers Association (CEBA)





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# A History of Corporate Procurement (and Incentives)

## The Problem

We need quality and quantity: not all MWh from clean energy are created equal.

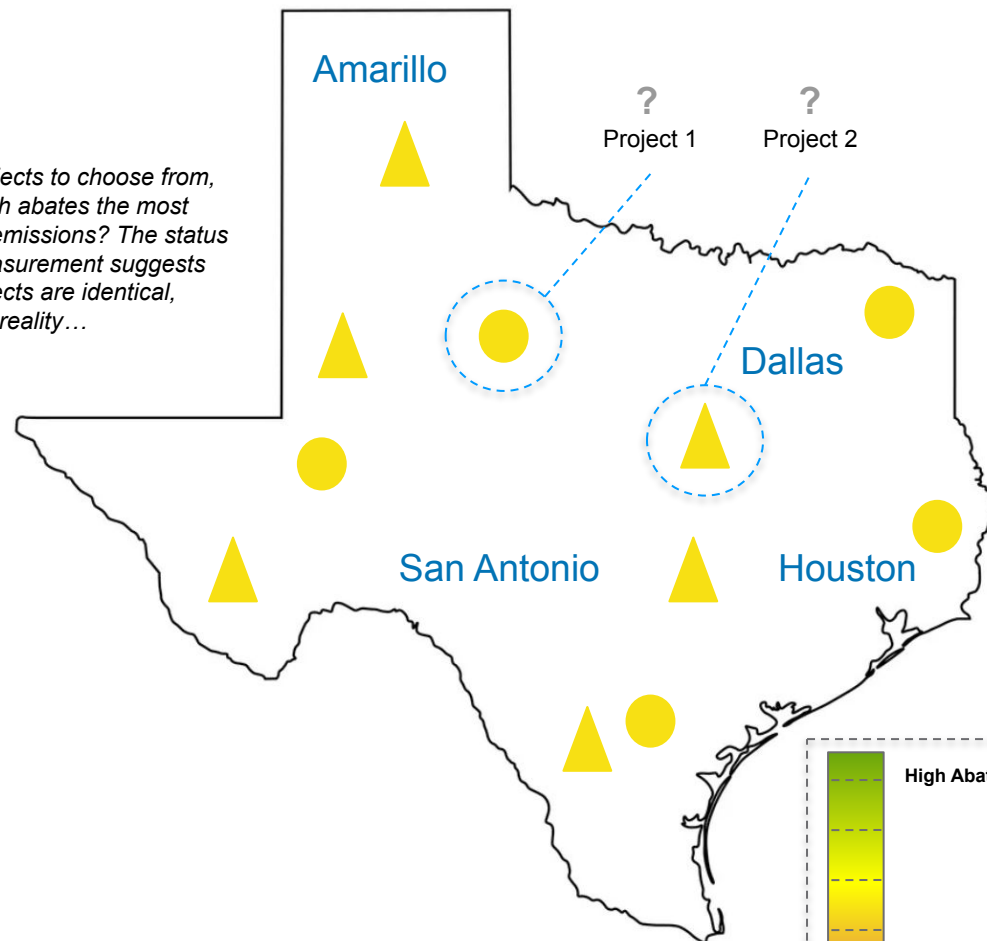
Some clean energy has a massive impact on carbon reduction. Some has a trivial impact.



# The Status Quo Ignores Differentiated Emissions Impacts

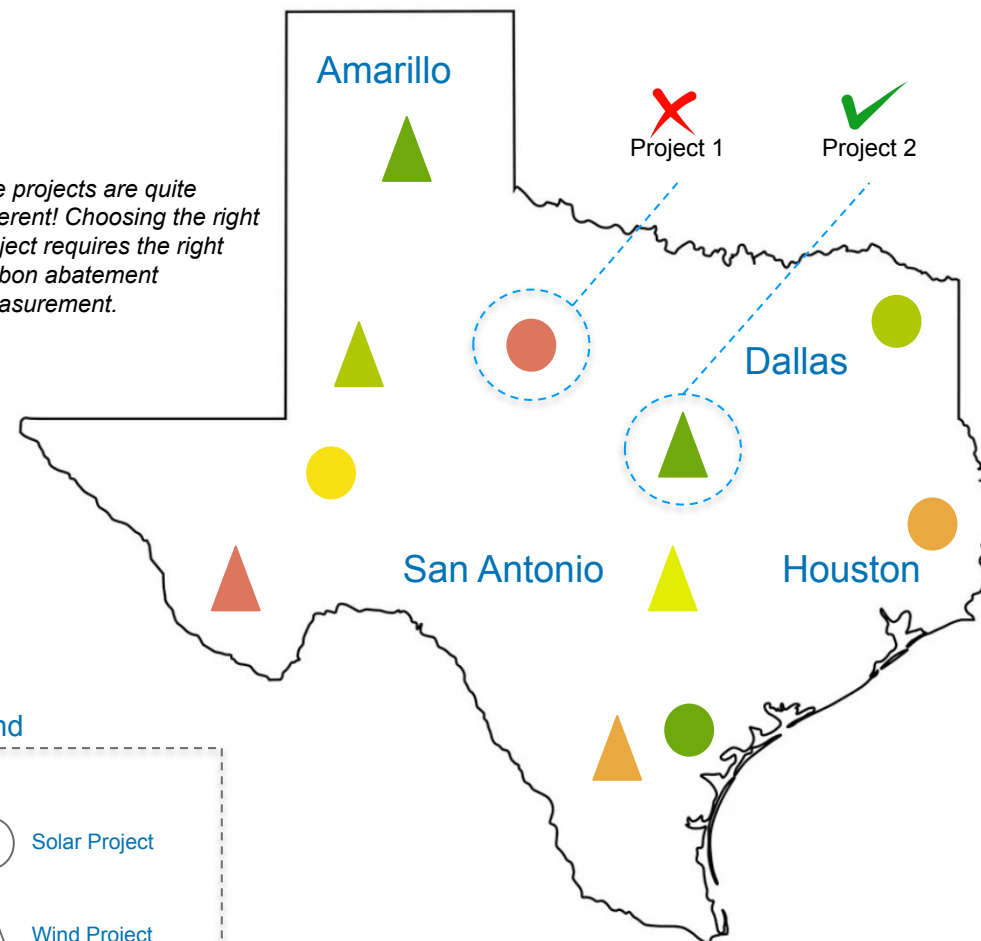
## Status Quo Carbon Abatement Value

Two projects to choose from, but which abates the most carbon emissions? The status quo measurement suggests the projects are identical, when in reality...

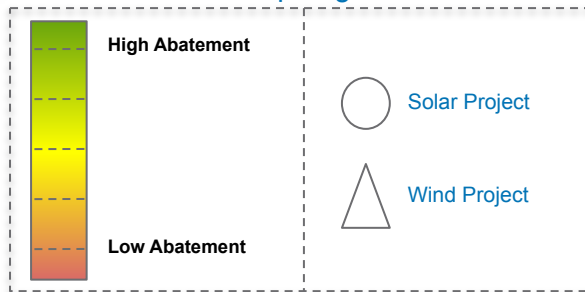


## Actual Carbon Abatement Value

The projects are quite different! Choosing the right project requires the right carbon abatement measurement.



### Map Legend



# Increasingly, Sustainability Buyers are advocating for ESG claims to focus on emissions impact, not MWhs

*“We recognize that the **emissions impact** of a megawatt-hour of electricity consumption or generation varies based on **time** and **location**.*

*Move [carbon] accounting **beyond megawatt-hour matching to focus on the quantified emissions impact** of each activity.”*

*–Emissions First Partnership*



Emissions First  
Partnership



amazon



HANNON  
ARMSTRONG

HEINEKEN

intel

Meta



RIVIAN



workday

The Emissions First Partnership was formed at the end of 2022 by a group of leading companies focused on advocating for better emissions accounting.





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# Locational Marginal Emissions (“LME”)

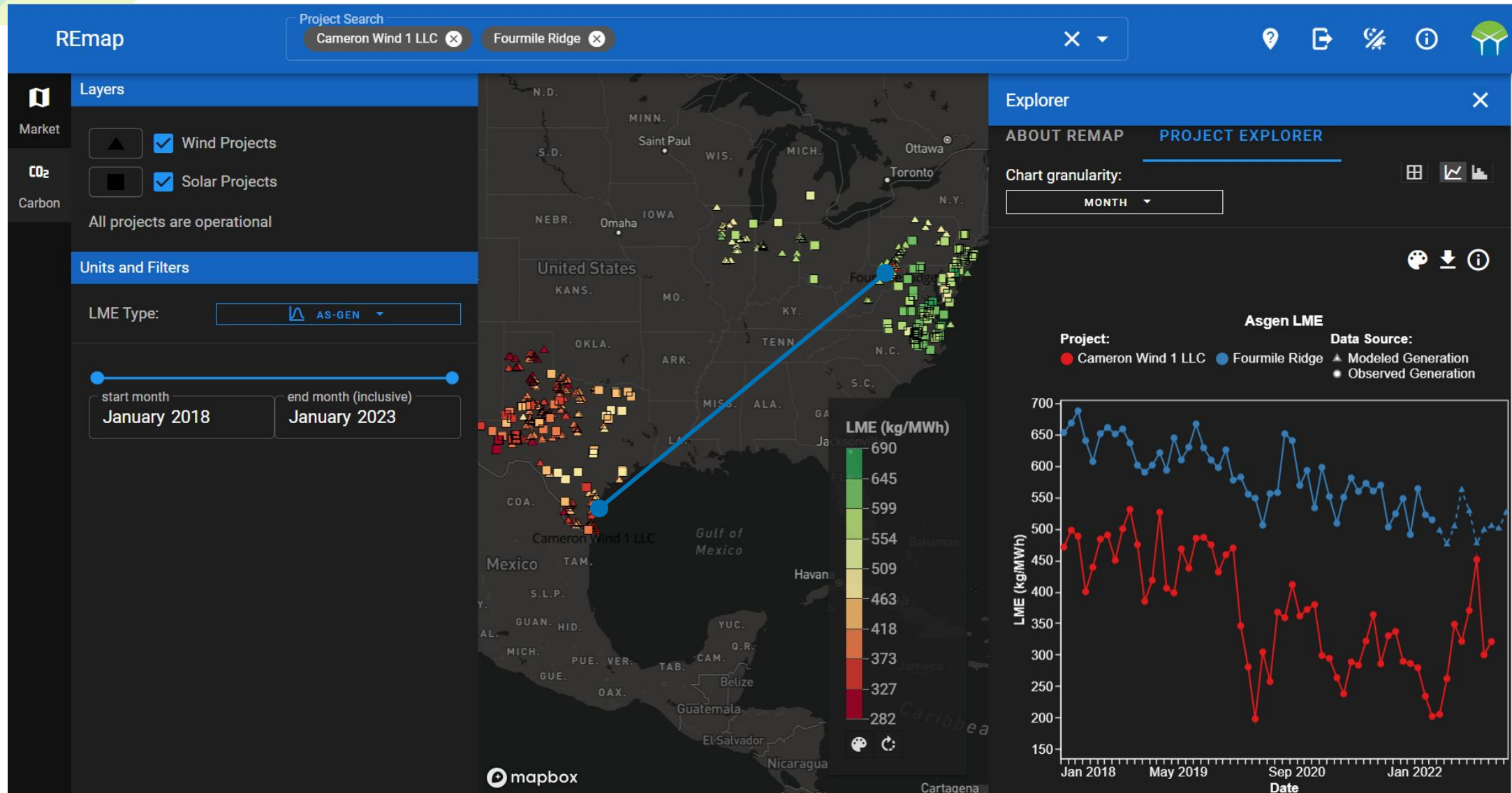
## What Are LMEs?

- LMEs measure the **carbon emissions intensity of the marginal generator(s)** at any time and place in the grid.
- LMEs are the **most accurate measure of carbon impact:** how emissions would change given an incremental change in supply or demand

## Where Are LMEs Available?

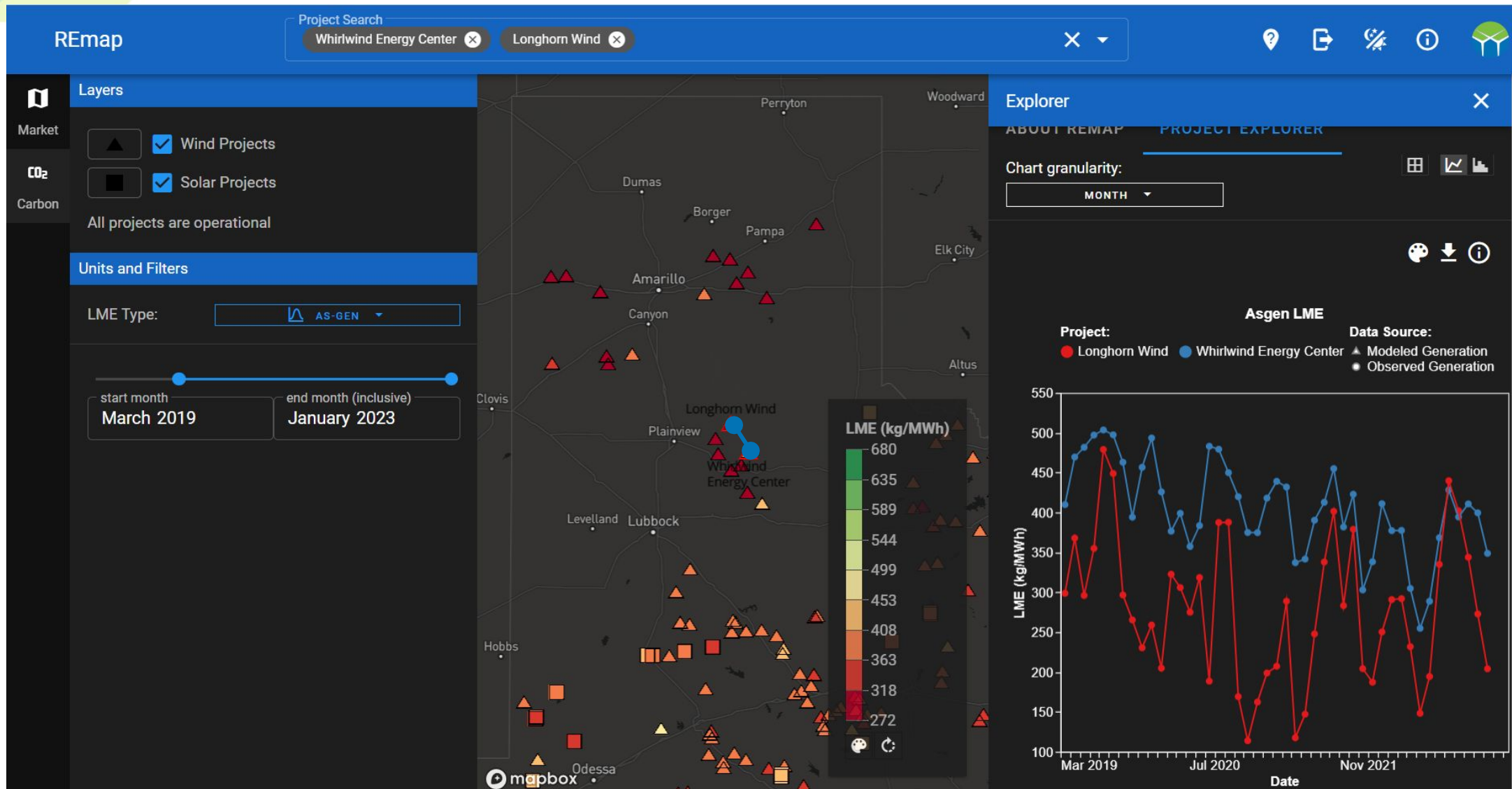
- **PJM** (mid-Atlantic power grid) was the first system operator to publish LMEs
- **REsurety** calculates and publishes LMEs in other ISOs across the U.S.
- **NGOs** (ex. WattTime and UNFCCC) publish regional and country-wide marginal emissions

# Some projects reduce carbon >2x faster than others





# 2 Wind Farms 10 Miles Apart Still Reflect Large Differences





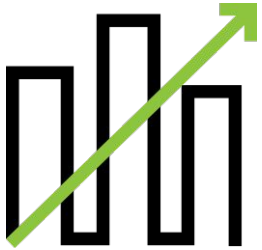


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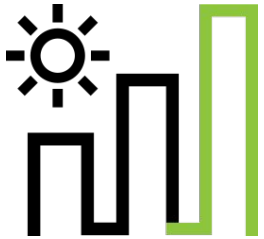
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# Operationalizing Emissions First Principles



Measure: use high quality emissions data to accurately calculate your company's net carbon impact



Maximize: make long-term decisions informed by the carbon impact signal (PPA procurement, load siting & scheduling, etc.)



Monetize: differentiate your assets based on their carbon impact, and consider carbon credits for energy storage



# Additional Resources and Opportunities for Action

## Recommended Beach Reading:

- [White Paper: Making it Count](#) - *Updating Scope 2 accounting to drive the next phase of decarbonization*, authored by David Luke Oates, REsurety
- [Insight Brief: Accounting for Impact](#) - *Refocusing GHG Protocol Scope 2 methodology on 'impact accounting'*, authored by WattTime
- [Emissions First Partnership website](#)

## Make Your Voice Heard:

- [Join the Emissions First Partnership](#)
- [Advocate for Emissions First Principles in GHG Protocols \(survey ends Mar 14!\)](#)

## Contact me to learn more:

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Contact us [info@resurety.com](mailto:info@resurety.com)  
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