RENEWABLE ENERGY MARKETS 2024 PANEL DISCUSSION

NAVIGATING THE LANDSCAPE OF IMPACTFUL VOLUNTARY PROCUREMENT STRATEGIES

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Founder & CPO
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Miranda Domico
Renewable Energy
Markets Associate
The Nature Conservancy (TNC)

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Former White House
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Clean Power Procurement

Eric O'Shaughnessy
Principal
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Heather Perry
Project Director of Sustainability,
Energy and Climate Change
WSP

Tuesday, Sep 17 11:00 AM–12:00 PM

Renewable Energy Markets™ 2024

Navigating the Landscape of Impactful Voluntary Procurement Strategies

Renewable Energy Markets

Panel Discussion

September 17th, 2024

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Renewable Energy Markets™ 2024

Discussion Questions

What is impact, and does impact matter?

How do we measure impact, and are we measuring it correctly?

What kind of standards or harmonization around impact and procurement would drive the most change in how quickly we move to renewable energy globally?

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What is impact?

Implementation ← → **Additionality**

Actions that enable renewable energy development

Actions that change renewable energy development outcomes

Does impact matter?

Implementation

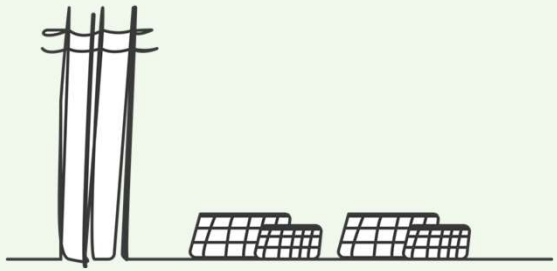
Most buyers implement marginal actions with marginal impacts that deserve recognition

Additionality

Large buyers are more concerned about additionality and should be equipped to achieve it

How do you define impact?

And does impact matter?



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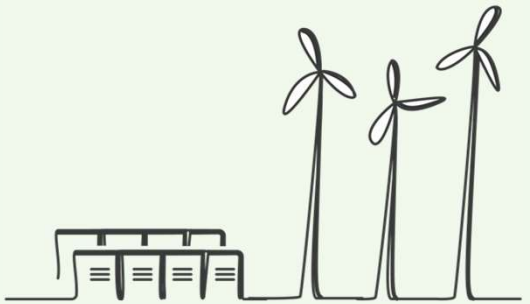
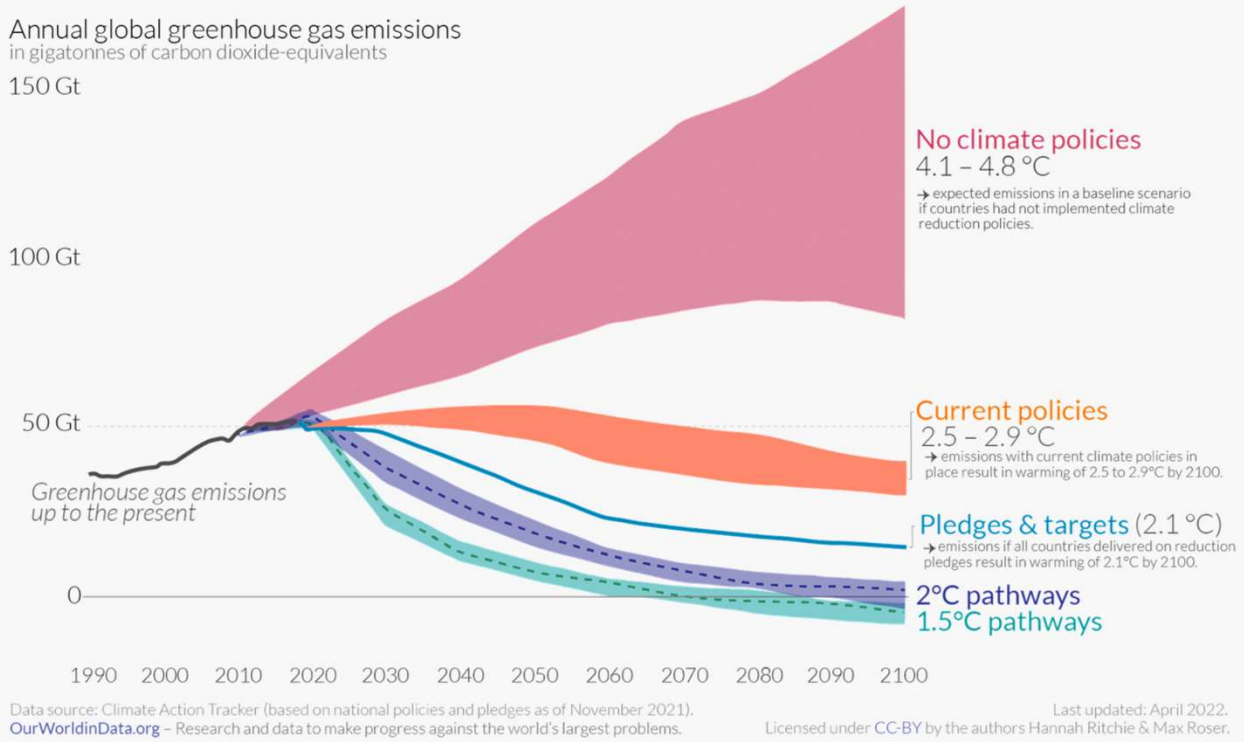


Yes, impact matters.

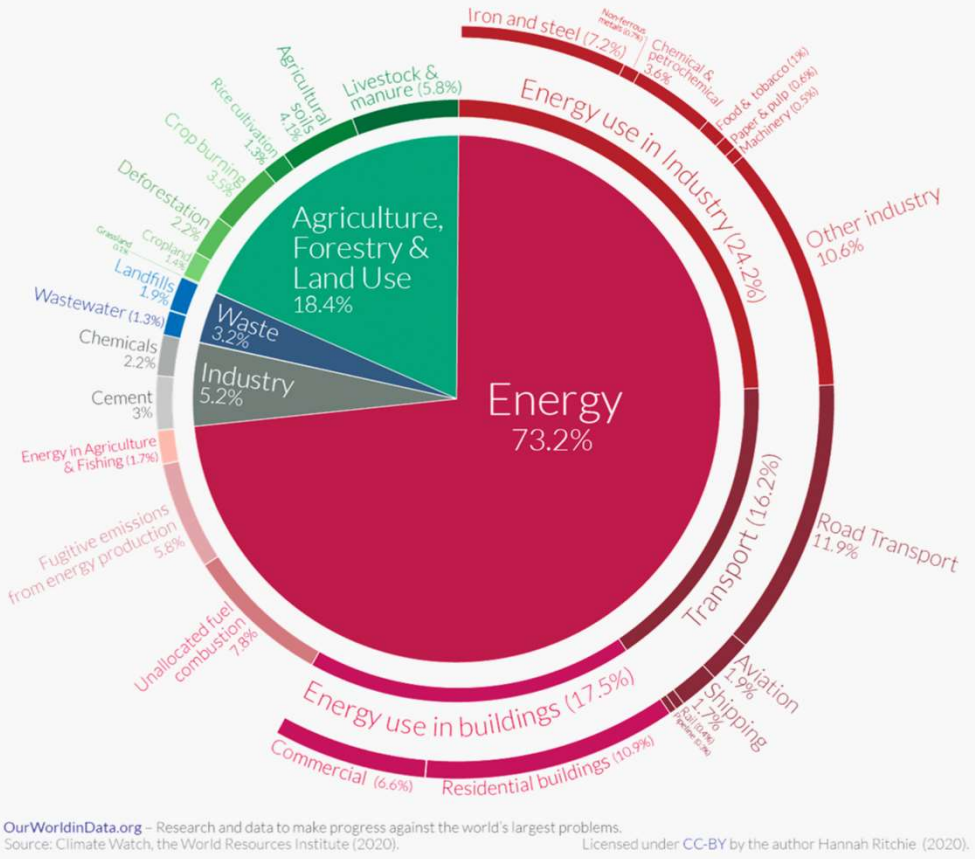
Climate change is not solved

Still a wide margin between current policies and 2ºC pathway



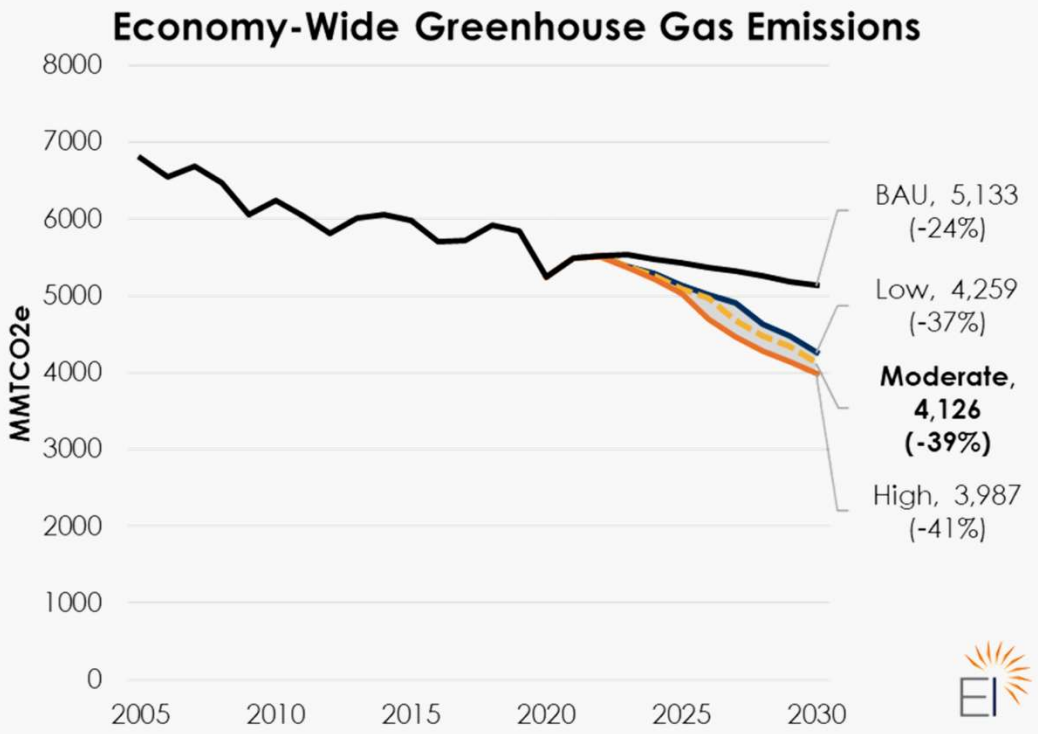
Source

Energy is a huge % of global emissions



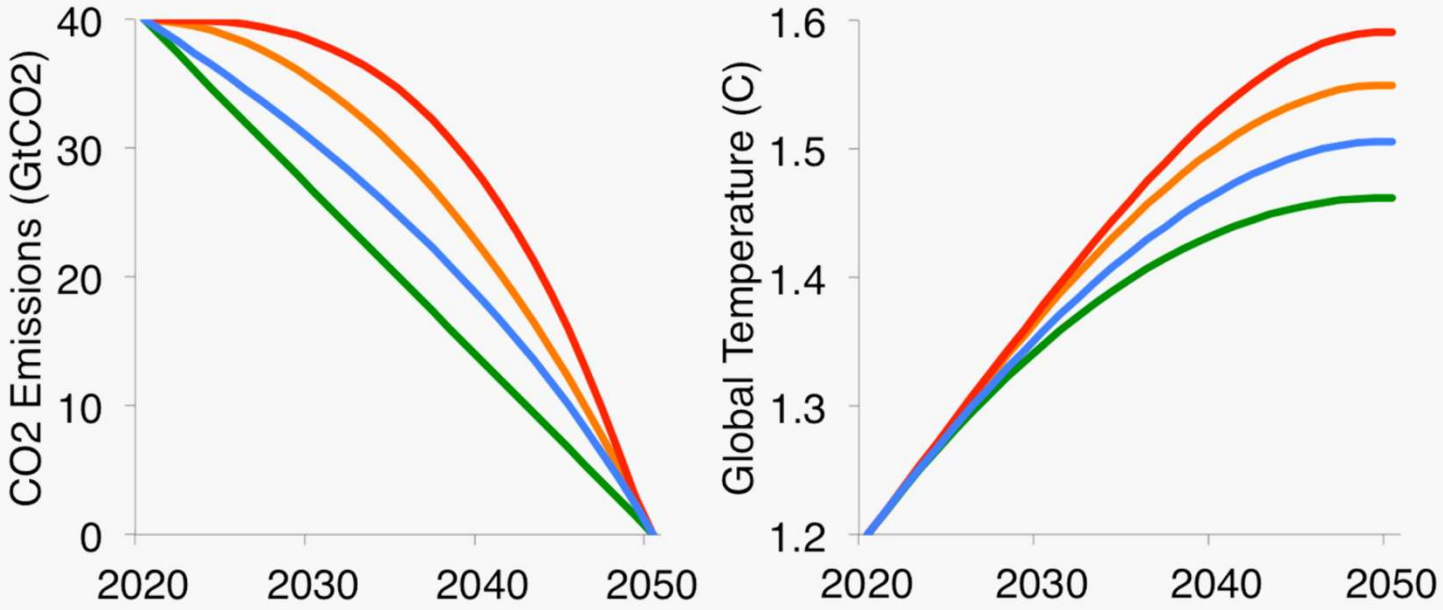
Source

In the US, the IRA isn't enough on its own



The IRA enables the U.S. to close 50-66 percent of the emissions gap between Business As Usual (BAU) and the Nationally Determined Commitment (NDC) to the Paris Agreement by 2030. Source

Velocity matters



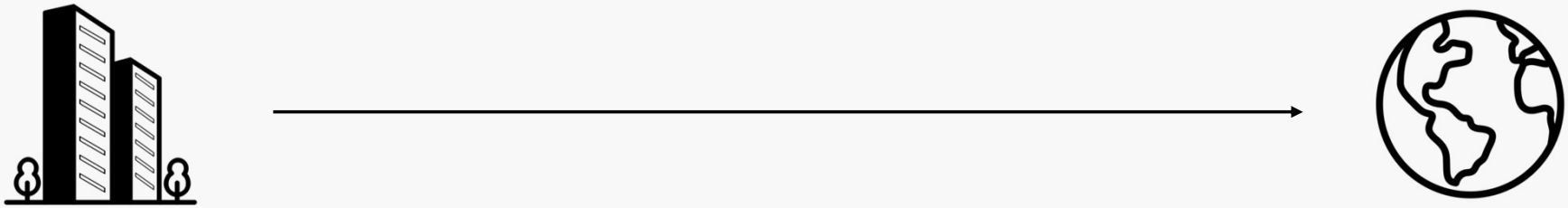
Source

How do you define impact?

Impact is

A company's actions **causing** a **reduction in emissions**

(while maximizing co-benefits and minimizing harms)



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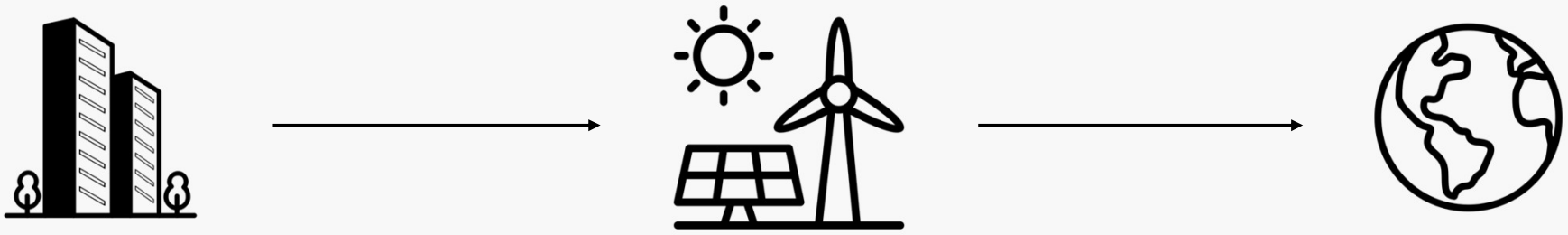
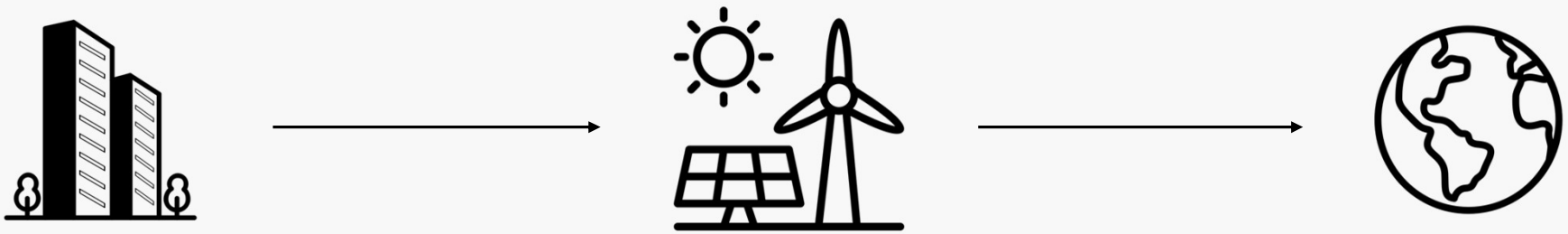


The two components of impact



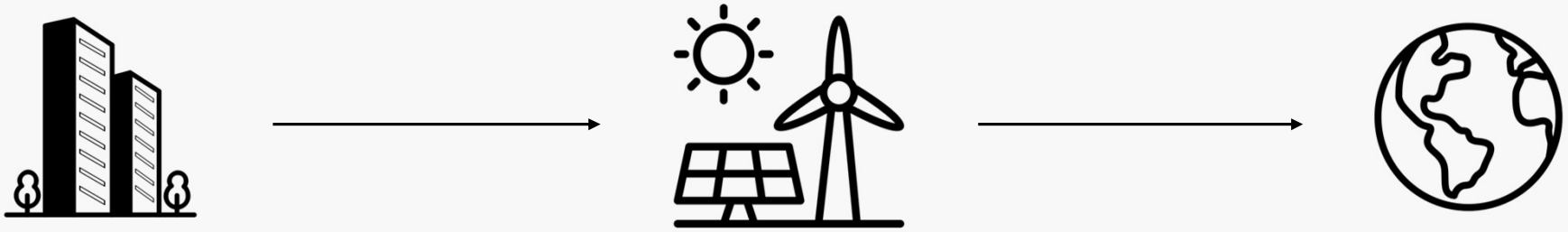
I_C

Company's impact on enabling a Project

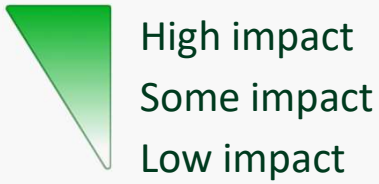
I_P

Project's impact on the planet

A spectrum of impact

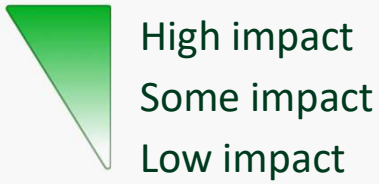


I_C



High impact
Some impact
Low impact

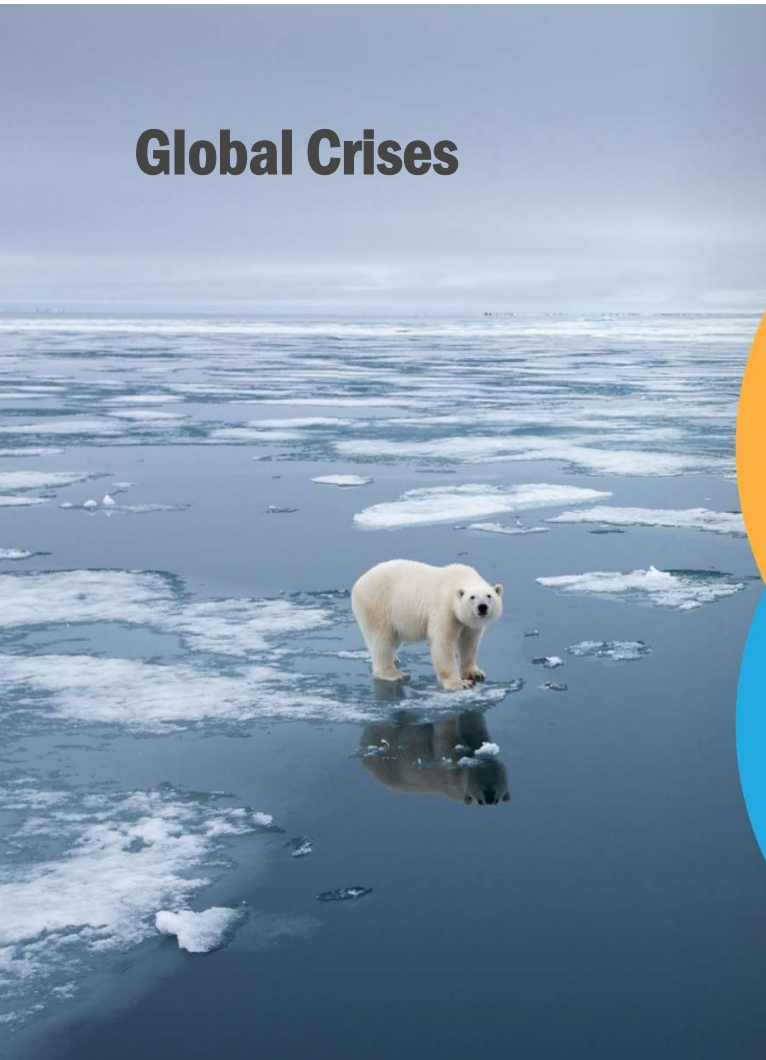
I_P

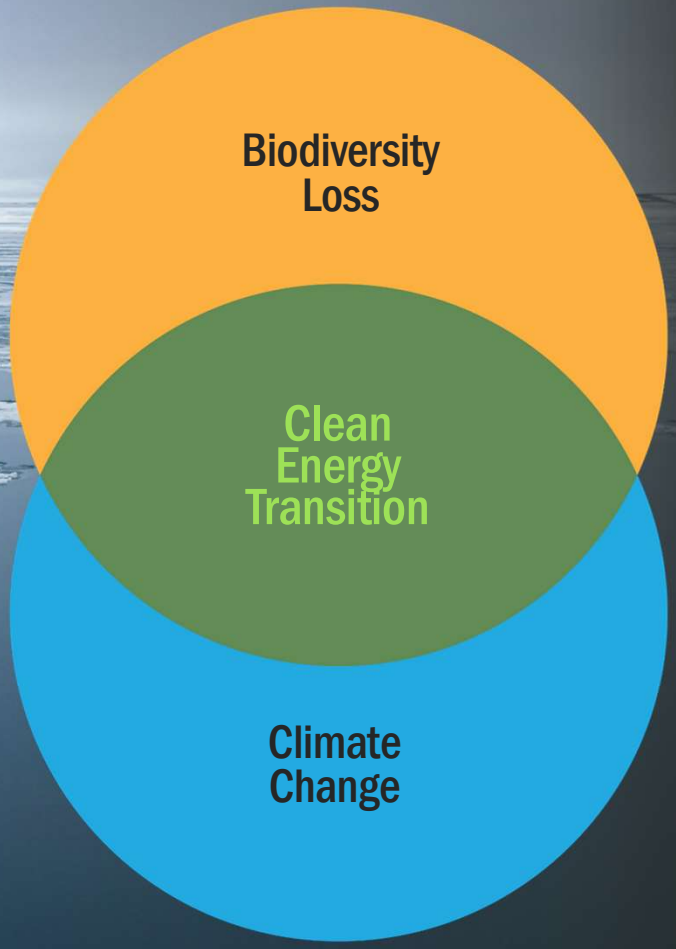


High impact
Some impact
Low impact


YES, Impact
Matters

Global Crises





- Over half of global GDP is dependent upon nature
- >1 billion livelihoods rely on forests
- Land & ocean absorb over half of global emissions

- While land use is the leading cause of biodiversity loss, climate change is an increasing factor
- Risk of species extinction increases with every degree of warming

Persistent Renewable Deployment Challenges

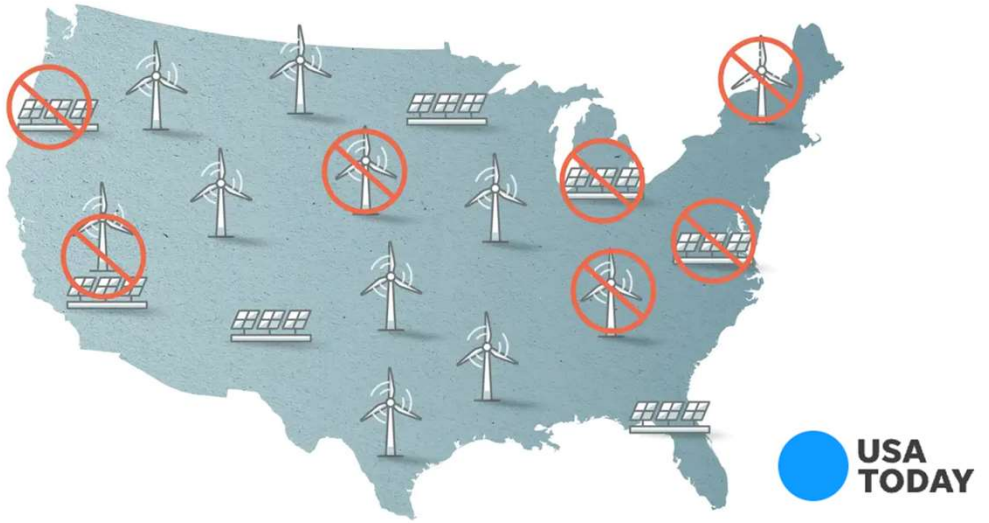
Transmission constraints

Local resistance

Market design

Poor siting

Permitting inefficiencies



Across America, clean energy plants are being banned faster than they're being built

US Executive Order 14057 (December 2021)
Catalyzing Clean Energy Industries & Jobs through Federal Sustainability

"Section 203 Transitioning to 100% Carbon Pollution-Free Electricity

Each agency shall increase its percentage use of ***carbon pollution-free electricity***, so that it constitutes 100 percent of facility electrical energy use on an ***annual basis***, and seek to match use on an ***hourly basis*** to achieve 50 percent 24/7 carbon pollution-free electricity, by fiscal year 2030."

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How do we measure impact?

Implementation ← → **Additionality**

Marginal analysis
(e.g., financial modeling)

Consequential analysis

Are we measuring impact correctly?

No.

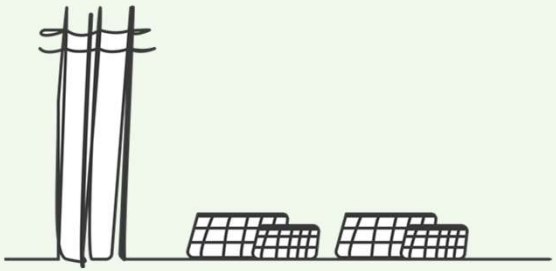
Implementation ← → **Additionality**

Nothing from something — Something from nothing

How do we measure impact?
Are we measuring it correctly?

How do you measure impact?

And are we measuring it correctly?



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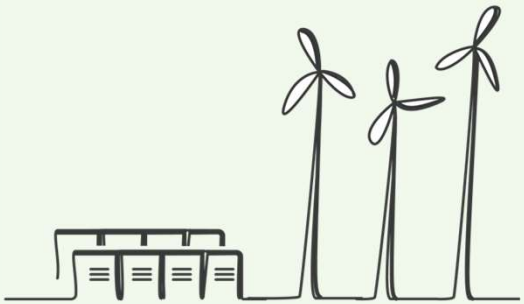
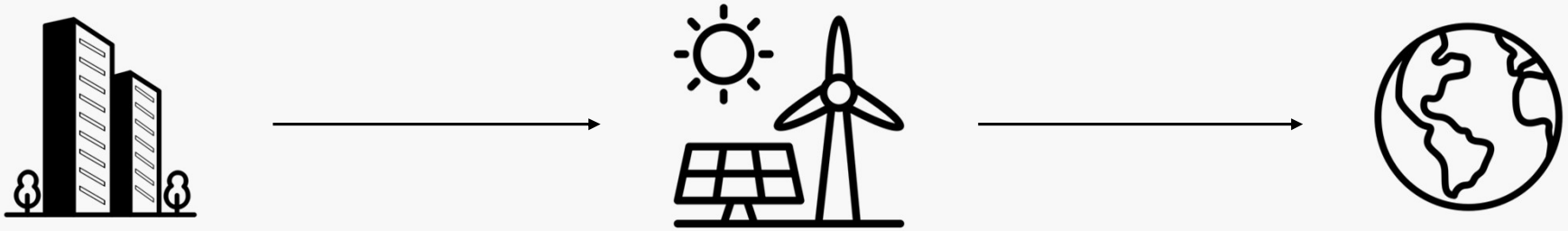


Two components, a spectrum of impact

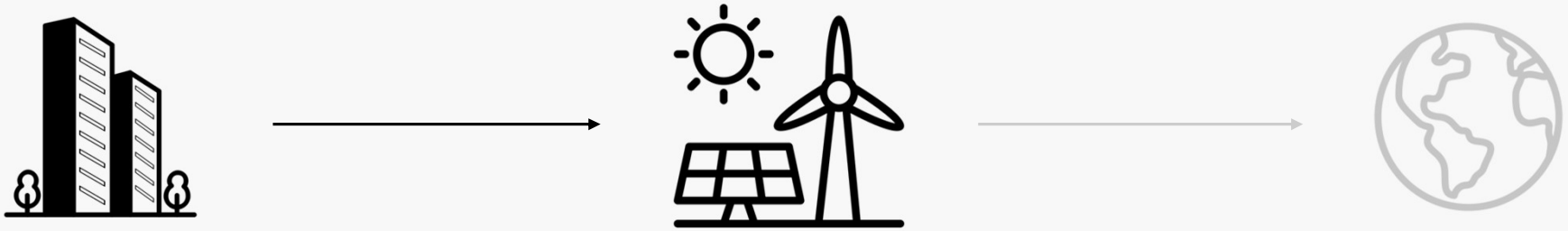


I_C

I_P

- Company's impact on enabling a Project
- Project's impact on the planet

Company's impact on enabling a project



I_C

Two primary paths:

1. Fund projects and/or
2. Be its customer and make it attractive to fund

Company's impact on enabling a project

I_C

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1. Fund projects and/or
2. Be its customer and make it attractive to fund

Impact of RECs

Using NREL's SAM model with $40 PPA, 30% ITC, $1,000/acre lease, and 1% property tax

REC price	REC term	% of Revenue	Unlevered IRR
–	–	–	2.53%
$1	1 year	0.07%	2.55%

System Advisor Model

Impact of RECs

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REC price	REC term	% of Revenue	Unlevered IRR
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$1	1 year	0.07%	2.55%
$2	10 years	1.42%	2.90%

System Advisor Model

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REC price	REC term	% of Revenue	Unlevered IRR
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$2	10 years	1.42%	2.90%
$10	10 years	6.71%	4.40%

System Advisor Model

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$23.25	10 years	14.32%	7.00%

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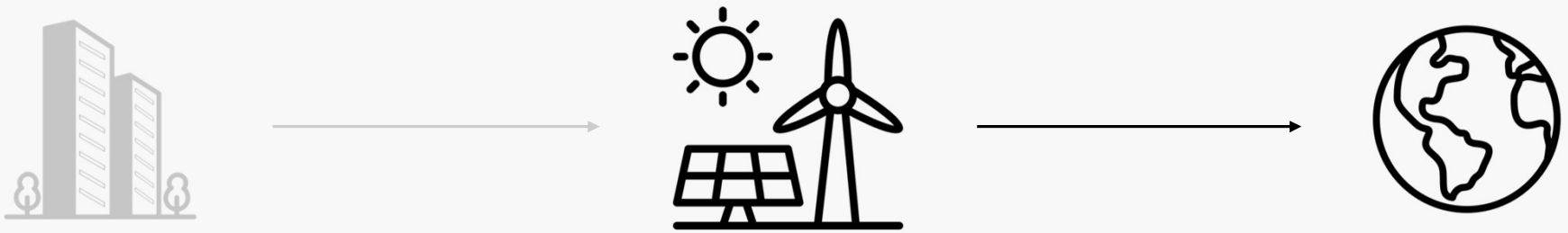
$23.25	10 years	14.32%	7.00%
$18.10	15 years	16.33%	7.00%

System Advisor Model

Project’s impact on the planet

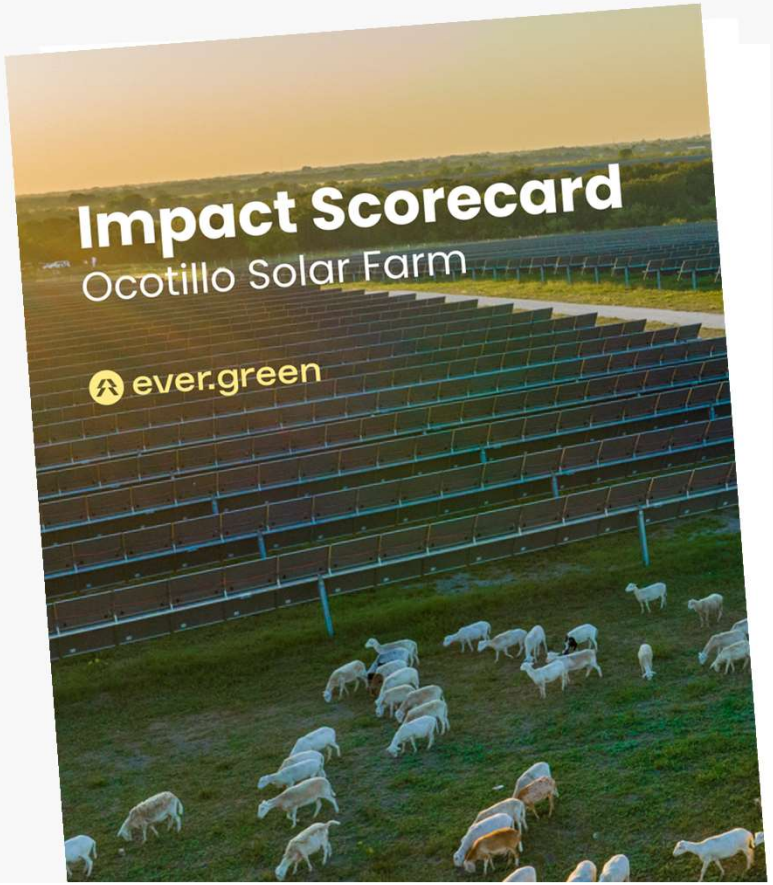


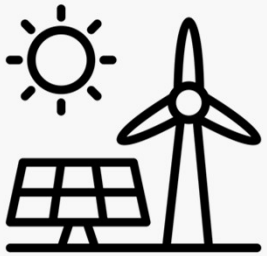
I_P

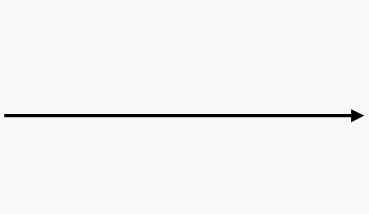
Many dimensions:

Emissions, People, Land, and Wildlife

Project's impact on the planet







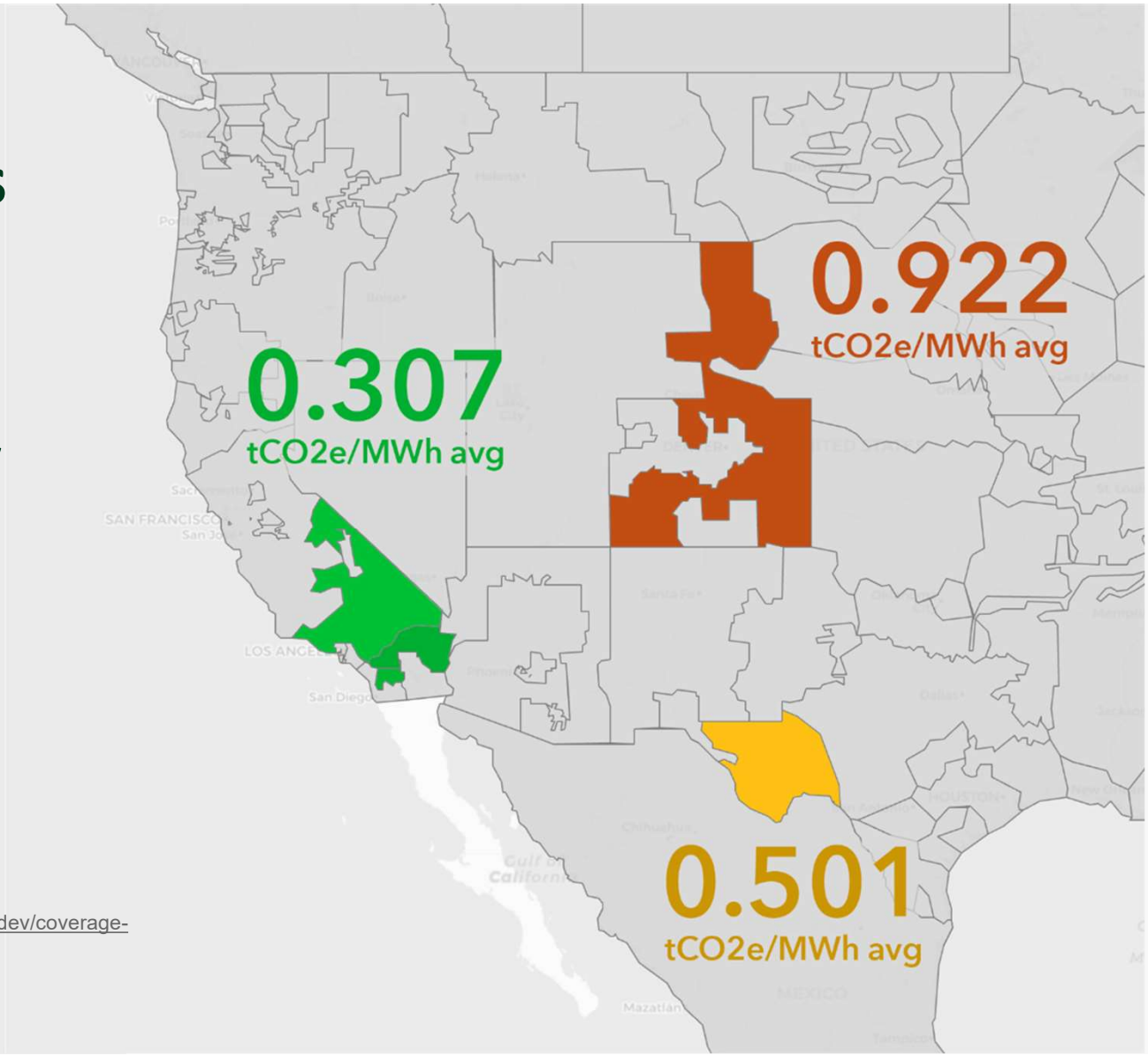
I_P

Many dimensions:

Emissions, People, Land, and Wildlife

Avoiding Emissions

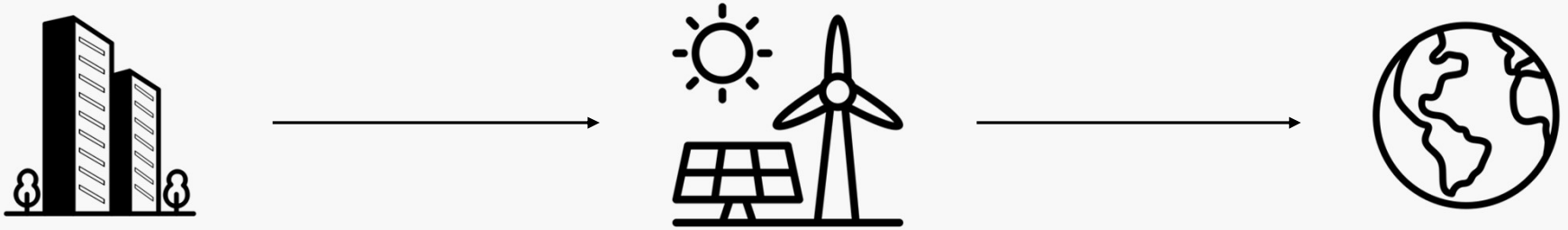
There is a wide range of how many tCO_2 are avoided on average for each MWh of new solar energy.



WattTime

2022 model watttime.org/docs-dev/coverage-map/

Two components, a spectrum of impact



I_C I_P

Company's impact on a Project

100% of costs

40% of costs, 30% of revenue

25% of contracted revenue

2% of revenue (uncontracted)

Project's impact on the Planet

Avoids > 0.8 tCO_2 / MWh

Avoids > 0.5 tCO_2 / MWh

Avoids > 0.2 tCO_2 / MWh

Go Smart to Go Fast

The 3Cs

CLIMATE

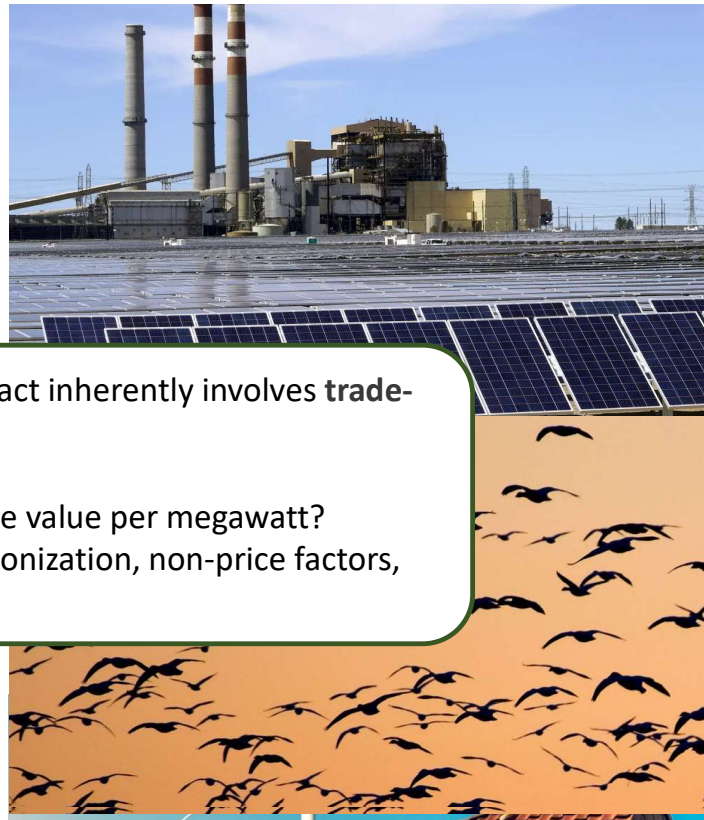
Optimize greenhouse gas emissions reductions

CONSERVATION

Avoid impacts to wildlife and habitat

COMMUNITIES

Support an equitable transition



Measuring impact inherently involves **trade-offs**.

How to optimize value per megawatt? Balance decarbonization, non-price factors, *and* cost

Tools for Measuring Impact Beyond Decarbonization

CEBI
Clean Energy Buyers Institute

PRINCIPLES FOR PURPOSE-DRIVEN ENERGY PROCUREMENT

Clean Energy with Purpose

Energy customers and their partners have played a critical role in driving the evolution of the energy market by voluntarily procuring over 64.5 gigawatts of new clean energy capacity in the U.S. and, increasingly, across the global electricity system. A heightened focus on carbon impacts of procurement has accentuated the fact that not all clean energy is created equal. Industry-leading companies are now seeking to advance standards to integrate environmental sustainability, resilience, and social considerations in procurement decisions.

Established by leading energy stakeholders, the Principles for Purpose-Driven Energy Procurement are aspirational considerations for industry stakeholders to individually and independently evaluate and integrate the maximization of clean energy procurement benefits. While non-binding, the Principles signal an evolution in the energy customer decision-making approach leveraged when engaging energy developer and provider partners to identify impactful clean energy projects.

Environmental sustainability

Guiding Principle: Respecting and conserving our lands, waters, and biodiversity through avoidance, minimization, and mitigation measures when siting, designing, developing, and operating clean energy projects. Considerations may include:

- Project siting on degraded, already disturbed, or repurposed lands where possible
- Locations where the marginal emissions reduction to

Question	Criteria	Question
1	Climate	Select the Electric Grid Emissions Intensity Area relevant to your project - *Entered on Participant and Project Info Tab*
2	Climate	State - *Entered on Participant and Project Info Tab*
3	Climate	Project Status - *Entered on Participant and Project Info Tab*
4	Climate	Select the decomissioning response that best reflects your project
5	Climate	Are you tracking the sourcing practices and GHG footprint of major equipment components required for the project?
6	Conservation, Development	Does your project intersect with the FEMA 100-year floodplain?
7	Conservation, Development	Select the wetlands response that best represents your project.
8	Conservation	Is the probability of significant adverse impacts to habitat and wildlife high, medium, or low? Please respond for all technology types using the Federal Wind Energy Guidelines Tier 1 and Tier 2 analyses and/or state equivalents.
9	Conservation	Do you have evidence of federal and state agencies with trust responsibilities over wildlife concurring with this determination?
10	Conservation	Has a mitigation plan (micrositing, minimization, compensation) been developed for the proposed project, including for species and environmental resources?
11	Conservation	Describe these measures and how the Respondent ensures that mitigation measures are carried out, successful, and durable. If included in narrative please identify page and paragraph.
12	Conservation, Development	Has your project obtained all necessary permits, including land use entitlement permit (e.g., Conditional Use Permit (CUP), Application for Certification (AFC), Record of Decision (ROD)) from lead land use permitting agency and all discretionary permits from other lead, trustee and/or responsible agencies including wildlife agencies?
13	Conservation	What is the estimated percentage of the project footprint that will require grading to adjust for slope?
14		...y wildlife layer of ...ect falls outside of ...nergy projects. If ...the data, and note
15		...orest clearing or

6.2	1	6.2	*10*	0.62	Core
10.0	1	10	*10*	1	Core
10.0	1	10	10	1	Core
5.0	0.25	1.25	2.5	0.5	Bonus
0.0	0.25	0	2.5	0	Bonus
10.0	0.25	2.5	2.5	1	Bonus
10.0	0.25	2.5	2.5	1	Bonus

Discussion Questions

What is impact, and does impact matter?

How do we measure impact, and are we measuring it correctly?

What kind of standards or harmonization around impact and procurement would drive the most change in how quickly we move to renewable energy globally?

Standardization vs. Innovation

Baseline: Healthy market enabled by RECs

Annual Matching
Maximum participation

Hourly Matching
Portfolio diversity

Emissions Matching
The most direct route

What kind of standards or harmonization around impact and procurement would drive the most change in how quickly we move to renewable energy globally?

EO 14057 Implementing Instructions (July 2022)

Objectives > Design Criteria > Product Requirements > **Calculation Methodology***

1. **Accelerate IRA**
   (75% x 2030)

2. **Close the Gap**
   (100% x 2035)

- Carbon-free
- Time-matched
- Geo-matched
- Additional
- Non-detrimental

- All CFE Techs
- Delivered to BA
- Annual, Hourly
- Vintage post-2020
- Integrate with System

Grid CFE
+ On Site
+ Purchased CFE

= CFE Score

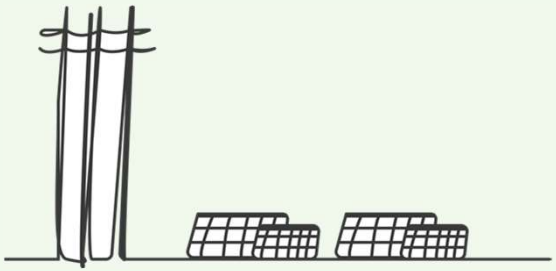
Desired Outcome

A fully decarbonized US electric power system, maintaining safety, reliability, and affordability

USG Federal Agencies Will:

- Deploy on-site generation, storage, demand management
- Procure CFE (green tariffs, PPAs, VPPAs, RECs, etc.)
- Advocate for and achieve increased share of CFE from retail suppliers
- Enjoy the benefits of a 100% CFE power grid by 2035

What kind of standards would drive the most change?



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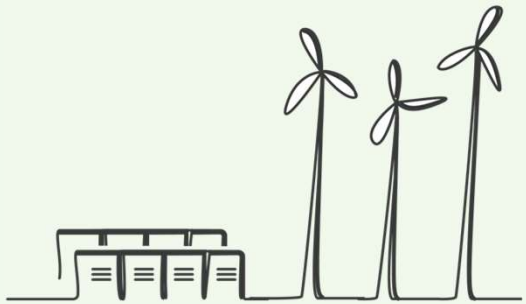
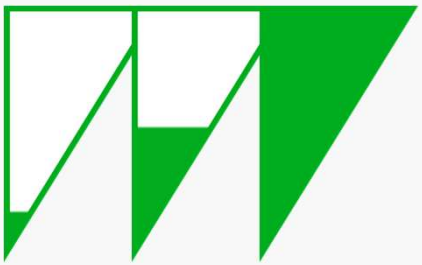
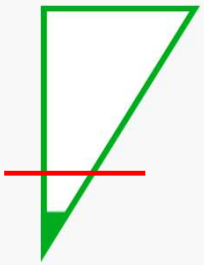


Standards that can accelerate

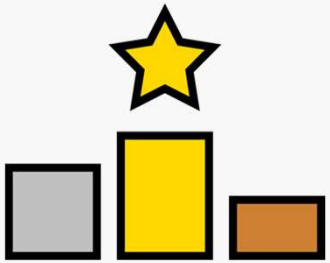
How to define and measure impact

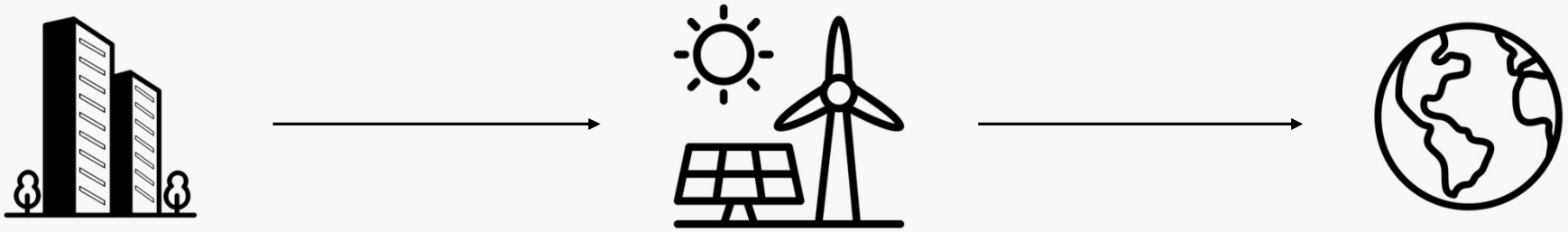


Where to set the bar



How to recognize greater impact





I_C I_P

ever.green/additionality

ever.green/impact

How Standardization Drives Change

1) Improves quality and consistency
2) Increases efficiency
3) Ensures compliance
4) Drives innovation
5) **Facilitates communication & collaboration**
6) Strengthen social license
7) De-risk transactions

Communication is Key

1) **How to define impact across the industry?**
2) **How to recognize and incentivize greater impact?**
3) **Providing tools for shared learning and collaboration**

Purpose-Driven Voluntary Procurement Standard

Our Mission

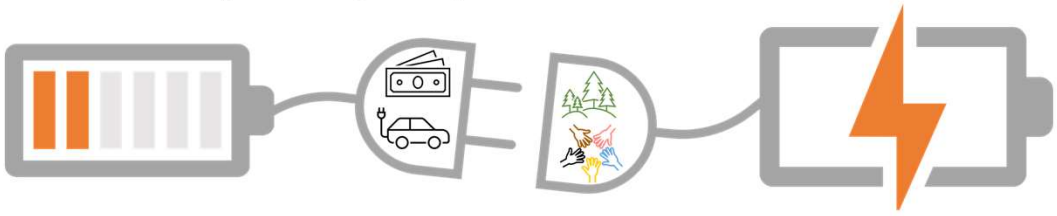
To develop a voluntary market standard that ensures the social, environmental, and economic benefits of renewable energy projects, mitigating harm and maximizing stakeholder value to responsibly triple renewables by 2030.

Our Organizations

Clean Energy Buyers Alliance | The Nature Conservancy

American Farmland Trust | Black Owners of Solar Services | Cornell Atkinson Center for Sustainability | Enel North America | Renewable Thermal Collaborative | Rivian | RWE | Schneider Electric | Seneca Environmental | Solar Stewards | Sustain Our Futures Foundation | WattTime | World Wildlife Fund

Our Vision: Supercharge Purpose-Driven Renewable Procurement



2022 2030

Audience Q&A

Thank you!