



Renewable Energy Procurement

Beau Griffey

Client Executive, Energy Supply Services

Trane



Building Advantage





Welcome to the IDEA Webinar Series

- ☐ The webinar will **start promptly at 3:00pm EST (Boston time) and is scheduled to last one (1) hour; including time for questions.**
- ☐ Please **mute your phone** during the webinar. All lines are muted.
- ☐ **Questions to Presenters:** Please enter your **Questions** in the **Q&A** box at the lower right of the screen. These questions will be moderated and addressed during **Q&A Segment** at conclusion of presentation.
- ☐ If you are having problems with video or audio, please send a note via the Chat Box function on the right side. Click the Chat box and choose – “**Chat privately to Cheryl Jacques (host)**”. Or call to IDEA at **+1-508-366-9339**.
- ☐ **Webinar Download or Streaming:** Webinar will be recorded and available via download or streaming. Slides will be made available in pdf format. Please visit **<https://www.districtenergy.org/events/webinars>**.



Beau Griffey, CEP, CEM

Client Executive, Energy Supply Services

Trane

beau.griffey@trane.com

Market Trends



80%

of the world's top 250 companies include corporate responsibility data in their annual reports, up from 44% in 2011. ¹



63%

of Fortune 100 companies committed to at least one climate or clean energy target by 2016 ²

206

Companies have committed to RE100 (100% renewable energy).⁴

Utility-scale Offsite Renewable Energy (ORE) procurement for corporate buyers is projected to be expected to reach

2.7 GW

\$3.1B

in 2027 in North America ³

1. The KPMG Survey of Corporate Responsibility Reporting 2017

2. World Wildlife Fund, Calvert Investments, CDP, and Ceres, Power Forward 3.0: How the Largest U.S. Companies Are Capturing Business Value while Addressing Climate Change, [April 2017](#).

3. Navigant report "Corporate Utility-Scale Offsite Renewable Energy Procurement Solutions" Q2, 2018

4. RE 100 (as of October 2018 <http://there100.org/companies>)

Massive Adoption

“Give me a place to stand on
and I will move the earth.”

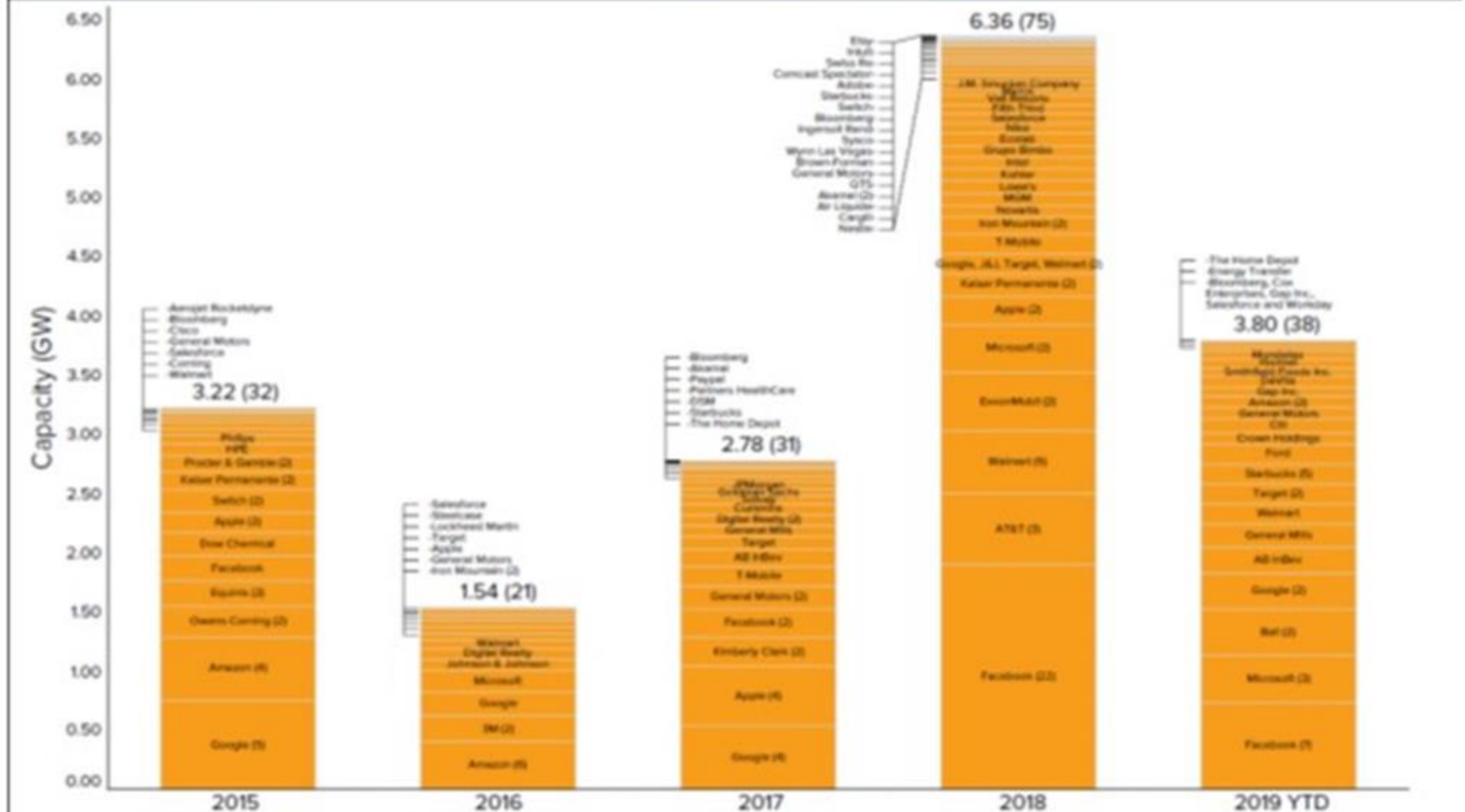
Archimedes



Corporate Renewable Deals 2015-2019 YTD

REBA
Renewable Energy Buyers Alliance

Corporate Renewable Deals
2015 – 2019 YTD



As of August 28, 2019. Publicly announced contracted capacity of corporate Power Purchase Agreements, Green Power Purchases, Green Tariffs, and Outright Project Ownership in the US, 2015 – 2019 YTD. Excludes on-site generation (e.g., rooftop solar PV) and deals with operating plants. (P) indicates number of deals each year by individual companies. Copyright 2019 by Renewable Energy Buyers Alliance.

Most Valuable Unit of Energy?



1. The one you don't use



2. The one you produce



3. The one you buy

Renewable Energy Options



GENERATE
ON SITE



DEFAULT
REGIONAL DEFAULT
GENERATION MIX



SELECT
'GREEN' TARIFF
UTILITY RATE



PARTICIPATE
IN POWER
PURCHASE
AGREEMENT (PPA)



ENGAGE IN
VIRTUAL POWER
PURCHASE
AGREEMENT



PURCHASE
RENEWABLE ENERGY
CERTIFICATES (RECs)

PRICE MANAGEMENT

SUSTAINABILITY

Onsite Generation



Installed behind the meter at your facility. Either you own the asset or a third party does.



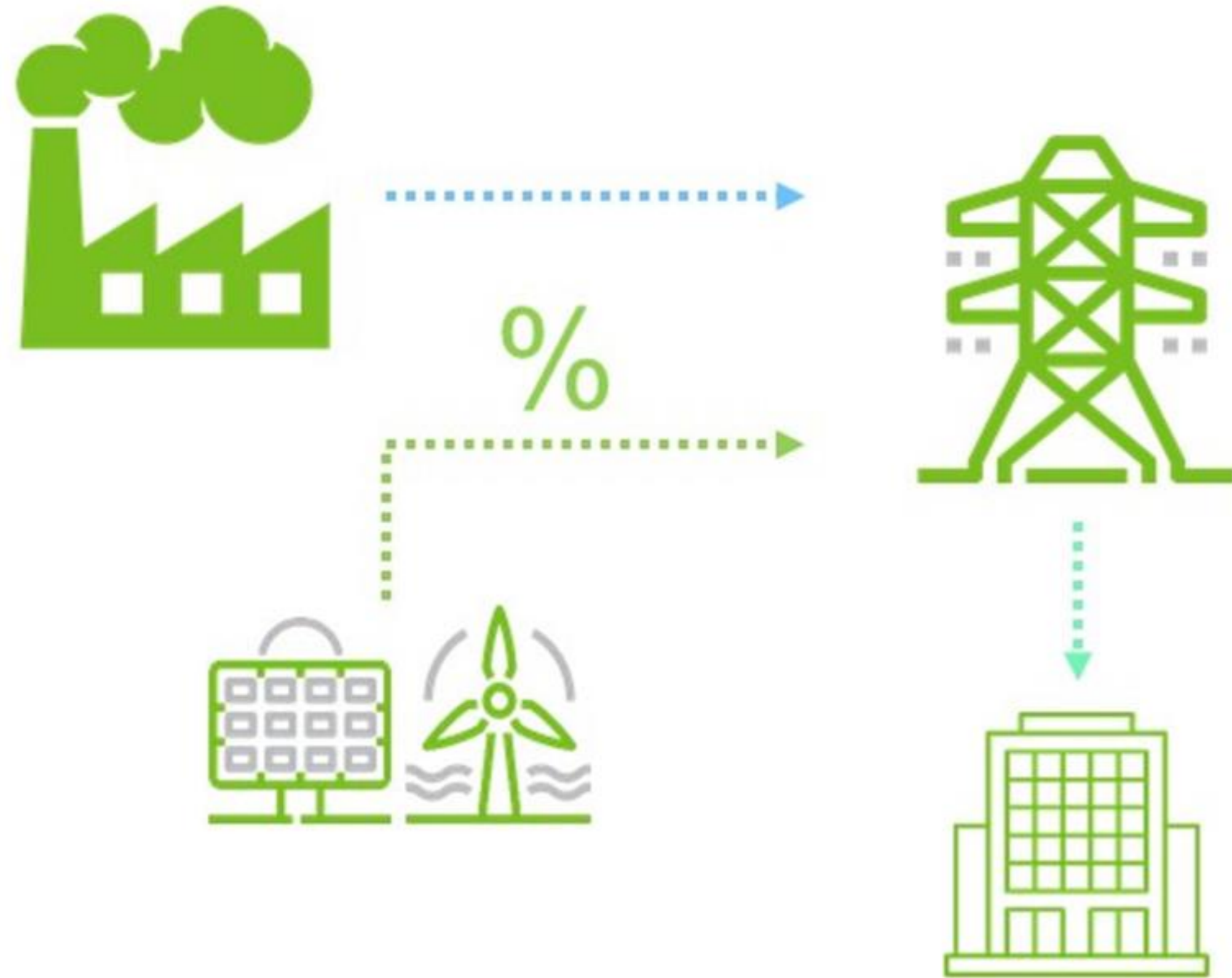
Supports renewable energy efforts and sustainability goals



Risk profile, capital budget considerations, long term outlook.

Renewable Energy Directly Reduces Site Emissions

Regional Default Generation Mix



Some local utility providers are required to generate part of its energy from renewables

Supports renewable energy efforts and sustainability goals

May not be enough to meet goals
No additionality

Some customers may not be aware and miss environmental reporting benefit

Green Tariff Utility Rate



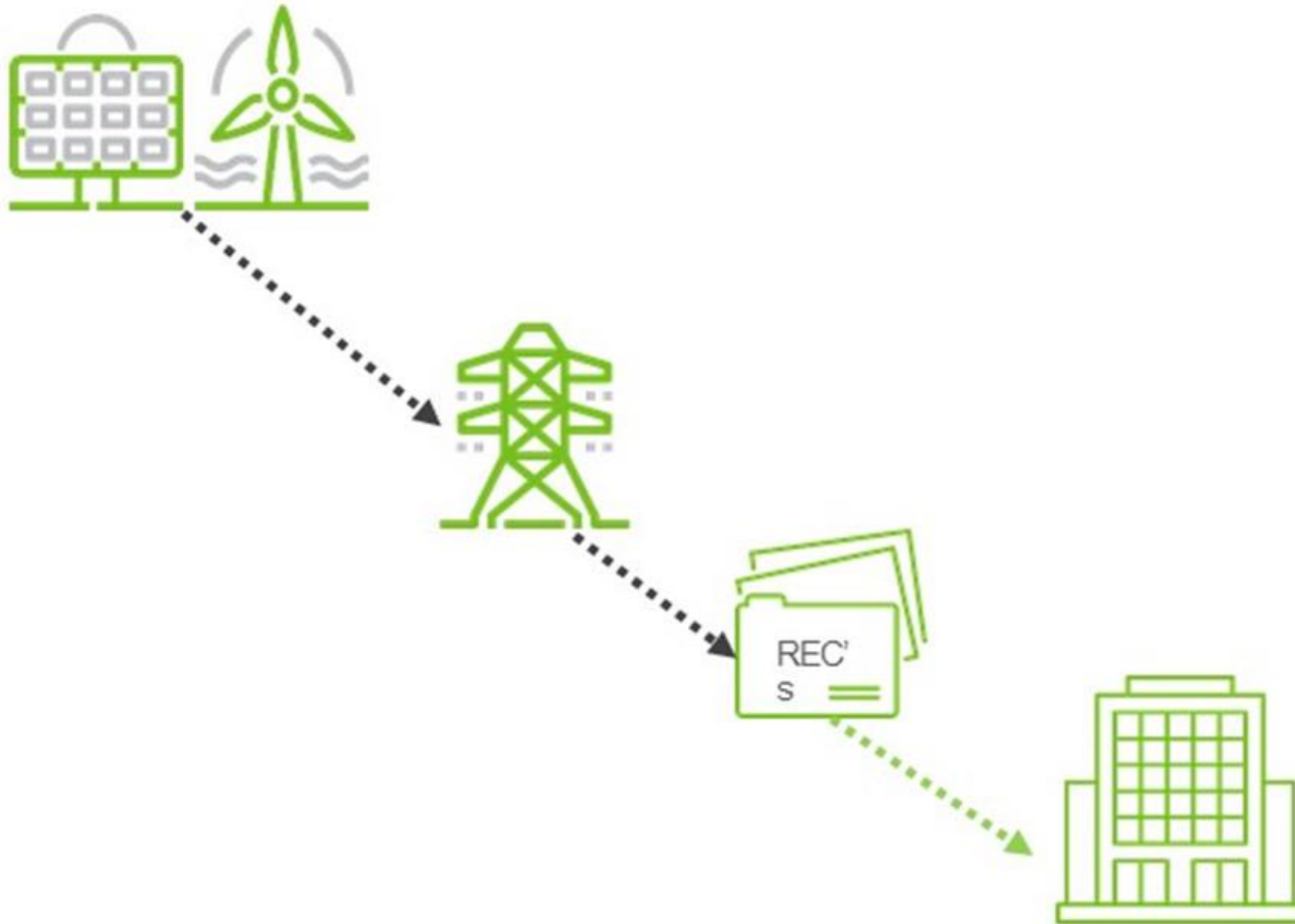
Specific rate from local utility grid for electricity generated from renewable sources

Supports renewable energy efforts and sustainability goals

Cost premiums, availability and possibly no *additionality* benefit

Utility statement eligible for environmental reporting purposes

Power Purchase Agreement (PPA)



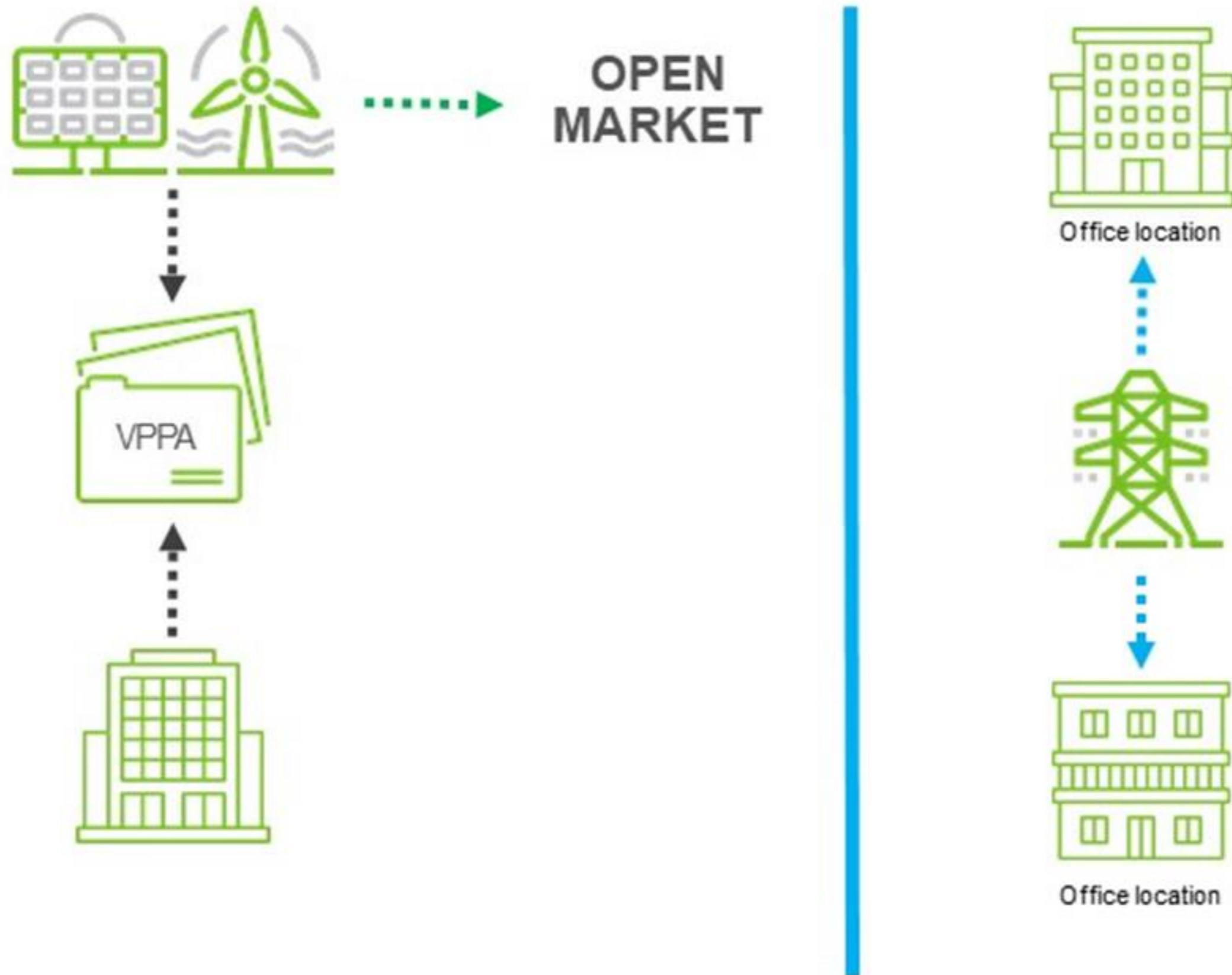
The PPA contract defines all of the commercial terms for the sale of electricity between the two parties

PPA developer handles getting project up and running, including Environmental reporting with RECs ownership

Contract length, Alignment between usage & generation profile, Additionality credit

Price management and environmental benefit

Virtual Power Purchase Agreement (VPPA)



Contract between buyer & renewable energy generator
Energy sold to local wholesale market



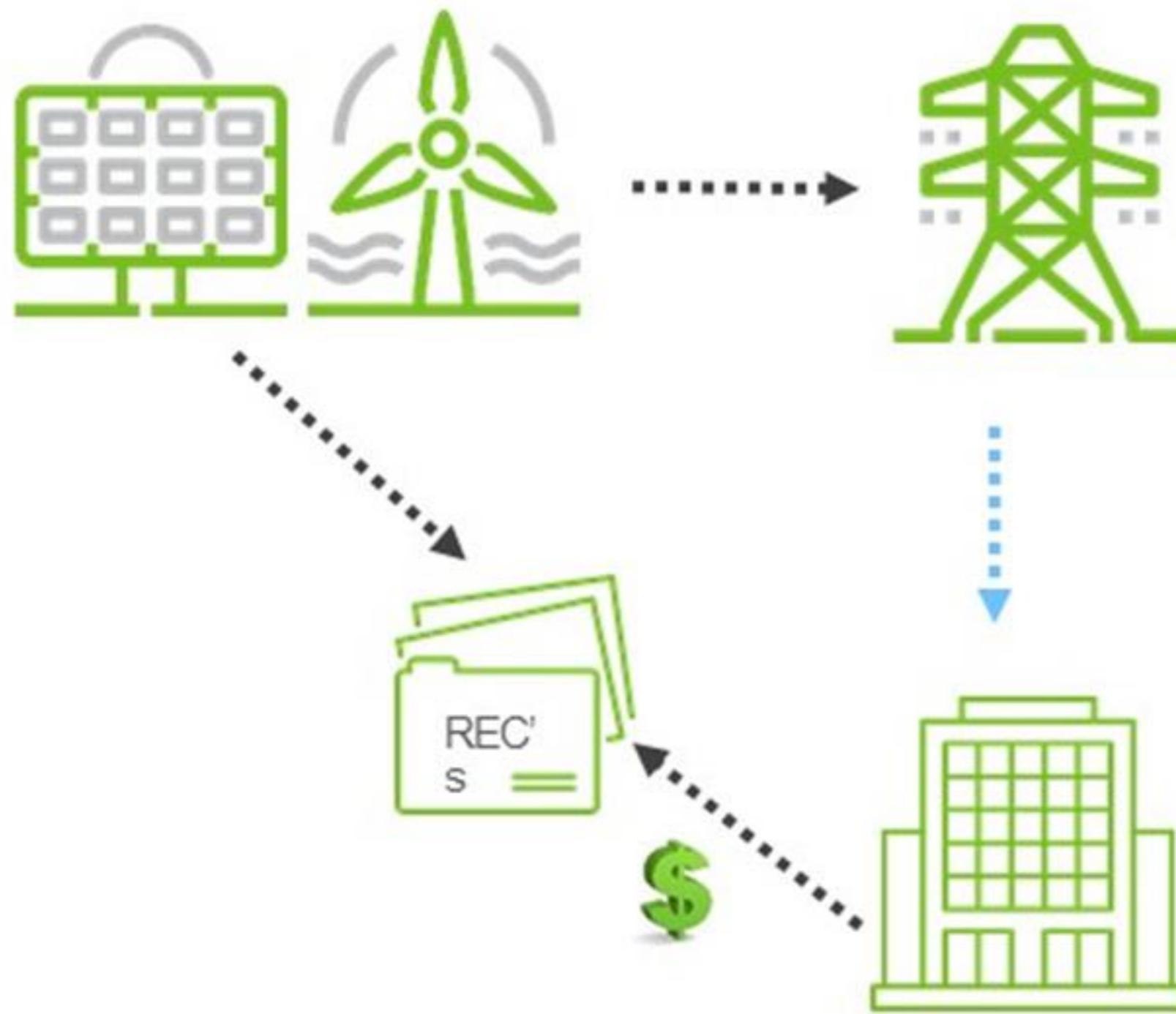
No actual physical transfer of energy between electricity generator & buyer



Location, future pricing expectations, length of contract, additionality

One VPPA could satisfy most or all of organization's renewable energy goals

Renewable Energy Certificates (RECs)



Proof that megawatt-hours (MWh) of electricity were generated from an eligible renewable energy resource



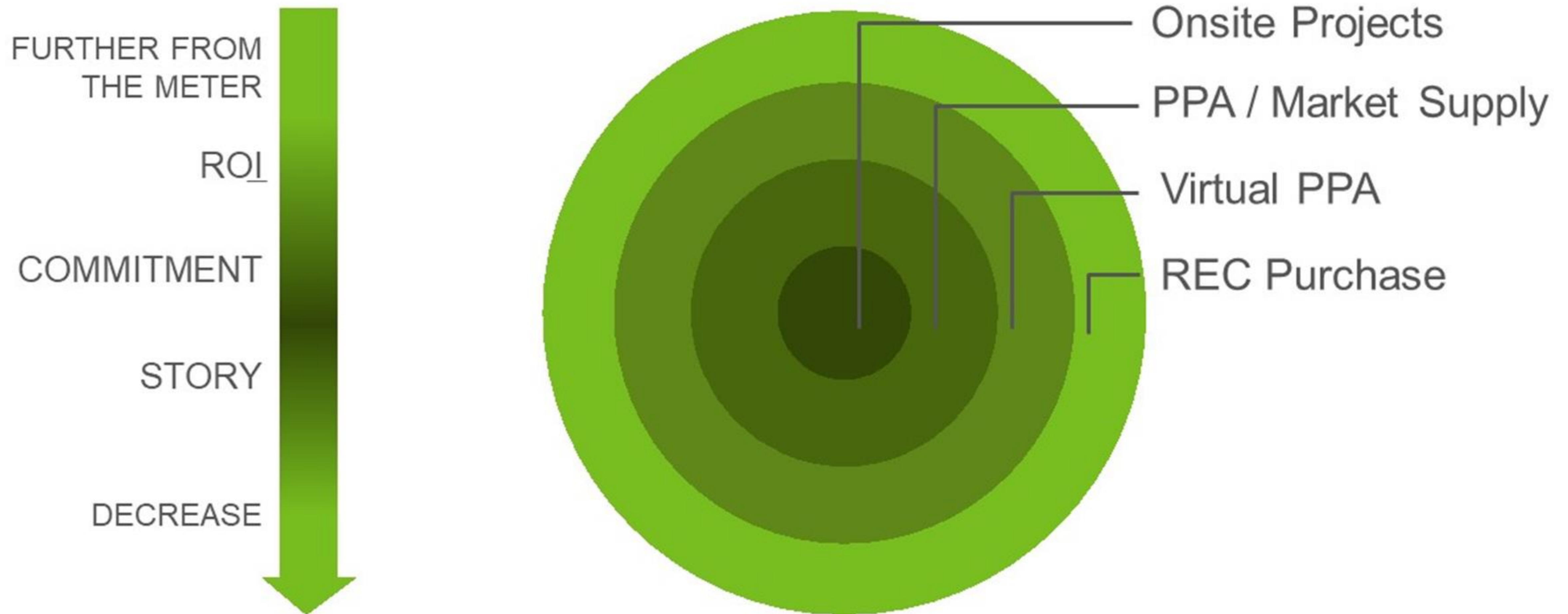
Buy as much or as little as is needed



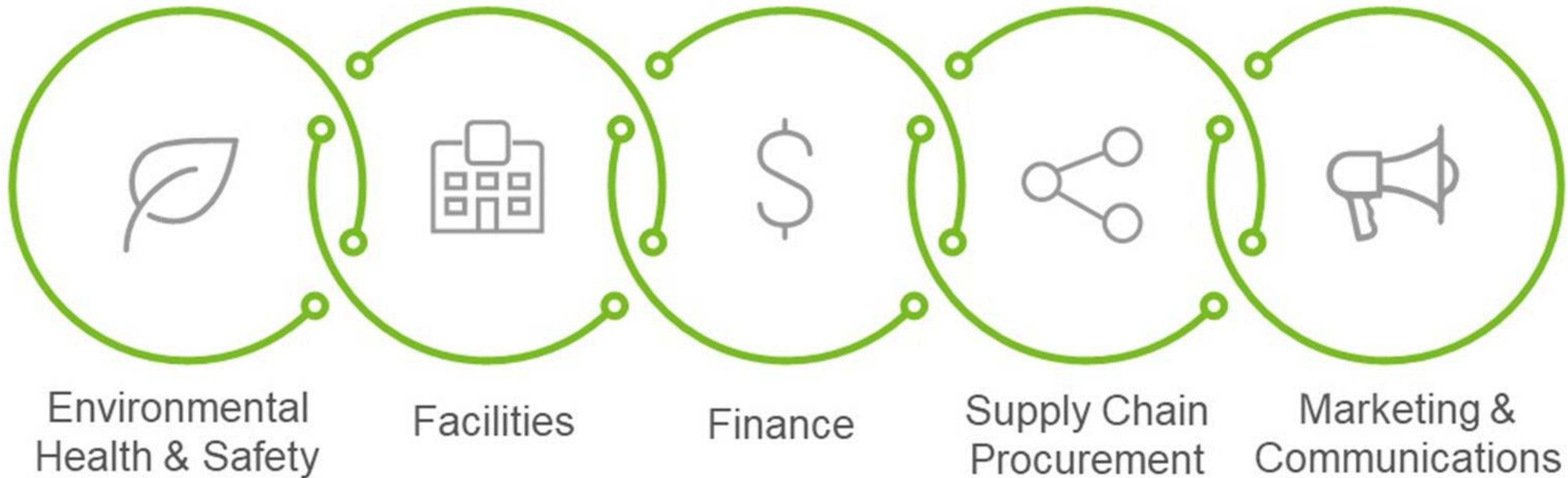
Prices could be negotiated bilaterally or 'auction' environment...no additional credit

Documented proof eligible for the environmental reporting purposes

The Solution Spectrum



The Collaborative Necessity



ALIGN INTERNALLY AND IDENTIFY CHAMPIONS

Create a Roadmap



What is your goal?



How are you going to get there?



How will you measure it?



geographical constraints

current utility rates

additionality credit

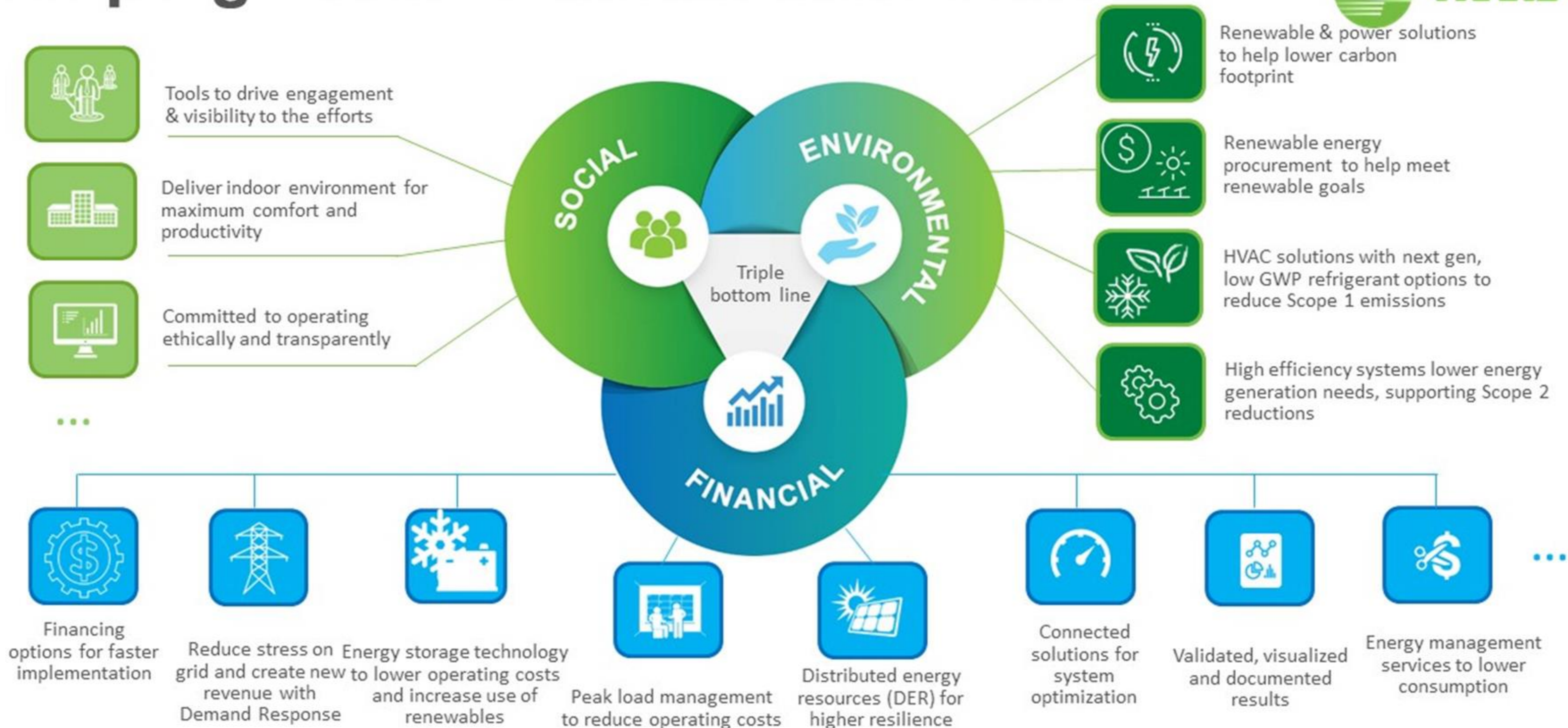
future energy price projections

use scenarios

production considerations



Helping Build a Sustainable Future



2030 Targets & Aspirations



Operations & Supply Chain

People

Citizenship

Customer Outcomes

**Achieve
Carbon-Neutral
Operations
and
Net Positive Water**

**Gender Parity
in Leadership
Roles**

**Enhanced
Workforce Diversity**

**10 Signature
Programs**

**100,000 Employee
Volunteer Hours**

**Reduce Customer
Carbon Footprint
by**

1 GIGATON

**(or 1 billion metric tons
of CO₂e*)**

Summary



- District energy can be scope 1 or 2 emissions
- Many different tools to meet commitments
 - Additionality is key
 - Innovation is important
 - Firming to 100 percent renewable is next
- Solving for natural gas is a focus area
- Utilizing experience with electric deals at scale is the basis of the next iteration of energy transition for corporates

Questions?



Beau Griffey, CEP, CEM

Client Executive, Energy Supply Services

Trane

beau.griffey@trane.com



CampusEnergy2020

FEBRUARY 10-14 ▲ SHERATON DENVER ▲ DENVER, COLORADO

www.districtenergy.org/campusenergy2020



IDEA2020

New Vision for District Energy

June 22 - 25 ♦ Omni Shoreham Hotel ♦ Washington, D.C.

www.districtenergy.org/IDEA2020



INTERNATIONAL
DISTRICT ENERGY
ASSOCIATION