

GREENHOUSE
GAS PROTOCOL

**Measuring and managing electricity
emissions**

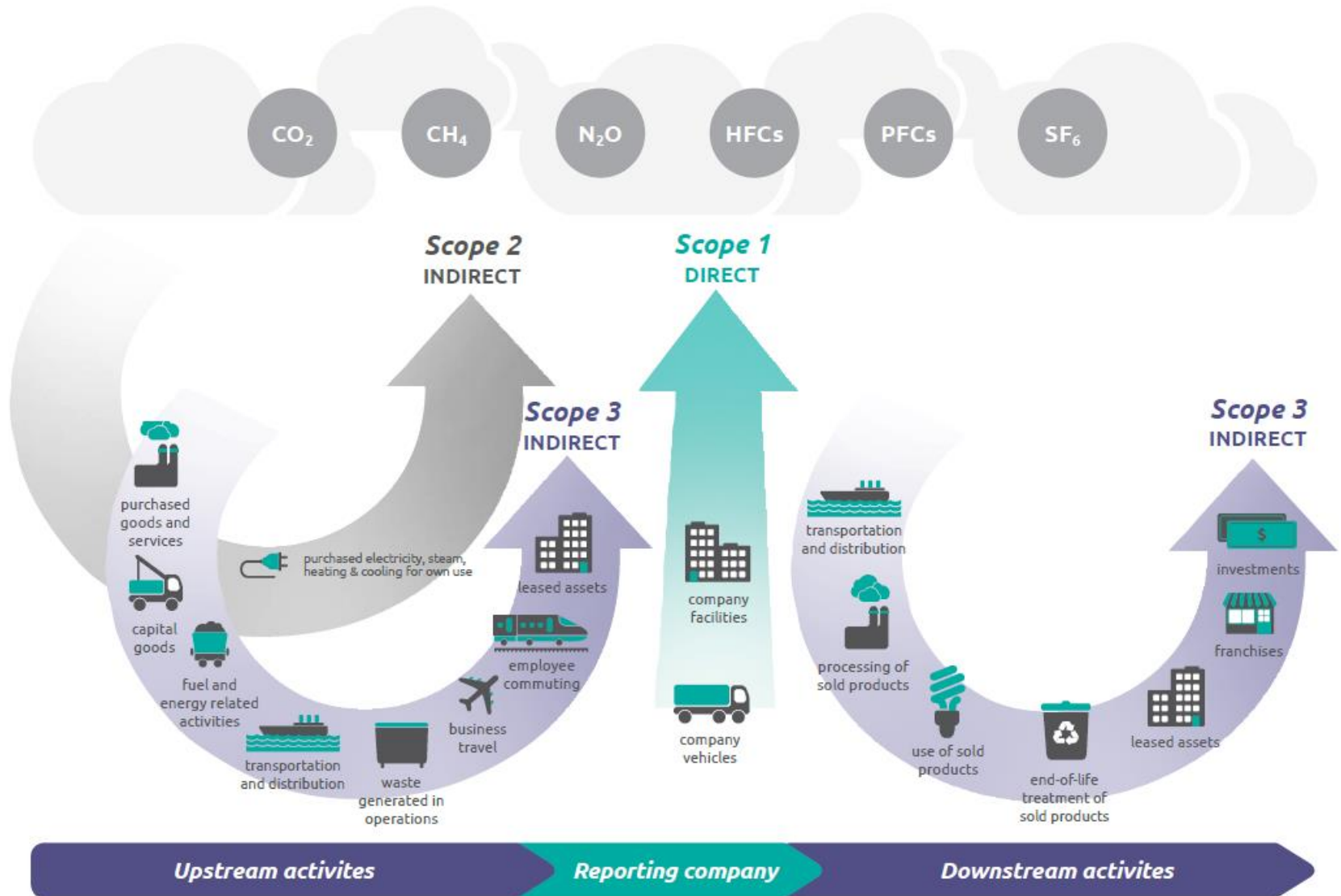
Mary Sotos, Associate at World Resources Institute

40%
global
emissions

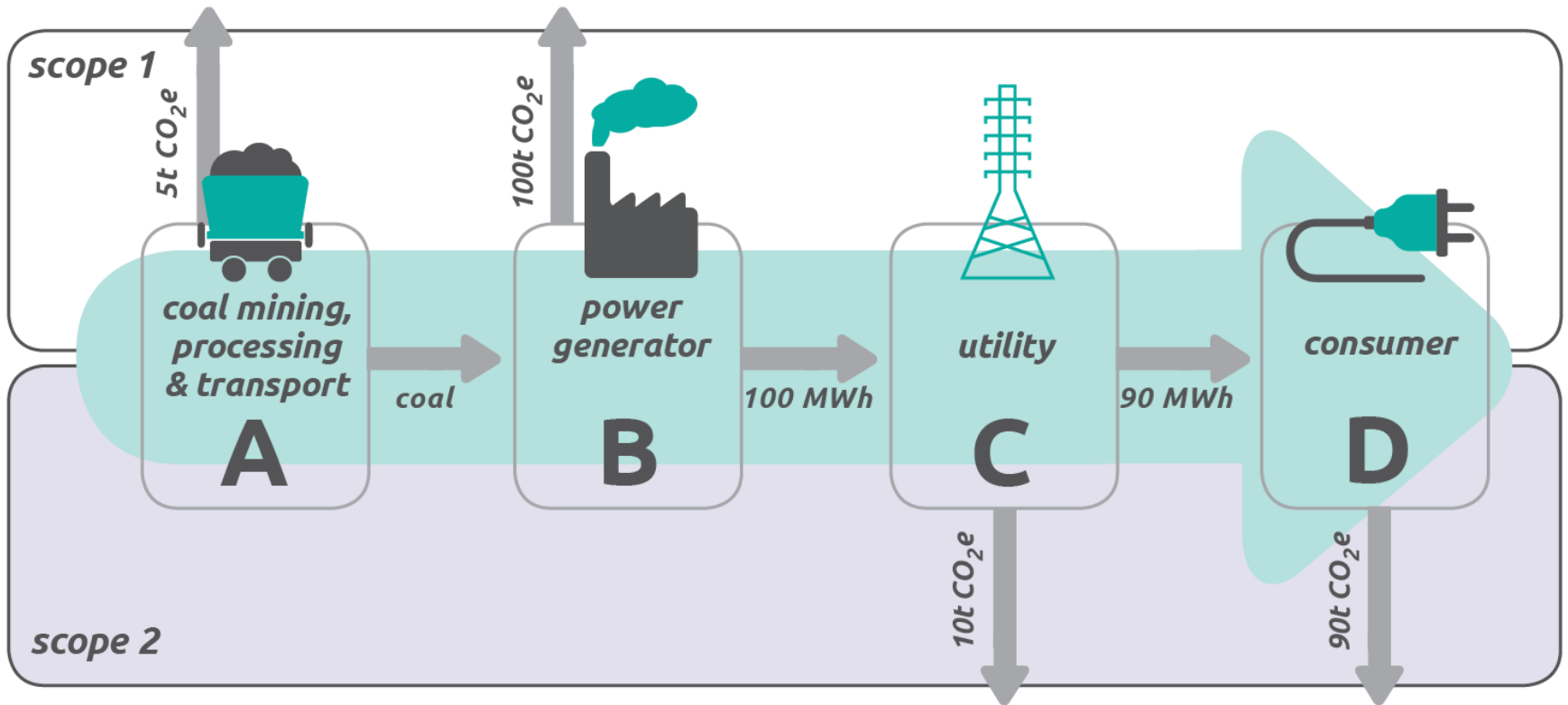
50%
electricity use
by business

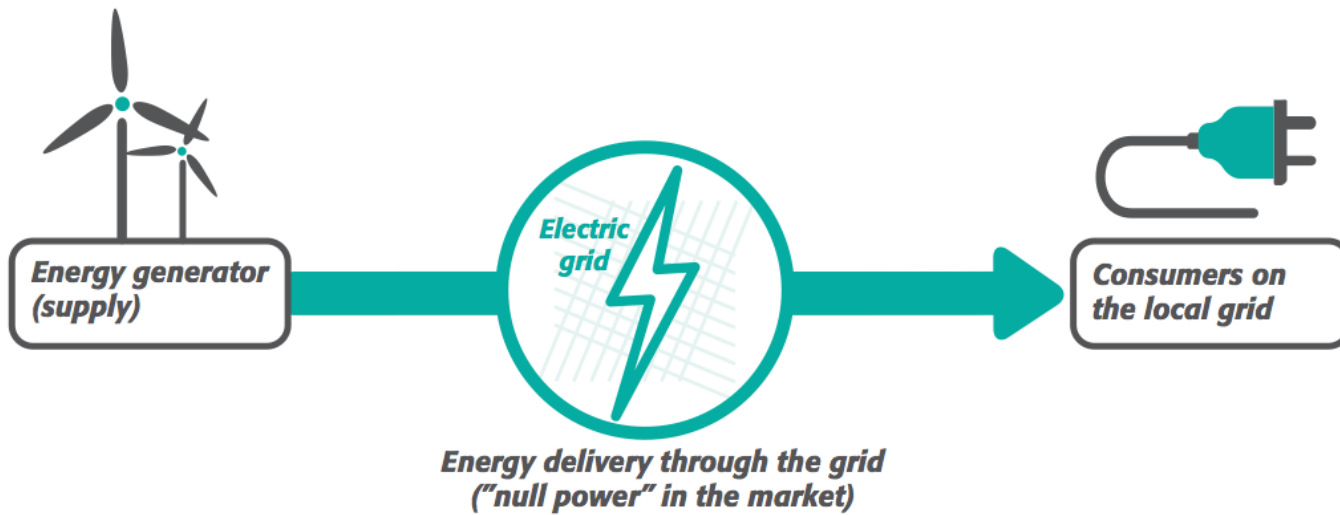
60%
Fortune 100
have set clean
energy and GHG
reduction targets

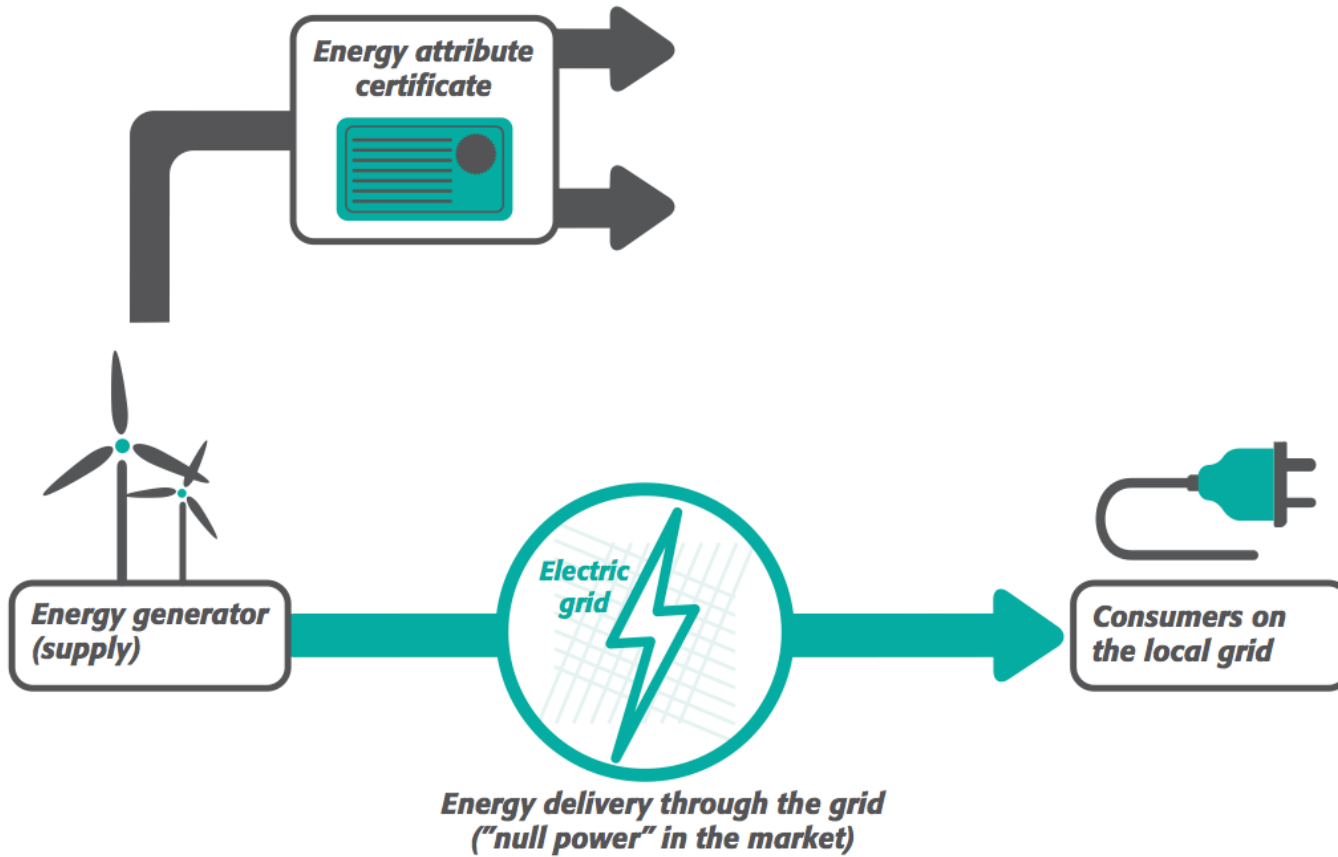
**Measuring electricity
emissions matters!**

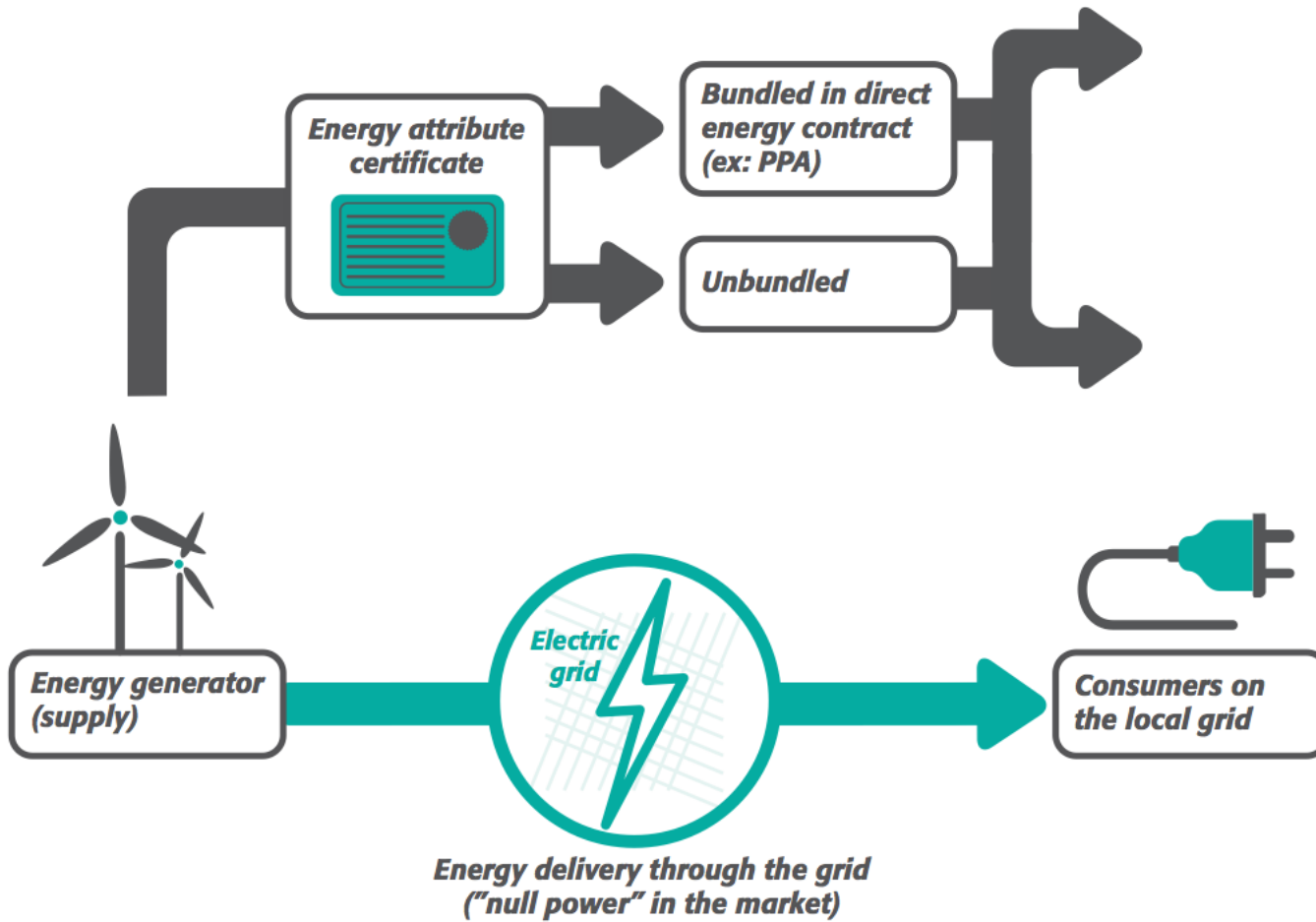


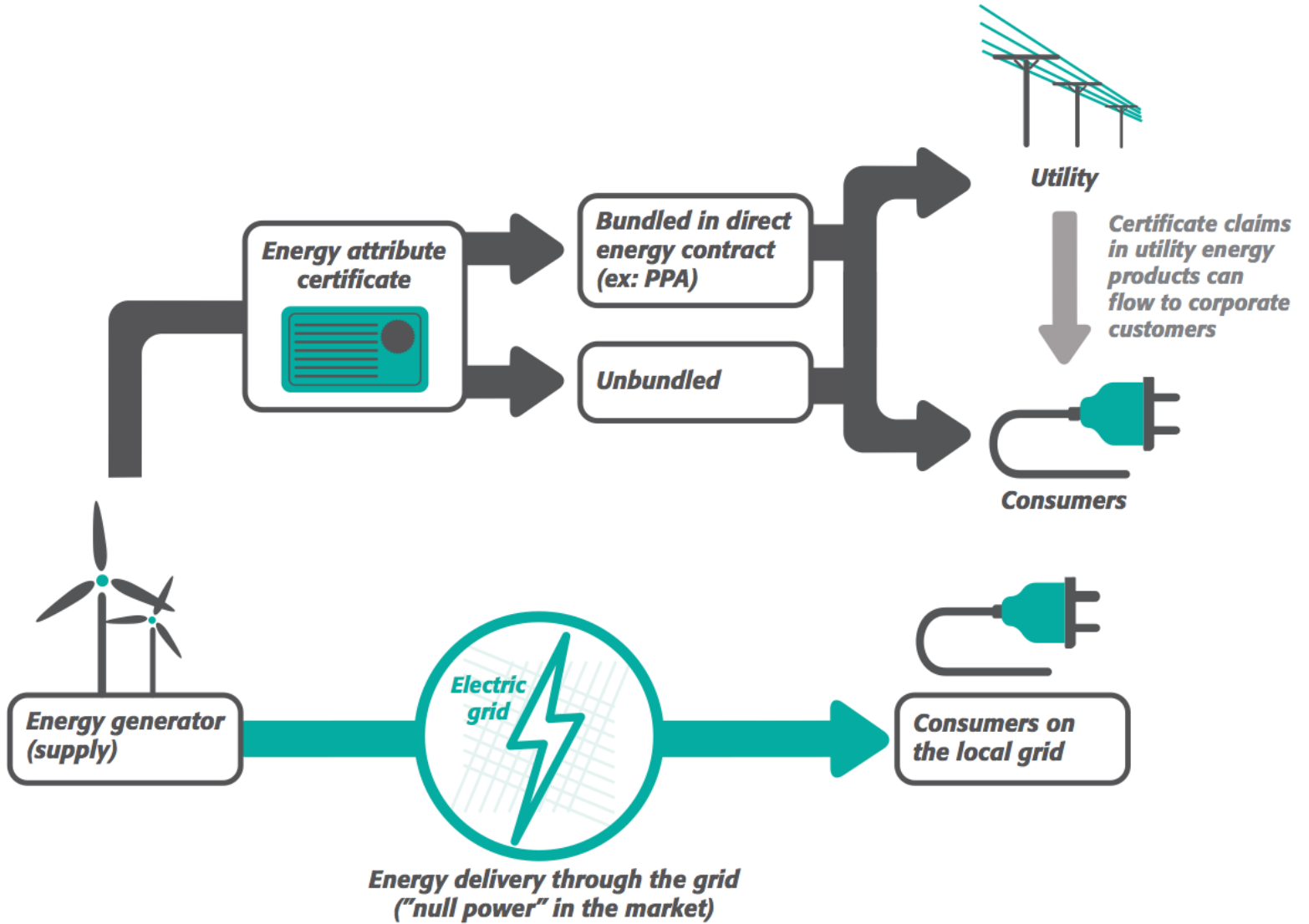
Emissions across an electricity value chain











$$\text{Scope 2 Emissions} = \text{Activity Data} \times \text{Emission Factor}$$

MWh **mt CO₂e/
MWh**

Key Questions for Scope 2 Methods

CONCEPT

Grid vs.
market?

Double
counting?

INSTRUMENTS

What
counts?

How to
compare?

IMPACT

Directly or indirectly
reduce GHG emissions
over time?



New Accounting and Reporting Requirements

For companies with operations only in markets without choice in electricity product or supplier

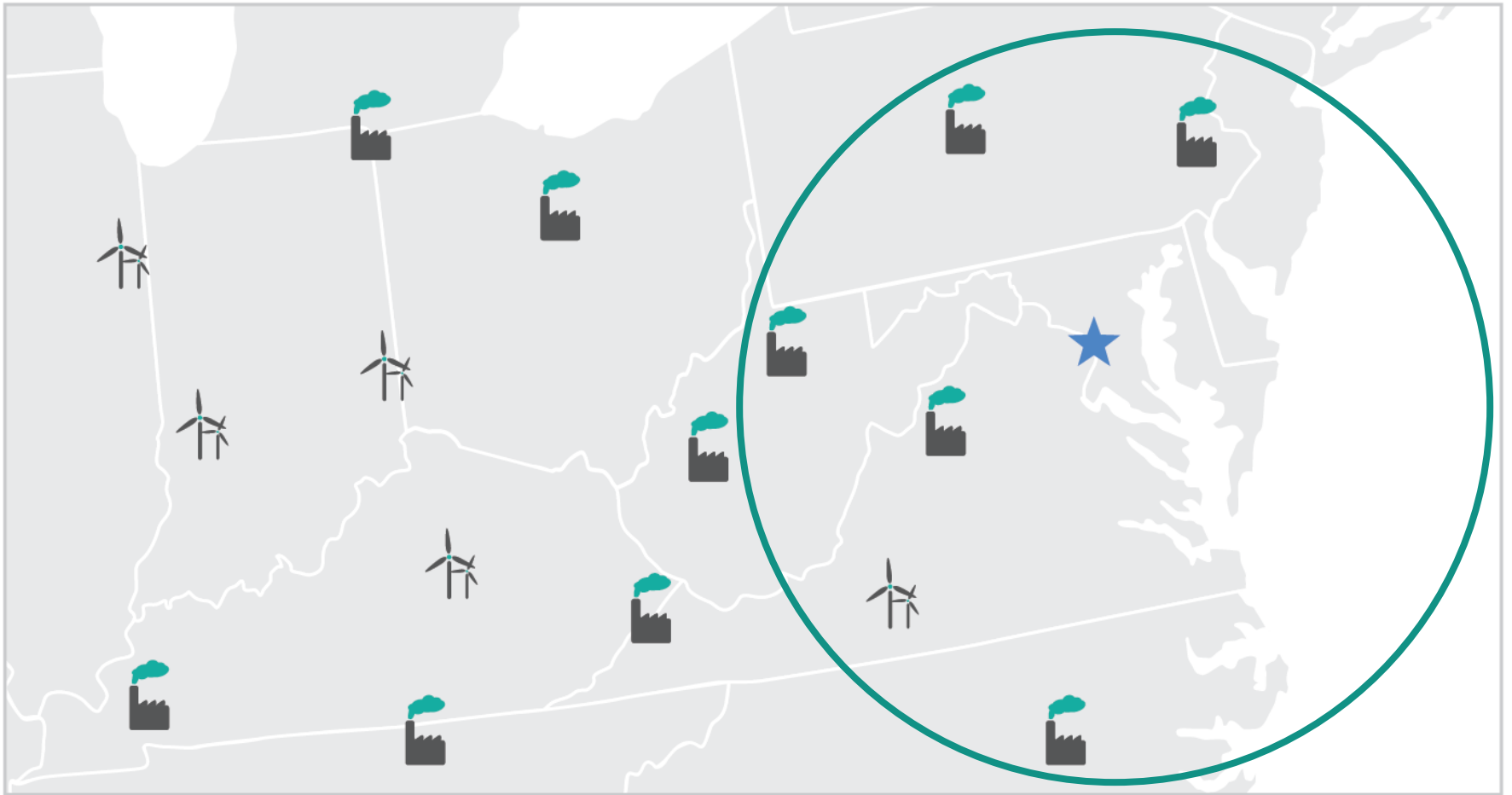
No change.

Only one scope 2 total will be reported based on the location-based method.

For companies with operations in markets with choice in electricity product or supplier:

1. Dual reporting
2. Scope 2 Quality Criteria
3. Recommended additional disclosures

Location-based method

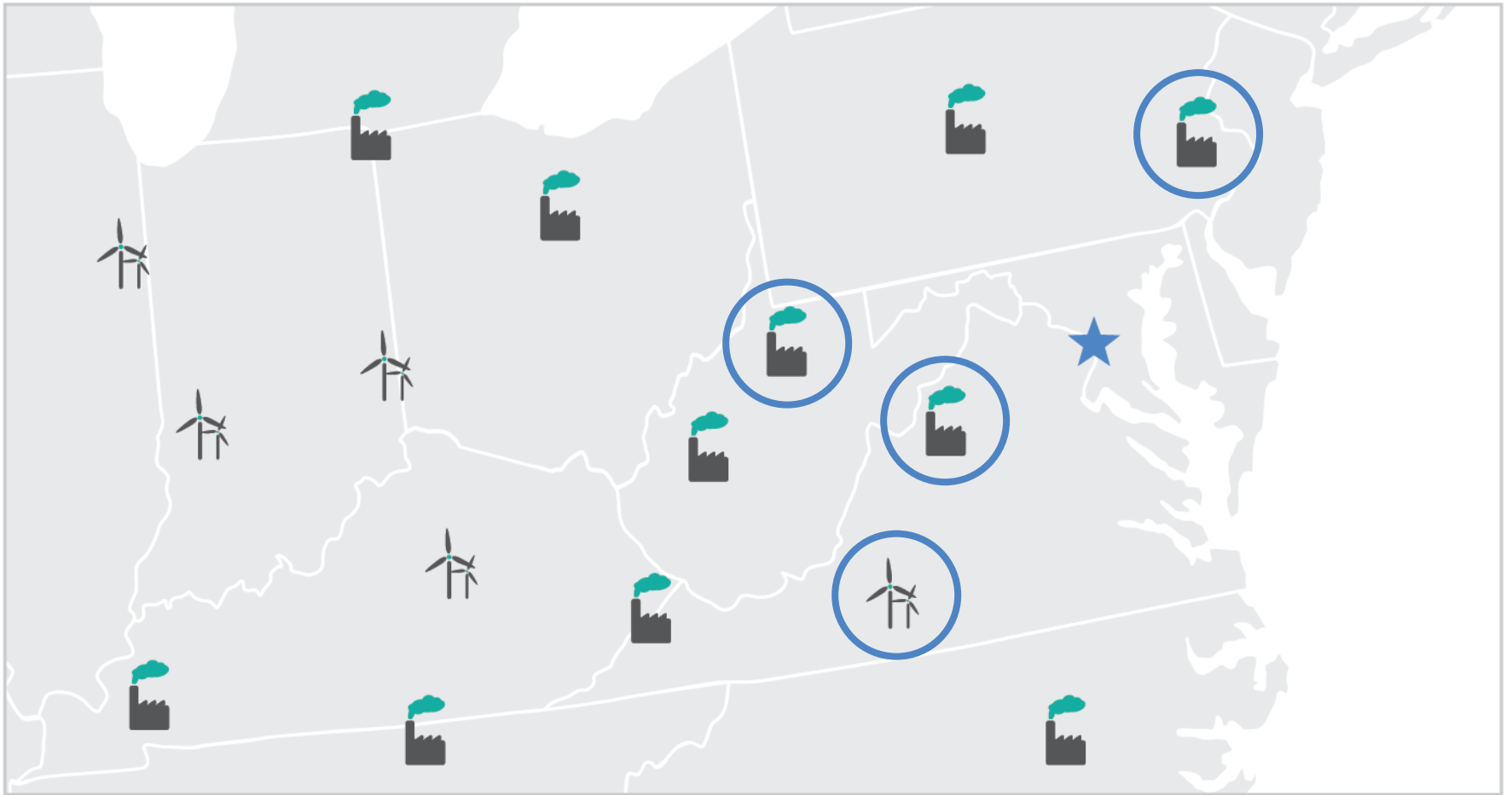


(map not representative)

Location-based method emission factor hierarchy

1. Regional or sub-national emission factors
2. National production emission factors

Market-based method

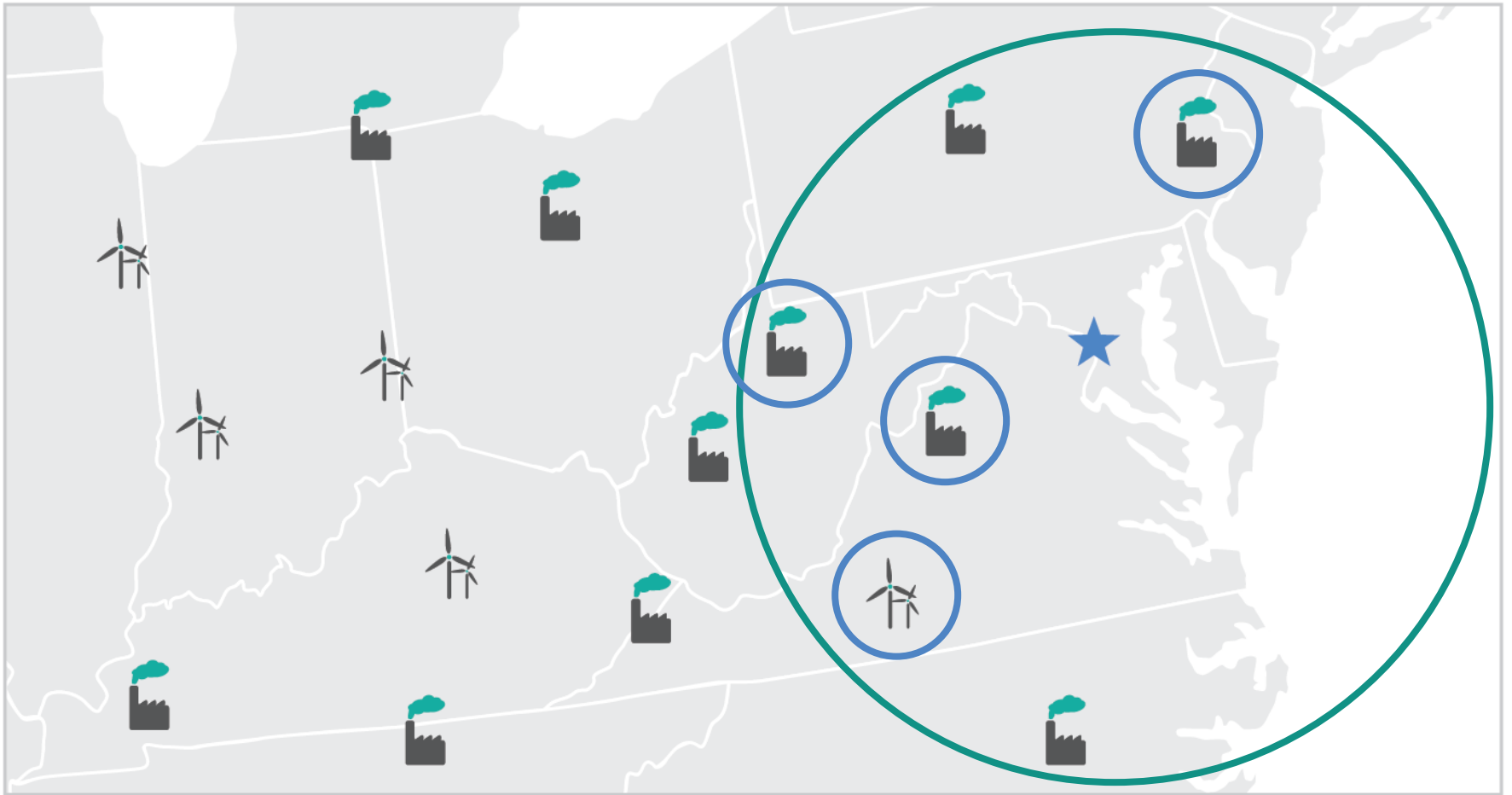


(map not representative)

Market-based method emission factor hierarchy

1. Electricity attribute certificates or equivalent instruments
2. Contracts for electricity, such as PPAs
3. Supplier/Utility emission rates
4. Residual mix (sub-national or national)
5. Other grid-average emission factors (sub-national or national) *see location-based data*

Residual Mix



(map not representative)

Country	Location-Based Total (mtCO2e)	Market-Based Total (mtCO2e)	Instrument Types
USA	650	0	RECs to cover 100% of consumption
Norway	100	500	Residual mix
China	800	800	N/A
India	850	400	Collaborative solar PPA to cover 50% consumption
Mexico	400	0	PPA to cover 100% of consumption
TOTAL	2,800 mtCO2e	1,750 mtCO2e	

Scope 2 Quality Criteria

Contractual instruments shall:

1. Convey GHG information
2. Be an exclusive claim
3. Be retired
4. Match up to inventory period
5. Be sourced from same market as company

Utility emission factors shall be:

6. Calculated based on delivered electricity

Direct purchases shall:

7. Convey GHG claims to the purchaser

Using any instruments requires:

8. Adjusted residual mix, or disclose its absence



GREENHOUSE
GAS PROTOCOL

Policy Neutrality

Concerns with market-based method instruments

Concept of market-based accounting?

Execution of market mechanics?

Impact of markets and instruments?

Dual reporting

Scope 2 Quality Criteria

Additional reporting recommendations

Additional recommended disclosures

- **Instrument labels**
- **Power plant features**
 - resource type, facility location, facility age
- **Policy context**
 - Supplier quotas like RPS?
 - Cap and trade?
 - Funding/subsidy receipt?
 - Offsets?

Choices by all players in the market can have an impact

Jurisdictional
policy

Certification
schemes

Utility/
supplier
labels

Corporate
policy and
decisions

Companies can:

1. Contract directly with new low-carbon energy projects
2. Work with electricity suppliers for new projects
3. Establish “eligibility criteria” for corporate procurement
4. Provide incremental funding or donations

- **Download the publication, Executive Summary, other materials at:**
http://www.ghgprotocol.org/scope_2_guidance
- **Other learning opportunities:**
 - **CDP** workshop May 29th (New York)
 - **EDF Talk Power conference** June 17th (London)
 - **GHG Protocol webinar trainings:** New Guidance fully integrated into quarterly GHG Protocol *Corporate Standard* webinar trainings (next in **July**):
http://ghgprotocol.org/January-2015-Webinar-Training_GHG-Protocol-Corporate-Standard
- **Contact us:**
- Mary Sotos – mary.sotos@wri.org