

The challenges of buying renewable energy



UNIVERSITY OF EDINBURGH
Business School

Dr Matthew Brander

Email: Matthew.Brande@ed.ac.uk

B-CCaS | Centre for
Business,
Climate Change
& Sustainability

www.business-school.ed.ac.uk

Agenda



UNIVERSITY OF EDINBURGH
Business School

1. What is scope 2 and the market-based method?

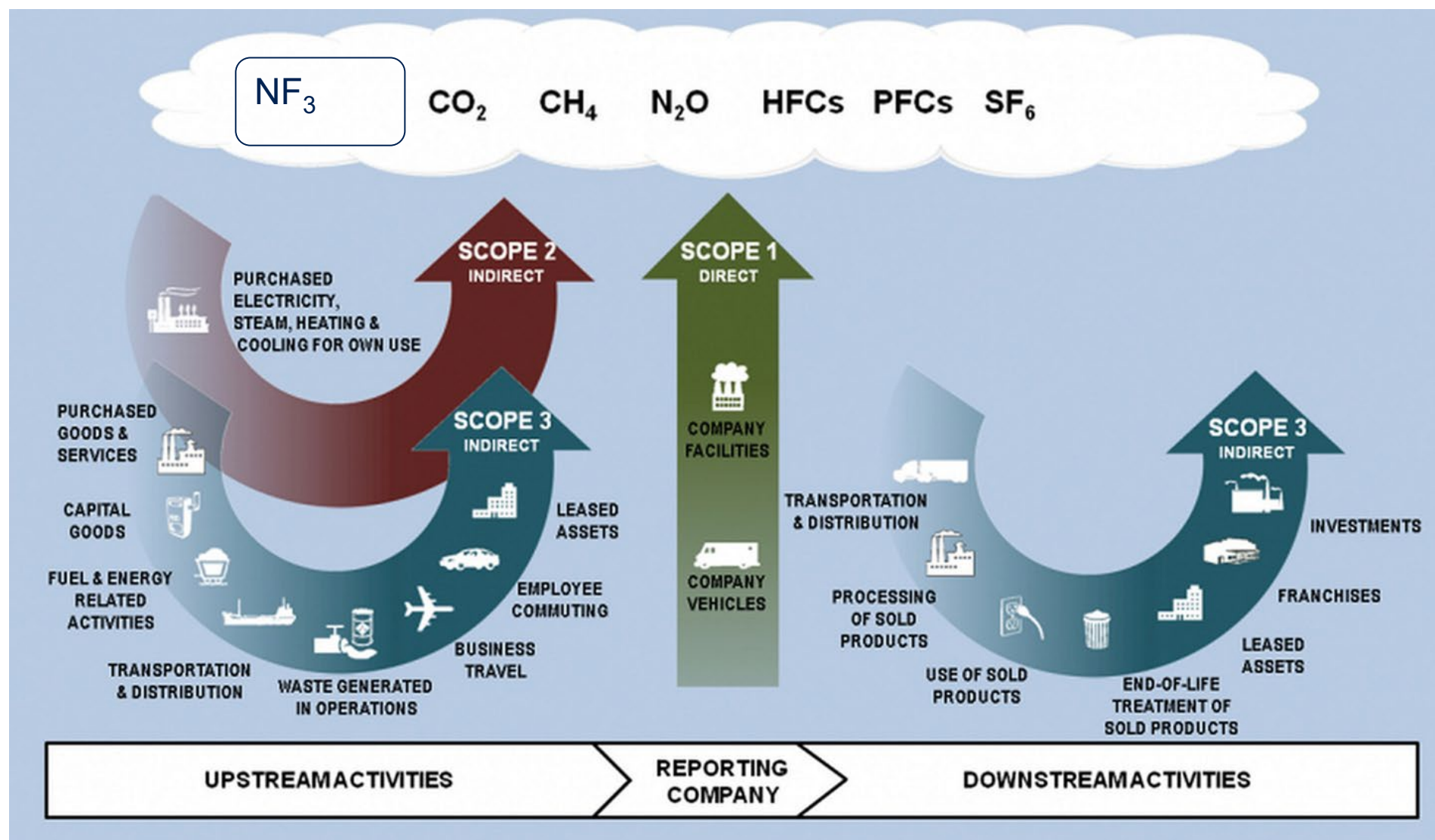
2. Two (related) problems:

- Additionality
- Accuracy of GHG accounts

3. Solutions:

- Report impact separately
- Additionality requirement

What is scope 2 and the market-based method?



Source: GHG Protocol Value Chain (Scope 3) Standard.

<https://ghgprotocol.org/standards/scope-3-standard>

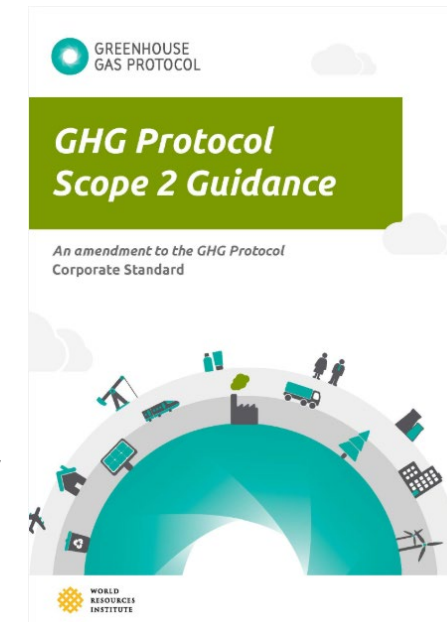
What is scope 2 and the market-based method?



There are two different methods for calculating grid electricity:

1. **Locational grid average:** Total emissions from all generation/total electricity generated (e.g. 0.19kg CO₂/kWh for the UK)
2. **Market-based Method:** Contractual arrangement via Renewable Energy Certificates, Guarantees of Origin, or other contract.

User can claim the attributes associated with renewable generation (e.g. 0 kgCO₂/kWh)



What is scope 2 and the market-based method?



UNIVERSITY OF EDINBURGH
Business School

Widespread practice:

- ~2,000 companies use market-based method to report GHG emissions to CDP

Unilever UK sites to be powered by 100% renewable wind energy

23/05/2017

Fifteen UK sites¹ are now using electricity from renewable wind sources as part of a new contract with Eneco

Google Officially Hits Its 100% Renewable Energy Target

The tech giant's renewable energy purchases met—and even exceeded—the amount of electricity used in

RBS commits to using 100 per cent renewable energy for all electricity

RBS has today announced that it will use 100 per cent renewable energy for all of its electricity by 2025 and demonstrated its commitment by joining RE100, the global corporate leadership initiative led by The Climate Group in partnership with CDP.

Our news

10 September 2018

Two (related) problems:

Problem 1 - Additionality:

- **Would the renewable energy/project exist anyway (in the absence of the company action/buying the REC)?**
- **Independent empirical studies show no or very limited additionality:**
- Gillenwater (2013). [Probabilistic decision model of wind power investment and influence of green power market](#). Energy Policy.
- Gillenwater, Lu, and Fischlein (2014). [Additionality of wind energy investments in the US voluntary green power market](#). Renewable Energy.
- Dagoumas and Koltsaklis (2017). [Price signal of tradable guarantees of origin for hedging risk of renewable energy sources investments](#). International Journal of Energy Economics and Policy
- Hamburger and Harangozó (2018). [Factors affecting the evolution of renewable electricity generating capacities: a panel data analysis of European countries](#). International Journal of Energy Economics and Policy.

More information: <https://www.bccas.business-school.ed.ac.uk/impact-and-collaboration/renewable-energy-purchasing/>

Two (related) problems:

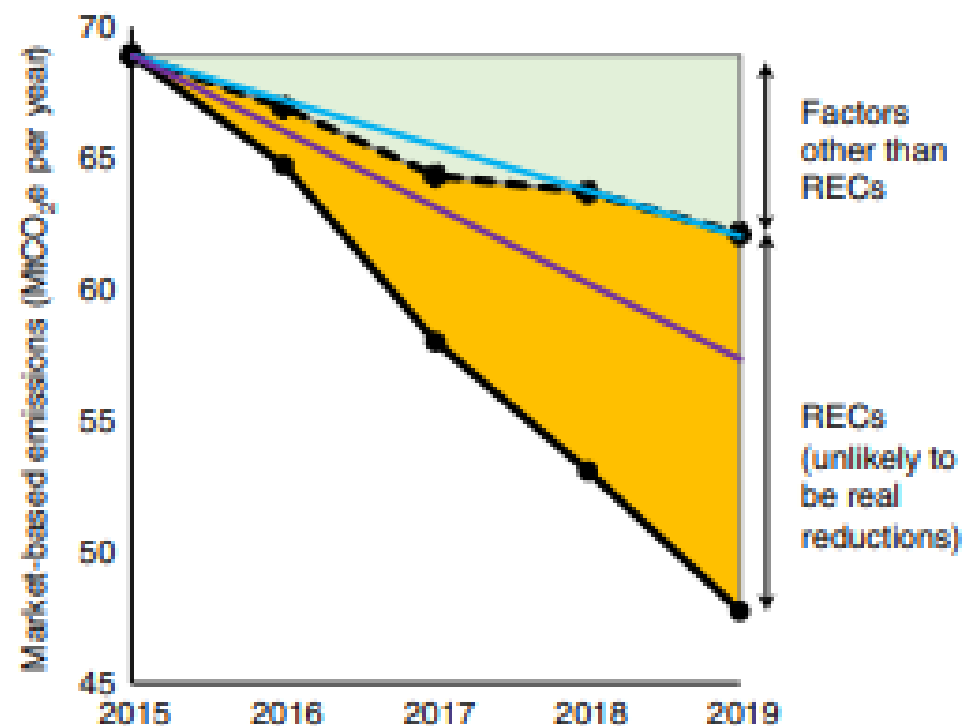
Problem 2 – Accuracy of GHG disclosures:

- Companies can report '0' emissions from electricity consumption... BUT is this an accurate reflection of their emissions?
 - They still consume power from the grid (contribute to aggregate demand) – **and cause emissions**
 - They **haven't caused any increase in renewable generation**
 - **Distraction effect:** 'Our scope 2 emissions are zero...so we don't need to do anything else to reduce them'

Two (related) problems:

Problem 2 – Accuracy of GHG disclosures:

- Companies can report they have met their emission reduction targets (including SBTs) **without reducing emissions to the atmosphere**



Bjorn, Lloyd, Brander, and Matthews (2022). [Renewable energy certificates threaten the integrity of corporate science-based targets](#). Nature Climate Change.

Two (related) problems:

Growing awareness of problems:

- **Policy awareness:**

- Committee on Climate Change (2020). [Briefing note – corporate procurement of renewable energy: implications and considerations \(PDF\)](#).
- Ademe (2018). [Les offres d'électricité verte \(PDF\)](#).
- UK Government (2021). [Government to tighten rules to stop 'greenwashing' of electricity tariffs](#).

- **Media awareness:**

- BBC Radio 4 (2022). [Inside Science: Miscounting carbon, EU funding stalemate, and how to make a royal hologram](#).
- The Conversation (2022). [Most companies buying renewable energy certificates aren't actually reducing emissions](#).
- Deutschlandradio (2022). [Tricksereien beim Klimaschutz mit Zertifikaten \(Trickery in climate protection with certificates\)](#).
- Wall Street Journal (2022). [Climate-reporting rules could let companies look greener than they are](#).

- **Financial analyst/data providers:**

- S&P Global (2021). [Problematic corporate purchases of clean energy credits threaten net zero goals](#).
- Lazard Asset Management (2020). [Renewable energy credits' carbon secret](#).
- Bloomberg (2022). [Companies' climate goals in jeopardy from flawed energy credits](#).
- Bloomberg (2022). [What really happens when emissions vanish](#).

Solutions:



UNIVERSITY OF EDINBURGH
Business School

1. **Locational method only** and report any impact from contractual arrangements separately (using 'project-level' or 'consequential' method)
2. **Allow use of market-based method too** but only if there is **proof of additionality** (e.g. investment analysis)

E.g. Power purchase agreements (PPAs) may cause new renewable deployment (and achieve additionality)

...GHG Protocol is due to launch a survey on revising scope 2 shortly



Thank you – and any questions?