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Competitiveness of corporate sourcing of renewable energy

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Outline of the presentation

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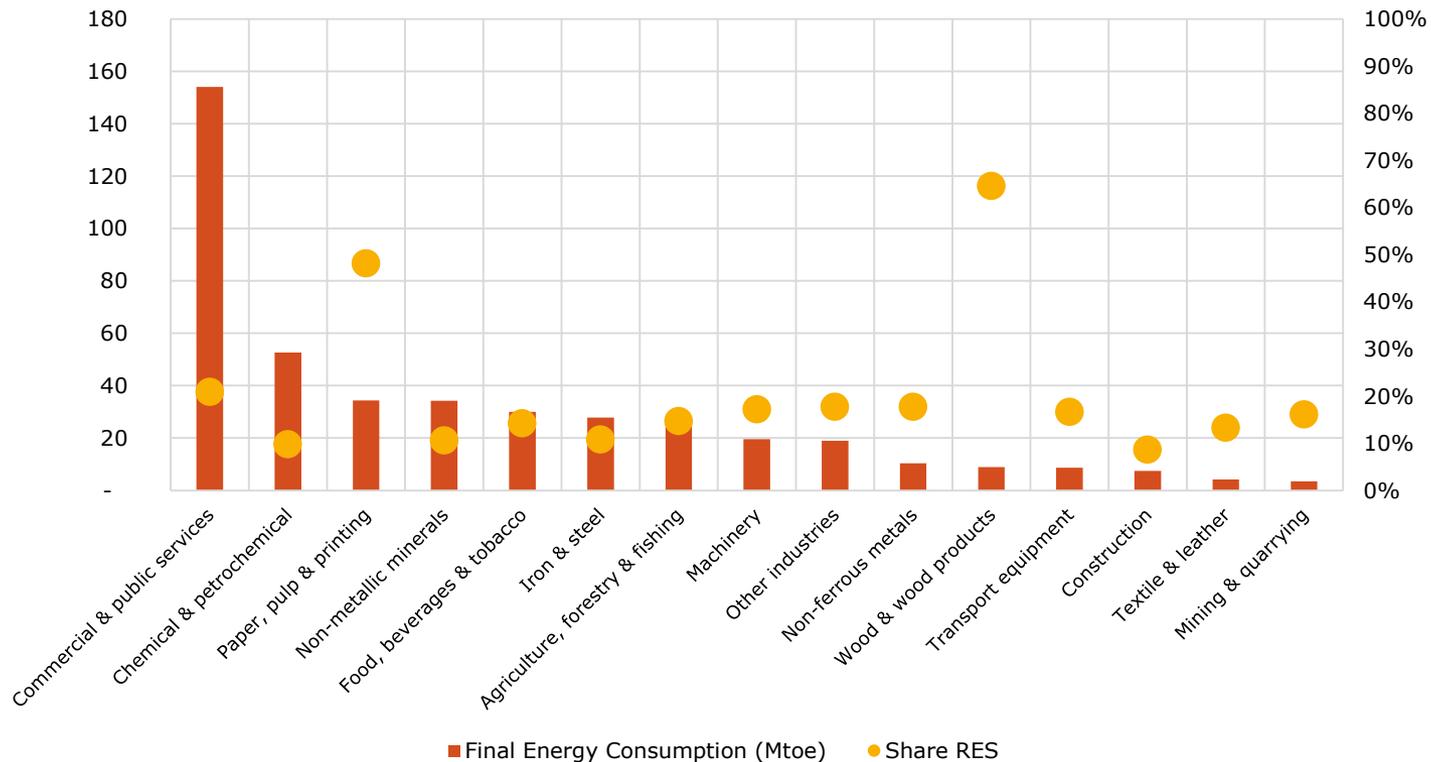
Introduction



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Energy consumption and share of renewables in the corporate sector (2017)

- 40% of final energy consumption, 70% final electricity consumption, share of renewables below 20%



Consultation activities (May 2018 - April 2019)

- **Online survey:** 68 companies operating in the EU (large vs small, energy-intensive vs non-energy intensive, sourcing RE vs not-sourcing RE)
- **Interviews:** 19 interviews with representatives of 14 different EU stakeholders' groups
- **Country factsheets:** 10 country-level analyses, based on 20 interviews (two per Member States) and desk research
- **Case studies:** 6 cases on corporate sourcing of renewables (Agris, Alcoa/Norsk Hydro, Altair Chimica, Google, Metro, WWRD)
- **Stakeholder workshops:** two events at CEPS in May 2018 and January 2019

Options for corporate sourcing of renewable electricity

- **Self-generation/self-consumption** of renewable electricity via e.g. solar photovoltaic or wind turbine (including behind the meter lease contracts).
- **Renewable power purchase agreements (RE PPAs)**, i.e. contracts under which a legal or natural person agrees to purchase renewable electricity directly from an energy generator.
- **Unbundled guarantees of origin (GOs)**, i.e. purchasing GOs (from e.g. a renewable energy generator or a third-party broker) certifying the renewable attributes of electricity without acquiring the electricity for which the GOs were issued.
- **Renewable energy offers from utilities or electricity suppliers**; such suppliers provide green grid electricity by either direct sourcing from independent RE generators or by bundling electricity with GOs (to prove that their electricity is green).

Main limitations

- Drivers and barriers mainly detected via consultation activities
 - **Actual and perceived** drivers and barriers
 - **Backward-looking** analysis
 - The EU corporate sector is not necessarily represented
 - Focus on **renewable electricity**

Expected socio-economic impacts

- Gross input-output model:
 - 10 Member States
 - EU Reference Scenario 2016
- Two scenarios:
 - Lower bound: Active corporate sourcing equal to 3,5% of additional demand by industry and service sectors
 - Upper bound: Active corporate sourcing equal to about 30% of total electricity demand by industry and service sectors in 2030 + additionality
- **Cumulative GVA:** €12 - €758 billion by 2030
- **Additional jobs:** 4,600 – 221,200 FTEs by 2030

Corporate sourcing of renewable electricity: drivers



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Main drivers: renewable electricity

- **Corporate social responsibility (CSR) strategy and differentiation**
 - Increased demand for products/services: but limited willingness to pay
 - More value to (institutional) shareholders
- **Participation in green supply chains**
 - Large companies affecting the behaviour of their suppliers (often SMEs)
 - Green public procurement
- **Cost leadership**
 - Lower electricity costs ('deal maker/breaker' for most companies)

Specific drivers: self-generation

- Corporate social responsibility
 - Visible link between the company's premises and the renewable power plant
 - **Additionality**
- Cost leadership
 - **Generation costs** lower than grid electricity price
 - **Savings on taxes** and other non-energy components of the electricity price
- Resilience
 - **Stability of electricity costs** (at least for part of the total electricity demand)

Specific drivers: RE PPA

- Corporate social responsibility
 - **Additionality** (new installations that are not subsidised)
 - **GOs** important for companies focusing on CSR
- Cost leadership
 - **Electricity prices lower than grid electricity prices**
 - Generators may accept relatively lower prices in exchange for long-term revenue streams
 - Electricity from large-scale (cost-effective) renewable projects (multiple buyers are allowed)
 - **No up-front investments costs**
 - **Limited investment risk**
- Resilience
 - **Stability of electricity prices** (but balancing required)
 - Meeting a large share of the off-taker's electricity demand

Specific drivers: Unbundled GOs and green energy offers

- Corporate social responsibility
 - **Premium green energy offers**
 - Trust in the supplier (to avoid 'greenwashing' and ensure the continuity of supply)
 - GOs contain plenty of information on the underlying renewable electricity
- Cost leadership
 - **Short-term commitment**
 - **No up-front investments costs and no investment risk**
 - Compatibility with large renewable projects with economies of scale
 - **Flexible and easy to source** (but brokers may be required for unbundled GOs)

Corporate sourcing of renewable electricity: main barriers



Main barriers: renewable electricity

- Policy uncertainty
 - **Changes in regulated components** of the electricity price
 - Changes in support schemes
- Regulatory barriers
 - Rules change too fast and are quite different across Member States
 - **Compensation for indirect EU ETS costs** in Germany
- **Perceived barriers** (mostly by companies that are currently not sourcing renewable electricity)
 - Electricity costs/prices higher than grid electricity prices
 - Fluctuating nature of renewable electricity (e.g. wind and solar)
- **Cultural barriers**
 - Company preferring investments with higher returns
 - Limited awareness about available options and impacts on competitiveness

Specific barriers: self-generation

- **Regulatory barriers**
 - **Member State-specific** (land use and zoning rules, environmental permits, building codes, authorisation process)
- Risks stemming from **regulatory uncertainty**
 - Unclear legal provisions (national rules)
 - Changes in support schemes
 - Changes in taxation on self-consumption
- **Inadequate return on investment** (financial barriers)
 - Long pay-back period and high grid interconnection costs
- **Limited generation capacity** due to limited space available on-site
 - Private wires not allowed, tax on off-site generation
 - Need to rely on grid electricity (higher price due to lower consumption)
- **Variability/fluctuating nature**
 - Need to rely on grid electricity (higher price due to lower consumption)
- **Limited awareness by SMEs**

Specific barriers: RE PPA

- **Regulatory barriers**
 - Barriers to direct contracting between generators and buyers
 - Barriers to sign contracts with more than one generator/supplier
 - Barriers to transfer GOs to off-takers
- **Long contract duration and uncertainty of future electricity price development**
- Creditworthiness standards and/or **bank guarantees** (financial barriers)
- **Generous public support schemes**
- Electricity prices higher than grid electricity prices
 - Barrier mostly perceived by companies that have not signed a RE PPA
 - **Focus on wholesale electricity prices rather than generation costs**
- Variability of renewable electricity and **balancing costs**
 - Lack of long-term hedging products
- **Limited awareness and interest** (especially for SMEs)
 - High transaction costs and small electricity demand

Specific barriers: Unbundled GOs and green energy offers

- Electricity costs higher than 'standard' grid electricity prices
 - GO price on top of electricity price
- No price hedging
 - More variability due to GO price
- Lack of trust (**greenwashing and limited additionality**)
 - GOs from subsidised projects or legacy investments in hydropower
 - No premium green energy offers
- Unbundled GOs
 - **Limits for consumers to buy and cancel GOs**
 - Unbundled GOs are **not so easy to source**
 - OTC, illiquid market
 - Inadequate framework to manage GOs
 - Limited trade for non European Energy Certificate System (EECS) members

Policy recommendations



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Fostering corporate investments in RE technologies

- ***Stable investment support*** for self-generation/self-consumption in the form of grants, subsidised loans or tax deductions/credits
 - Lower payback period, higher returns
- ***One-stop-shop to authorise renewable installations***
 - Lower transaction costs, increase time certainty
- ***Energy taxation not discouraging self-consumption***
- ***Allowing for private wires for near-site renewable installations***
- ***Supporting research and innovation projects in RE technologies*** (less mature technologies)
 - Lower generation costs and investment costs

Fostering corporate demand for renewables

- **Tax credits or exemptions** from (some) energy taxes for purchased renewable electricity
 - Lower green energy costs
- Mitigating price risk and uncertainty about future electricity prices
 - **Long term guidance for**
 - Regulated components of the electricity price
 - Compensation for indirect EU ETS costs and RES levies
- **Reconsidering the exclusion from ETS compensation schemes** of electricity-intensive companies wishing to source renewable electricity
- *Introducing competitive, market-based auction mechanisms for support schemes*
- Providing public supported guarantees for RE PPAs
 - **Lower costs for long-term bank guarantees** required to sign PPA

Fostering corporate demand for renewables

- Encouraging cross-border PPAs
 - Coordinating the development of cross-border transmission infrastructure and opening up existing networks to *increased transmission capacity allocation*
- Ensuring that *generators and off-takers can contract directly with each other and that off-takers can have multiple supply contracts*
- Facilitating the transfer of GOs to off-takers
- *Increasing trust in GOs and green energy offers*
- Removing 'perceived' barriers
 - Raising awareness of the available options and positive impacts on competitiveness
 - Removing ambiguities in the interpretation of rules affecting corporate sourcing of renewables

Fostering demand for green goods/services

- **Raising awareness among consumers on the societal benefits of green energy**
 - Higher willingness to pay a premium price for green products
 - Creation of new green supply chains
- **Incentivising green consumption** via e.g. support schemes, tax discounts/deductions, carbon tax, labels, etc.
- ***Fostering green public procurement***



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Thank you for your attention.

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