Companies going for 100% renewables in Europe

Sonia Dunlop, Senior Policy Adviser, SolarPower Europe/RE-Source Platform
The RE-Source Platform
The European alliance for corporate renewable energy sourcing
SolarPower Europe: representing the PV value chain

<table>
<thead>
<tr>
<th>Category</th>
<th>Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials</td>
<td>Wacker, DuPont, DSM, Luvata</td>
</tr>
<tr>
<td>Modules, wafers &amp; cells</td>
<td>TrinaSolar, First Solar, Jinko Solar, Lóng Solar, JA Solar, Total</td>
</tr>
<tr>
<td>Building integrated PV</td>
<td>Merck, AIT, ArcelorMittal, Schweizer</td>
</tr>
<tr>
<td>Inverters</td>
<td>SMA, Huawei, Fronius, Sungrow</td>
</tr>
<tr>
<td>BOS</td>
<td>Weidmüller, softigus, Sadef, IDEMATec</td>
</tr>
<tr>
<td>Developers &amp; EPCs</td>
<td>BayWa, renewable energy, solacentury, Lightsource, eni</td>
</tr>
<tr>
<td>Storage</td>
<td>Tesla, Eaton, BYD, SolUenergy</td>
</tr>
<tr>
<td>Utilities</td>
<td>Enel, Engie, Fortum, EDF</td>
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<tr>
<td>Operations &amp; maintenance</td>
<td>Aletris, DNVGL, Enercon, Trionic</td>
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<tr>
<td>Financiers</td>
<td>Axis, Capital Stage, Kgal</td>
</tr>
<tr>
<td>Digitalisation</td>
<td>Siemens, ABB, Synapsun, Vaillant</td>
</tr>
<tr>
<td>National associations</td>
<td>BSW Solar, Solar Trade, UNEF, Swissolar</td>
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</tbody>
</table>
## Wind Europe members

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind turbine manufacturers</td>
<td>GE Renewable Energy, SIEMENS Gamesa</td>
</tr>
<tr>
<td>Wind farm developers</td>
<td>ACCIONA, RES, SHELL, VATTENFALL</td>
</tr>
<tr>
<td>Power utilities</td>
<td>E.ON, EDF Energies Nouvelles, ENEL</td>
</tr>
<tr>
<td>Component manufacturers</td>
<td>ABB, LM Wind Power, BASF, ZF</td>
</tr>
<tr>
<td>Installation / logistics</td>
<td>DHL, Port of Amsterdam, Van Oord</td>
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<tr>
<td>Financial &amp; legal services</td>
<td>Allianz, Dentons, Rabobank</td>
</tr>
<tr>
<td>Research institutes</td>
<td>CATAPULT, Fraunhofer IWES, TU Delft</td>
</tr>
</tbody>
</table>

**400+ members**

and national wind associations
World Business Council on Sustainable Development

200 forward thinking businesses working together to accelerate the transition to a sustainable world.

World Business Council for Sustainable Development

Our mission is to accelerate the transition to a sustainable world by making more sustainable business more successful.

Our vision is to create a world where more than nine billion people are all living well and within the boundaries of our planet, by 2050.
RE-Source Platform objectives
1. **Influence** EU and national renewable energy and energy market legislation to advance corporate sourcing
2. **Raise awareness** and educate all stakeholders on the advantages of corporate sourcing renewable energy.
3. **Provide business opportunities:** connecting corporate renewable energy buyers and sellers
“Move from 100 buyers to 100,000”
Opportunity
Corporate PPAs by year
1.9GW of renewable corporate PPAs signed in Europe in 2018
Share of wind and solar
Wind energy accounts for 85% of corporate PPAs in Europe to date
Corporate PPAs by country
On-site solar corporate sourcing

C&I Forecast under low and high scenario in key European countries

Source: SolarPower Europe analysis.
Corporate PPAs by industry

Majority of capacity signed to date by heavy industry and ICT
Duration and capacity trends

- Capacity and duration of PPA contracts increasing
- Recently seen a 29 year corporate PPA signed, the longest so far
Europe-domiciled RE100 supply-demand fundamentals

Source: Bloomberg New Energy Finance, Bloomberg Terminal, The Climate Group. Note: Certificates includes utility contracts and unbundled guarantees of origin. Certificates assumed to step down 10% each year, while contracted solar, wind and onsite generation remain steady through 2030.
Global PPA market

Source: Bloomberg New Energy Finance  Note: APAC capacity is estimated. Pre-market reform Mexico PPAs excluded. Figures are subject to change and may be updated as more information is made available.
Outreach to buyer groups
The business models
The 14 models...
Self-owned on-site
Leasing
On-site PPA
Private wire
PPA

PRIVATE DIRECT WIRE
Self-owned off-site
Sleevd PPA
Virtual PPA
Multi-buyer PPA
Aggregation PPA
Proxy revenue swap
Cross-border PPA
Green electricity supply
Guarantees of Origin
...take your pick!
Decision tree

Unbundled/Bundled GOs → On-site/near-site/off-site → Self-owned/Third party owned

Physical/Virtual → Single country/cross border
Report on 14 business models to be published soon
EFET
European Federation of Energy Traders

PART I (Commercial Terms) of the
Individual Corporate Power Purchase Agreement

between:

having its registered office at ___________________________

and

having its registered office at ___________________________

on the date ___________________________, [Signature Date] where the commercial terms of this corporate power purchase agreement are set forth below, in this Part I (Commercial Terms), are the general provisions of which are set forth below in Part II (General Terms), and which are further elaborated in reference herein, and form part hereof.

SECTION A. COMMERCIAL PROVISIONS

1. SETTLEMENT

   a. [Physical settlement of credit memo ("Financial Statement") or]
   b. [Financial statement of delivery ("Financial Statement")]

2. ELECTRICITY

   3. In case of the Physical Settlement, the "Contract Quantity" of electricity shall be

      3.1. [1) All Monthly Output of the Facility for the Term, with the
           following Electricity Contract Price per [1] [1,000 kW], [1,000 MWh], [1,000 Tax], [1,000 others or]
           [1,000 others or]

           3.1.1. Net meter of the Meter Output of the Facility for the Term, with the following Electronic Consumption Price per [1] [1,000 kW], [1,000 MWh], [1,000 Tax], [1,000 others or]

           3.1.1.1. Net meter of the Meter Output of the Facility for the Term, with the following Electronic Consumption Price per [1] [1,000 kW], [1,000 MWh], [1,000 Tax], [1,000 others or]


1. [APPROVE/DRAFT] To ensure that the scope of the arrangements can be flexibly modified without affecting the agreement.

DRAFT

Date: © 2011 by European Federation of Energy Traders
Policy
RE-Source Declaration

Corporations need removal of barriers to renewable energy procurement in support of Europe’s climate and energy goals.

RE-Source is a European platform for corporate renewable energy sourcing and is an initiative of the European Climate Initiative (ECI), which is supported by the EMF and the European Commission (EC).

The goal of RE-Source is to support the transition to a sustainable energy future by accelerating the deployment of renewable energy technologies and services across Europe.

RE-Source’s mission is to enable and facilitate the procurement of renewable energy products and services by European corporations, helping to meet the EU’s 2050 climate and energy targets.

The RE-Source Declaration:

1. We commit to sourcing renewable energy for our operations.
2. We will increase our renewable energy procurement targets over time.
3. We will communicate our renewable energy sourcing efforts and progress publicly.
4. We will engage with stakeholders to promote and support the growth of the renewable energy sector.

By signing the RE-Source Declaration, we commit to:

1. Procuring renewable energy in order to reduce our carbon footprint.
2. Supporting the development of renewable energy technologies.
3. Increasing the use of energy-efficient products and services.

We believe that by working together, we can make a real difference in the fight against climate change and promote a sustainable future for all.
Declaration: key messages

We call on policy makers to:

- **Remove** barriers to corporate renewable sourcing across Europe.
- **Provide** clarity on long-term ownership of Guarantees of Origin.
- **Encourage** cross-border renewable energy transactions.
- **Enable** a wide variety of models and products.

We need to increase the number of active corporates from 100 to 100,000.
Guarantees of Origin

Final outcome:

• No central auctioning of GOs
• Exemption where it is presumed there is no overcompensation from combining GOs and national support mechanisms
• Flexibility for Member States on issuing GOs to green electricity that benefits from a national support mechanism
1. Direct lines and contracting with multiple suppliers – relevant to many different PPA models
2. Active customers – covers on-site corporate sourcing
3. Hedging products – could include synthetic PPAs
4. Interconnections – an enabler for cross-border PPAs
Country/model matrix

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<tr>
<th>Country</th>
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<th>D</th>
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<tr>
<td>Norway</td>
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Legend:
- Green: Positive
- Yellow: Neutral
- Red: Negative

Key players and market participants:
- Market leaders
- Competitors
- Suppliers
- Government}

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**Note:** The table above is a simplified example of a country/model matrix. Actual matrices can be much more complex and detailed, incorporating various factors and indicators specific to the industry and market in question.
Policy barriers

Private wires

Rules on one company having multiple electricity suppliers

Allocation of cross-border transmission capacity over the long-term
Advocacy
Case studies
15 year wind PPA:

Scottish wind farm - 100 GWh per year

One of four wind farms now powering BT operations

100% renewable in the UK since 2012
Five year solar PPA:

French utility selling power to Austrian industrial company for their Italian brick manufacturing plant
Dutch wind consortium:

Aggregation of corporate renewables buyers

Two long-term wind PPAs – 102 MW and 34 MW
On-site generation:

Generates more energy than it consumes in Portugal

12,000 solar modules on the rooftops of four of the stores

50 MW wind farm

Globally in 2017: 73% of energy consumed was renewable = 400 wind turbines and 750,000 solar panels
“Renewable targets allow us to improve efficiency, while we run our business in a sustainable way, maximizing returns to our shareholders that care about results, as much as how we achieve them. Furthermore, we expect savings of 6% on the energy bill in 2020 and up to 26% in 2030 thanks to our Renewable Energy Plan.”

– Laura Abasolo, Chief Finance and Control Officer, Telefónica
“With a life expectancy of over 25 years, we know that our solar power plants will not only help us generate clean, sustainable power, but will also do so in a way that will save Swiss Re millions of dollars in the coming decades.”

- Lasse Wallquist, Senior Environmental Management Specialist, Swiss Re
RE-Source event

The biggest corporate sourcing event in the world...

- Over 800 participants
- Over 220 B2B meetings
- Over 70 high level speakers
- Half a dozen side events
- Participants from 36 countries worldwide – a global marketplace
RE-Source
Connecting renewable energy buyers and sellers

Target audience (over 700 participants expected):
- Multinational corporations
- Renewable energy developers
- Senior decision-makers
- Advisors, investors and service providers

Objectives:
- Raise awareness
- Exchange information
- Facilitate connections & business opportunities

More information: resource-event.eu

1-3 October 2019
Okura Hotel, Amsterdam
Win – Win – Win
THANK YOU

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