### Renewable energy – policies, legislation and administrative and economic instruments applied in the EU

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Content of presentation

- Renewable energy facts and figures
- EU policies
- EU legislation
- Instruments to support renewable energy





# Facts and figures: Share of renewable energy in electricity generation in 2019 (%)

Source: IEA	World	OECD	EU	USA	China
Biofuels	2.0	2.6	5.4	1.3	1.5
Hydro	16.0	13.6	10.9	7.1	17.3
Geothermal	0.3	0.5	0.2	0.4	0
Solar PV	2.5	3.1	4.1	2.1	3.0
Wind	5.3	7.4	13.3	6.8	5.4
Tide	0	0	0	0	0
Renewable waste	0.1	0.3	0.7	0.2	0
Total	16.2	27.5	34.6	17.9	27.2

The EU is the world leader in renewable electricity.





# Facts and figures: Share of renewable energy in electricity generation in the EU (%)

Source: IEA	1990	1995	2000	2005	2010	2015	2019
Biofuels	0.4	0.6	0.9	1.8	3.1	4.9	5.4
Hydro	11.9	12.8	12.7	10.5	12.1	11.5	10.9
Geothermal	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Solar PV	0	0	0	0+	0.7	3.2	4.1
Wind	0+	0.1	0.7	2.1	4.4	9.3	13.3
Tide	0	0	0	0	0	0	0
Renewable waste	0.1	0.1	0.2	0.4	0.5	0.6	0.7
Total	12.4	13.5	14.7	15.0	21.0	29.7	34.6

Rapid growth in biofuels, solar PV and wind. Wind is dominant.





# Facts and figures: Share of renewable energy in heat generation in the EU (%)

Source: IEA	1990	1995	2000	2005	2010	2015	2019
Biofuels	1.4	3.8	6.4	8.3	12.3	18.0	21.9
Geothermal	0	0	0	0.2	0.2	0.3	0.5
Solar thermal	0	0	0	0	0	0	0.1
Renewable waste	1.4	1.8	2.1	2.3	3.1	4.8	5.1
Total	2.8	5.6	8.5	10.8	15.6	23.8	27.6

Rapid growth in biofuels and partially in renewable waste after 1990.

#### **Biofuels are dominant.**





### Facts and figures: Renewable electricity in the EU 2020



#### ec.europa.eu/eurostat



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### Facts and figures: Renewable electricity in the EU 2020



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### Facts and figures: 2020 renewable electricity target

At EU level, the share of gross final energy consumption from renewable sources reached 22% in 2020. This is 2% above the target level for 2020. This is a major achievement and an important milestone in the EU's path towards climate neutrality by 2050.

### 26 Member States met or exceeded their national targets for 2020.

The Member States that significantly exceeded their 2020 targets were Sweden, Croatia (both +11%) and Bulgaria (+7%). France, by contrast, fell short of its target (-3.9%).





#### Facts and figures: Map of onshore wind farms in Europe







### Facts and figures: Solar power potential in Europe



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#### EU Policies: Renewable energy in the EU since 1991





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### **EU Policies: The 2030 targets**

The 2030 targets

Building on the 20% target for 2020, the EU established a new binding renewable energy target for the EU for 2030 of at least 32%, with a clause for a possible upwards revision by 2023.

To meet the higher climate ambition, as presented in the European Green Deal in December 2019, further revisions of the target are needed.

The European Commission presented Europe's new 2030 climate targets on 14 July 2021. It seeks to increase the current target to at least 40% renewable energy sources in the EU's overall energy mix by 2030. The Commission proposal is now with the European Parliament and the Council.





**EU legislation – History** 

- Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market
- Directive 2003/30/EC on the promotion of the use of biofuels or other renewable fuels for transport
- Directive 2009/28/EC on the promotion of the use of energy from renewable sources
- Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources





EU legislation – Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources - 1

The directive includes:

- a binding EU overall target for 2030 of at least 32% of energy from renewable sources;
- rules for cost-effective and market-based financial support for electricity from renewable sources;
- protection of support schemes from modifications which put existing projects at risk;
- cooperation mechanisms between EU countries, and between EU countries and non-EU countries;





# EU legislation – Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources - 2

- simplification of administrative procedures for renewables projects (including one-stop-shops, time-limits, and digitalisation);
- an improved guarantee of origin system, extended to all renewables;
- rules allowing consumers to produce their own electricity, individually or as part of renewable energy communities, without undue restrictions;
- strengthened EU sustainability criteria for bioenergy, by extending their scope to cover all fuels produced from biomass regardless of their final energy use.





# EU legislation – Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources - 3

The directive includes in the heating and cooling sector:

- an annual increase of 1.3 percentage points in the share of renewable energy in the sector
- the right for consumers to disconnect from inefficient district heating and cooling systems and
- third-party access for suppliers of renewables and waste heat and cooling to district heating and cooling networks;

in the transport sector:

- a binding target of 14% with a specific sub-target for advanced biofuels of 3.5%
- caps on conventional biofuels and on high indirect land use change risk biofuels





### EU legislation – Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources – Revision - 1

The proposed revision aims to ensure that **renewable energy fully contributes to achieving a higher EU climate ambition for 2030, in line with the 2030 Climate Target Plan.** 

It seeks to convert into EU law some of the concepts outlined in **the energy system int**egration and **hydrogen strategies**, published in 2020. The 2 strategies outlined ways of creating an **integrated energy system**, **based on renewable energy and fit for climate neut**rality, and **turning hydrogen into a viable solution to help reach the objectives of the European Green Deal**.





### EU legislation – Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources – Revision - 2

In line with the EU Climate Law, the targets and measures set in the revised directive should be ambitious enough to reduce greenhouse gas emissions by at least 55% in 2030.

This includes raising the overall renewables target (proposed to be increased to 40%), but also strengthened measures for transport or heating and cooling.

The Commission is also aiming at a more energy efficient and circular energy system that facilitates renewables-based electrification, and promotes the use of renewable and lowcarbon fuels, including hydrogen, in sectors where electrification is not yet a feasible option, such as transport.





### **Renewable Energy Mandates**

Renewable Energy Mandates are legal requirements to produce a certain share of energy from renewable sources.

### **Renewable Energy Targets**

Renewable Energy Targets are policy commitments to generate a determined share of total energy using renewable sources.

### **Transfers and Subsidies**

Transfers and subsidies are direct or indirect monetary support to producers or other actors involved in renewable energy production.





### Instruments to support renewable energy - 2

### Feed-in-tariffs

Feed-in tariffs are policy tools designed to promote renewable energy generation by guaranteeing the purchase of the generated renewable energy with a long-term contract and at cost-based purchase prices. Under this scheme, electricity generated using solar panels or other types of RE based electricity can receive higher prices than from the fossil fuel-based electricity generator.

Feed-in-tariffs often have digressive element, when guaranteed prices gradually decline over time in order to stimulate cost-reducing innovations in renewable energies sector. Feed-in-tariffs are one of the most widely applied tools for promoting renewable energies.





### Instruments to support renewable energy - 3

#### Net Metering and Flexible Grid Access

Net Metering and Flexible Grid Access is a mechanism that enables smallscale renewable energy producers, for example, households with rooftop solar energy generation, to sell the amount of electricity beyond their own needs to the central grid.

#### **Fiscal Incentives**

Fiscal Incentives are the reduction of taxes by various mechanisms, such as tax credits, deductions and exemptions, in order to stimulate renewable energy.

#### Grants

Grants are non-repayable monetary allocations for specific projects. They are often used to promote renewable energy production, foster research and development and encourage deployment of renewable technologies. **Soft Loans** 

Soft loans are credits with below market interest charges to promote renewable energies.





### Thank you!

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