Europe renewable energy luxembourg city

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Becoming the world"s first climate-neutral continent by 2050 is the objective behind the European Green Deal (COM(2019) 640 final), the very ambitious package of measures that should enable European citizens and businesses to benefit from sustainable green transition.

The use of renewable energy has many potential benefits, including a reduction in greenhouse gas emissions, the diversification of energy supplies and a reduced dependency on fossil fuel markets (in particular, oil and gas). The growth of renewable energy sources may also stimulate employment in the EU, through the creation of jobs in new "green" technologies.

This article provides recent statistics on the share of energy from renewable sources overall and in three consumption sectors (electricity, heating and cooling, and transport) in the European Union (EU). Renewable energy sources include wind power, solar power (thermal, photovoltaic and concentrated), hydro power, tidal power, geothermal energy, ambient heat captured by heat pumps, biofuels and the renewable part of waste.

Some countries used statistical transfers to maintain higher levels than their 2020 targets (which is an obligation for the 2021-2030 period). Statistical transfers are agreements between Member States to transfer a specified amount of energy from renewable sources from one Member State to another Member States. See Table 1a for more details on the statistical transfers a reported for reference year 2022.

The rest of this article"s statistical findings deal with the developments from 2004 to 2022 in the share of energy from renewable sources in three areas: electricity, heating and cooling, and transport.

The accounting rules in Directive (EU) 2018/2001 prescribe that electricity generated by hydro power and wind power have to be normalised to account for annual weather variations (hydro is normalised over the last 15 years and wind over the last 5 years, separating on-shore and off-shore wind normalisation). This article presents the results applying these accounting rules.

The growth in electricity generated from renewable energy sources during the period 2012 to 2022 largely reflects an expansion in two renewable energy sources across the EU, namely wind power and solar power. In 2022, renewable energy sources made up 41.2 % of gross electricity consumption in the EU, almost 4 percentage points higher than the previous year (37.5 % in 2021).

Wind and hydro power accounted for more than two-thirds of the total electricity generated from renewable sources (37.5 and 29.9 %, respectively). The remaining one-third of electricity generated was from solar power (18.2 %), solid biofuels (6.9 %) and other renewable sources (7.5 %). Solar power is the fastest-growing source: in 2008, it accounted for 1 %. This means that the growth in

electricity from solar power has been dramatic, rising from just 7.4 TWh in 2008 to 210.3 TWh in 2022.

In 2022, renewable energy accounted for 24.8 % of total energy use for heating and cooling in the EU, increasing from 11.7 % in 2004. Developments in the industrial sector, services and households contributed to this growth. Ambient energy captured by heat pumps for heating and renewable cooling are also taken into account. The share of energy from renewable sources in heating and cooling is presented in Figure 3.

Among the EU Member States the share of energy from renewable sources in heating and cooling was more than half in Sweden (69.4 %), Estonia (65.4 %), Latvia (61.0 %), Finland (58.5 %), Lithuania (51.5 %) and Denmark (50.1 %). At the other side of the scale, the EU Member States with a share of energy from renewable sources in heating and cooling of less than 10 % were Ireland (6.3 %) and the Netherlands (8.6 %), see Table 3.

The average share of energy from renewable sources in transport increased from 1.6 % in 2004 to 9.6 % in 2022. Among the EU Member States, the share of renewable energy in transport fuel consumption ranged from highs of 29.2 % in Sweden and 18.8 % in Finland down to less than 5 % in Croatia (2.4 %), Latvia (3.1 %) and Greece (4.1 %). The EFTA country Norway also reported a high share of renewable energy in transport fuel consumption (23.7 %). The share of energy from renewable sources in transport is presented in Figure 4.