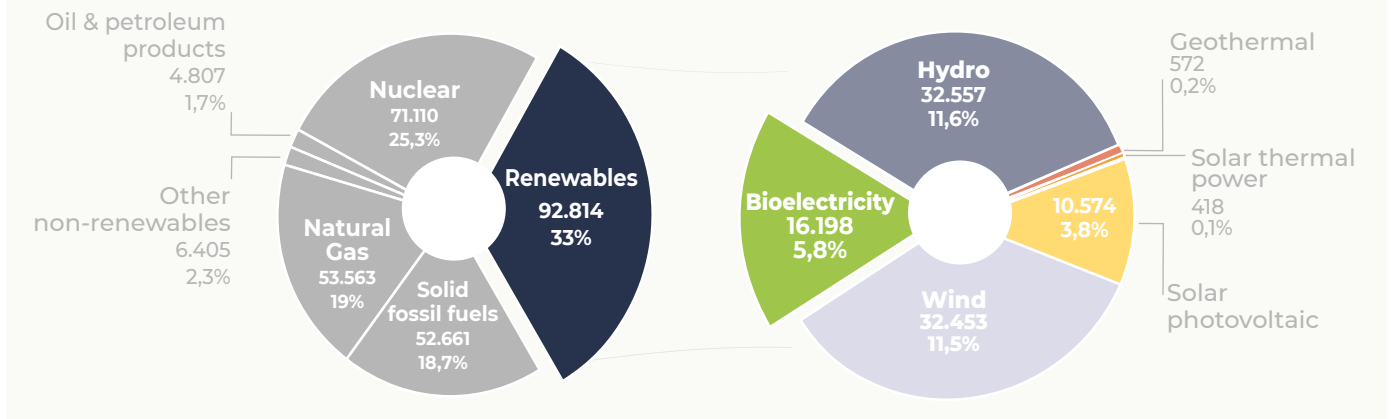


The power of Bioelectricity

Reaching the ambitious target of net-zero emissions by 2050 requires deep decarbonisation of the EU's economy. Non-renewable sources still provide **67%** of electricity generations in the EU - their replacement with renewables is a matter of urgency. Incremental increase of share of RES eventually leading to **100% renewable energy mix** will be largely covered by variable sources like Wind and PV. Bioenergy is an **indispensable facilitator** of such scenario, thanks to its stability, flexibility, cost effectiveness and efficiency.

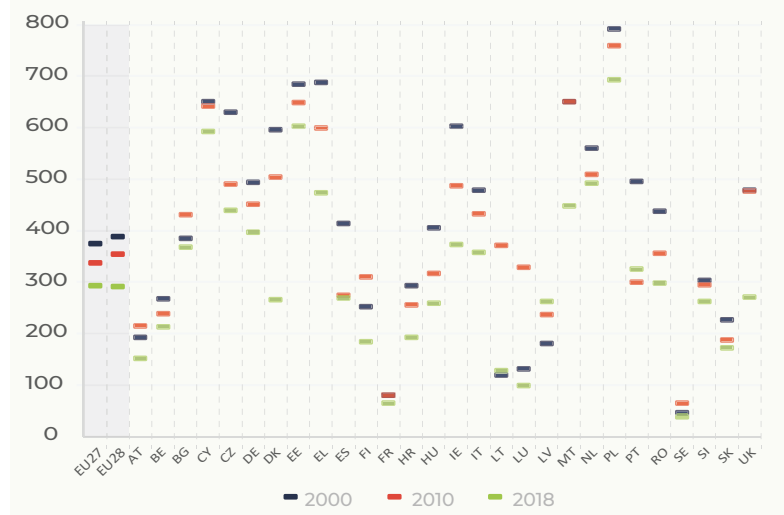
Gross electricity generation by product type in the EU28 in 2018 (ktoe, %)



High carbon footprint of the electricity in the EU

Despite recent years' decarbonisation efforts, the carbon footprint of the electricity produced in the EU remains high. In order to take advantage of clean electricity to decarbonise the heating and transport sectors, **the first necessary step is the decarbonisation of the electricity production itself.** Bioelectricity enables this process. Moreover, thanks to the use of innovative technologies such as Bioenergy with Carbon Capture and Storage (BECCS) and biochar, bioenergy is the only source of energy that can deliver **negative emissions.**

Electricity production footprint by Member State for 2000 2010 and 2018 in gCO₂ eq/kWh of electricity



Stable source of electricity

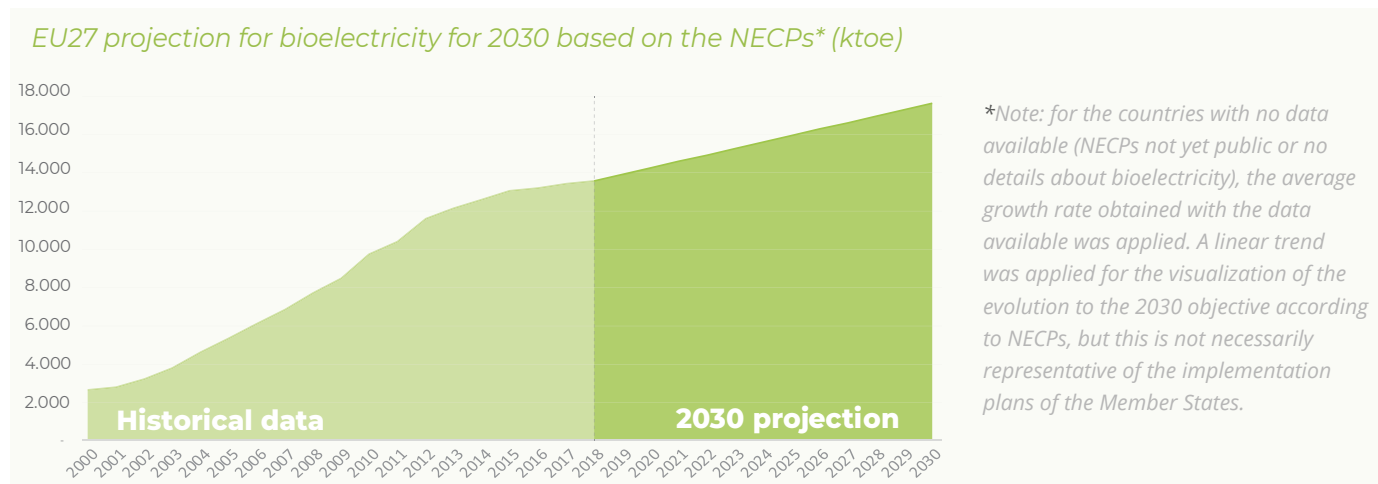
Bioelectricity's load factor is nearly twice higher than the average for renewables. Indeed, bioelectricity is dispatchable and allows to adjust production to stabilise the grid. Our power system, increasingly based on variable renewable sources, will need a dispatchable and flexible supply of power. **Bioelectricity is a readily available solution.** Biomass is easily storable and can be used when the wind is not blowing, and the sun is not shining.

Examples to follow

Denmark and Finland vastly increased their share of renewables in gross final consumption of electricity reaching respectively 62% and 37% thereby considerably decreasing carbon footprint of electricity. Both these countries rely on bioelectricity – in 2018 it provided respectively 19,4% and 18,4% of total gross electricity production. Such examples prove that Bioelectricity is an important component of advanced energy mixes, compatible with ambitious climate objectives.

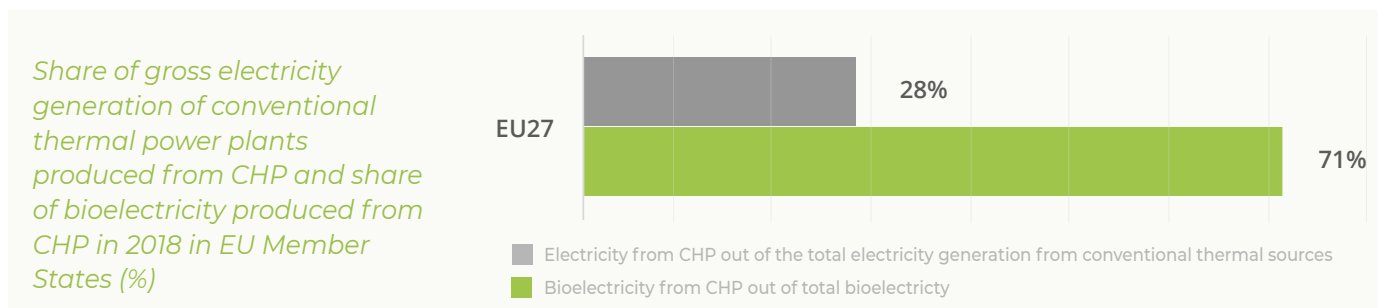
Bioelectricity delivers on EU's aspirations

The analysis of the available National Climate and Energy Plans provides an outlook on the development of the sector. According to Bioenergy Europe projections,* bioelectricity **will grow by 30%** in the coming decade reaching 17.4 Mtoe in 2030 in the EU27. Its development will facilitate driving down GHG emissions and fulfilling EU's 2030 targets.



Bioelectricity, an efficient asset

Modern, highly efficient combined heat and power (CHP) plants generate electricity and useful heat at the same time. Most of bioelectricity - 71% is generated in such plants guaranteeing that recovered heat is used for heating systems of houses and in the industry. For comparison, only 28% of the electricity from conventional thermal sources was generated in CHP.



RECOMMENDATIONS

1. Recognise the role of flexible renewables to stabilise the power system and secure electricity supply, allowing for a full transition to renewables in the power sector (including capacity markets);
2. Create a level playing field with variable renewables by integrating balancing and transmission costs as well as the value of dispatchability and security of supply in the costs of energy, or by rewarding these services;
3. Support research and development in plant and fuel flexibility while investing in technologies and fuels demonstration projects;
4. Bioelectricity value chain is predominantly local. Its development has a positive spill-over effects on regional economies – it provides additional streams of revenue and creates local jobs. In this regard, this technology supports the energy transition particularly in coal dependent regions and should benefit from the different EU funding tools like Just Transition Fund.