

New participation high for the JWEE reporting

The UNECE/FAO Joint Wood Energy Enquiry (JWEE) 2015 was sent out to all UNECE member states. Overall 33 countries replied to the enquiry representing 57% of the countries in the UNECE region. 31 countries¹ provided good quality data. This is the highest participation of member states in the JWEE reporting, which can partly be explained the increased availability of national data and by additional efforts of the secretariat to motivate member states (e.g., through capacity building workshops) to report national wood energy data.

Wood energy supply

Final results reveal that wood energy accounts for 3.8% of the total primary energy supply (TPES) and 37.7% of the renewable energy supply (RES) in the UNECE region, making it an important source of renewable energy. Woody biomass covers 21.6 to 24.5% of the primary energy demands of Republic of Moldova and Finland and 19.2 to 20.2% of the primary energy demands of Estonia and Sweden. Woody biomass accounts for over half of the renewable energy supply in Czech Republic, Estonia, Finland, Lithuania, Luxembourg, Republic of Moldova, Montenegro, Poland, Portugal, Serbia, Slovakia and Slovenia. Around 45.4% of the total mobilised woody biomass supply is used for energy purposes.

These are the main conclusions of the UNECE/FAO Joint Wood Energy Enquiry (JWEE), a biennial questionnaire that aims to shed light on the real role of wood energy within the region by promoting cross-sectoral communication and cooperation between the energy and forestry sectors in the member States. Now in its sixth round since 2005, the JWEE has become a reference source of information on wood energy, drawing responses from an increasing number of countries.

Sources of wood energy

Co-products and residues² from the forest-based industries contribute 43.5% of the wood fibres for energy generation. Processed wood fuels with improved energy content such as wood pellets, briquettes and charcoal are also included under this category. 38.2% of the wood fibres for energy generation derive directly from woody biomass from forests and wooded areas outside forests. However, the proportion varies among countries with Armenia, Azerbaijan, Bosnia Herzegovina, Croatia, Czech Republic, Georgia, Italy, Republic of Moldova, Montenegro, Poland and Serbia relying heavily (60% or more) on direct supplies of wood fibres whereas countries such as Austria, Canada, Cyprus, Finland, Iceland, Latvia, Luxembourg, Portugal, Sweden and the United Kingdom rely mainly (60% or more) on wood supply from indirect sources. Finland (43%), Sweden (42%), Canada (39%), the United States (33%) and Portugal (31%) have large shares of energy generated from black liquor reflecting the relative importance of the pulp and paper industries in the forest sector for the generation of wood energy. Overall, recovered waste wood (mainly waste from construction, but also packaging and old furniture) constitutes a minor category contributing 5.1% of wood energy. It is mainly consumed in power applications and waste to energy plants. In general, however, data on recovered wood is difficult to obtain and often not discernible from generic waste statistics. It is reported as a significant source of wood energy in the Netherlands, Germany and Switzerland.

Uses of wood energy

Wood energy is consumed in roughly equal measure by industry (39.2%) and other final consumers (41.2%). The residential sector accounted for 90.2% of wood energy consumed by other final consumers. Wood energy consumption in the power and heat sector accounted for 19.5%. The highest shares of wood energy use in the power and heat sector were reported from Estonia, Lithuania, Netherlands, Slovakia, Sweden, Switzerland and the United Kingdom. The forest products industry typically consumes energy generated from the solid and liquid co-products of its manufacturing processes. Countries with important forest industries, such as Finland, Sweden, Canada and the United States therefore

¹ Armenia, Austria, Azerbaijan, Bosnia and Herzegovina, Canada, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Georgia, Germany, Iceland, Italy, Latvia, Lithuania, Luxembourg, Montenegro, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Serbia, Slovak Republic, Slovenia, Sweden, Switzerland, the United Kingdom and the United States. Three countries (Andorra, Monaco, San Marino) were not requested to supply information.

² These co-products can be solid (sawdust, chips, slabs, etc.) or liquid (e.g. black liquor or tall oil).

have a higher share of industrial consumption. Residential use, mainly dependent on primary solid biomass sources, is most important in central Asian countries, the Republic of Moldova and Bosnia and Herzegovina.

Main Trends³

Based on a subset of 12 countries that have responded to all rounds of the enquiry (Austria, Cyprus, Finland, France, Germany, Luxembourg, Serbia, Slovenia, Sweden, Switzerland and the United Kingdom as well as Ireland that provided data through 2013) it was possible to assess the development of the use of wood energy across all reporting years. The results from these countries confirm the continuing predominant role of wood in renewables. Total wood energy consumption decreased from 550 million m³ in 2013 to 532 million m³ in 2015. Nevertheless, the role of wood in TPES remained constant at 5.9% during this period. The share of wood in renewables (RES) was 43.5% in 2015 - a decline of 6.6 percentage points recorded between 2007 and 2015. This perhaps reflects the faster rates of growth of other sources of renewable energy such as wind and solar in the overall growth of renewables.

A larger share of the wood supply is being mobilised for energy purposes as confirmed by the substantial increase in the reported energy use of wood (38.9% in 2007 to 47.7% in 2015). Data reveals the trend that member states increasingly source wood energy from indirect sources (e.g., wood residues and processed wood based fuels) and less wood directly from the forests. Also wood energy use in the industry and residential sector decreased while the power and heat sector consumed more wood for energy.

Consumption of wood pellets dramatically increased in 2015. In 2007 16.2 kg wood pellets were consumed per capita while this figure increased to 48.9 kg in 2015. The most important drivers for the increase of wood pellets consumption were the United Kingdom and Serbia.

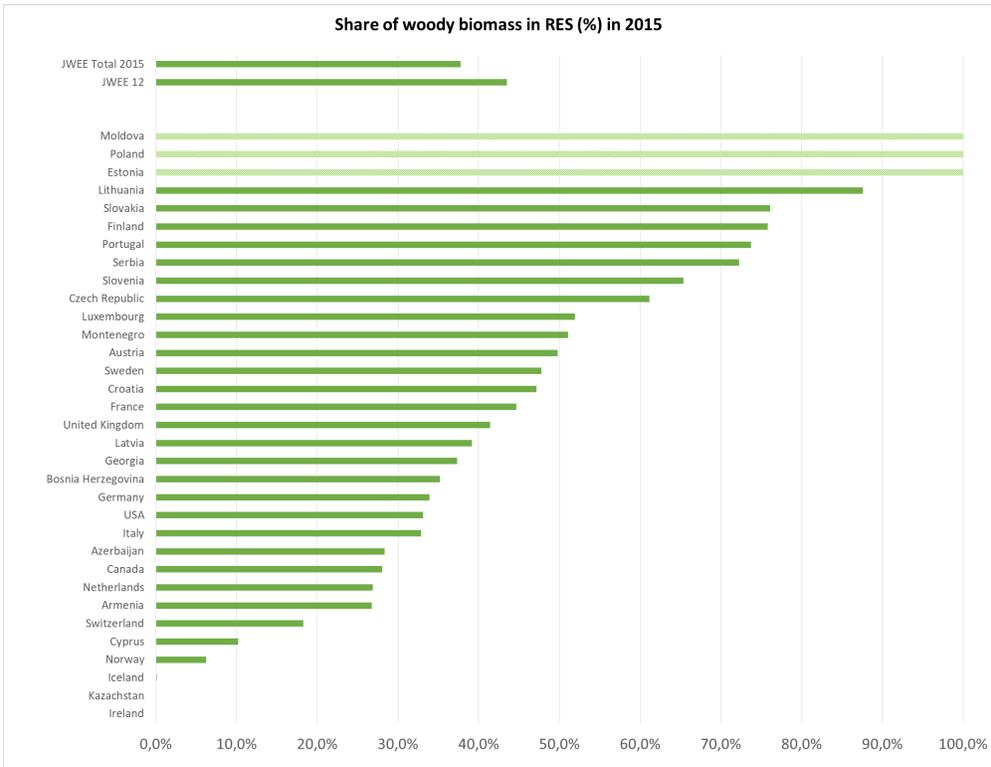
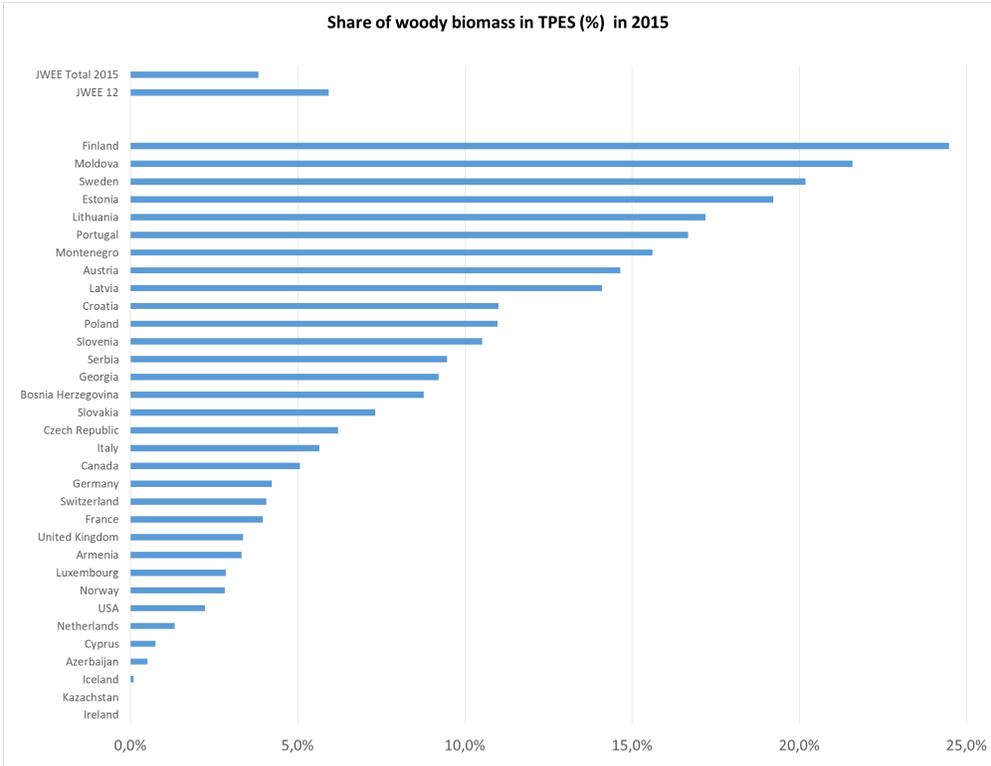
One of the biggest changes in wood use, in relative terms, is the United Kingdom where wood now accounts for 3.4% of TPES (up from 0.1% in 2005). After a sharp increase of the share of wood energy in the RES between 2005 and 2011 (from 7.9% to 27.4%), a slight decrease (1%) was recorded between 2011 and 2013. However, in 2015 the share almost doubled to 41.4%.

Further Info:

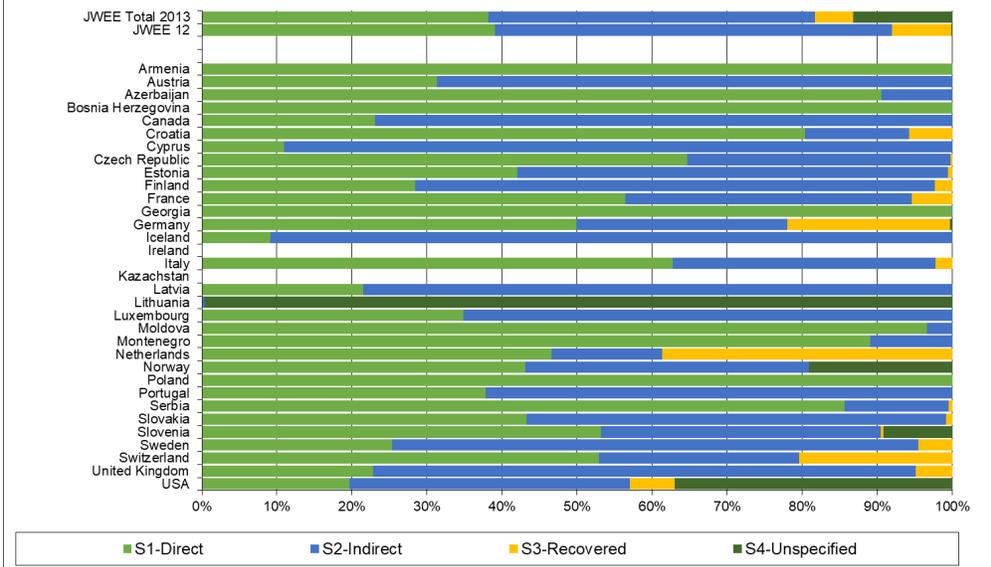
Complete country profiles can be downloaded at <http://www.unece.org/forests/jwee> For any additional comments or questions kindly contact:

Sebastian Glasenapp
Consultant
UNECE/FAO Forestry and Timber Section
Palais des Nations
CH-1211 Geneva 10, Switzerland
E-mail: woodenergy.timber@unece.org
Website: <http://www.unece.org/forests>

³ Trends are only indicative as technical factors such as conversion factors and structural changes in national and international methodologies have an influence on results.



Relative share of wood energy sources, 2015



Relative share of wood energy users, 2015

