

## Biofuels in Romania

### Overview of Biofuels in Romania

Romania is the largest energy market in South-East Europe, with a gross inland consumption of approx. 32Mtoe and a final energy consumption of approx. 22 Mtoe in 2013, both declining in the past decade. The current trend is below the 2020 targets that set final energy consumption at approx. 30,3Mtoe.

Owing to domestic coal and oil industry, the energy sector plays an important role in the country's economy (value added of approx. 5%, above EU average), and from the point of view of employment. Romania is rich in natural gas, oil and coal, has a relevant share of hydro as well as nuclear capacities. Nonetheless, import dependancy is around 19%, rising to 47% for petroleum and products. In 2013, the overall renewables contribution was 23.9%, close to the 24% national target for 2020. This is achieved owing to the combination of reduced consumption, declining energy intensity and relevant installed capacities in hydro. Furthermore, the country has extremely promising, yet only partially (and inefficiently) utilized, biomass potentials. According to the recent Country Factsheet accompanying the communication on the "State of the Energy Union" (SWD (2015) 236 final), direct and indirect employment in RE is about 0,22% (below EU average).

### Biofuels policy, regulations, market development

Romania is bound to fully transpose EU Directives, which has occurred through several national laws, yet with occasional delays. Regarding biofuels, a certain degree of uncertainty derives from the reiterated adjustment of blending targets, which have been recently lowered to more realistic goals (currently 5%, accountable only if complying with specific sustainability criteria).

Main strategic and regulatory documents are: the National Strategy for Sustainable Development (2008); the National Renewable Action Plan (2010); the Law on establishing the promotion system for energy production from renewable energy (Law no. 220/2008, updated by the OUG 79/2013); The National Energy Efficiency Action Plan (2014-2020). The development of Biofuels is regulated essentially by HG 935/2011 on the promotion of utilization of biofuels and bioliquids, including blending shares, sustainability criteria and certification schemes; the former has been integrated and partially amended through the subsequent adoption of several by-laws, such as HG 918/2012, HG 928/2012, HG 1308/2012, HG1121/2013.



### Country information

Romania	
Population	19,870,647
GDP (per capita)	9526.59 USD
Final Energy Consumption (Mtoe)	21,7
Final Energy Consumption in Transport (Mtoe)	5,4
Final Energy Consumption in Transport Share	25,3%
Biofuels share in Transport Fuels	3,1%
Fuel-Mix	Diesel, Gasoline, Biodiesel, LPG

Moreover, several national programmes and support schemes have been deployed to support the uptake of RES, including biomass and biofuels, as well as funding schemes earmarked in rural development programmes to stimulate farmers (alike in other areas of the region, this leads to increased interest for biogas installations and more efficient self-consumption).

The biomass market, yet still relatively unstructured, is currently driven mostly by wood and wood residues. Alike other countries of the region, woody biomass is largely used for heating purposes at household level in most rural areas (with poor efficiency, uncontrolled emissions and concomitant issues related to illegal logging); according to some estimations (FRD, May 2015) there are approx. 12M individual stoves and ovens that absorb up to 95% of current use and 1/3 of the available potential. As well, the abundant forest stock (27,3% of the territory is covered with forests), along with the long-standing tradition in forestry and wood industry, created the conditions for the growth of the wood pellets sector, with estimated capacities of 300.000 t/y (75% of which is exported elsewhere in the EU).

According to recent estimations (Scarlat N., Blujdea V., Dallemand J.F. (2011): Assessment of the availability of agricultural and forest residues for bioenergy production in Romania, Biomass & Bioenergy, 35: 1995-2005), Romanian agricultural and forestry sector could make available residues for energy use up to approx. 5,4 Mtoe (228PJ), yet with very relevant spatial and seasonal variability which might entail temporary shortages (between 3.2 and 7.6 Mtoe). Almost 2/3 of this potential comes from agricultural residues, which are currently largely unutilized.

#### Advanced biofuels demonstration and R&D projects

It shall be noted that, perhaps owing to the autocratic past, domestic research in renewables dates back to the mid Seventies in Romania, thus testifying of a particularly friendly environment. Nonetheless, research in the advanced biofuels domain is limited by objective socio-economic hurdles.

Alike other countries of the region, limited access to finance is perceived as major obstacle, together with market uncertainty. In recent years, Romania increased its production of liquid biofuels, mostly on the account of conventional biodiesel (approx. 430.000 ha were cultivated with rapeseed in 2007). Installed biofuels capacities are approx. 295 ktoe (206 biodiesel and 89 bioethanol); annual consumption is approx. 167ktoe (125 biodiesel and 42 bioethanol) while production is limited to approx. 105 ktoe (97 biodiesel and 8 bioethanol), with additional approx. 62 ktoe that are imported. Production and consumption have been oscillating from year to year, with a recent negative trend.

#### Biofuels ministries, organisations and agencies in Romania

Centre for Promotion of Clean and Efficient Energy  
Ministry of Economy  
Romanian Association of Biomass and Biogas  
Romanian Energy Regulatory Authority  
Institute for Studies and Power Engineering  
Administration of the Environmental Fund  
Agency for Payments and Intervention in Agriculture  
Centre for Promotion of Clean and Efficient Energy

#### Key biofuels industry and research stakeholders

University Politehnica of Bucharest  
Romanian Sustainable Energy Cluster  
Romania Energy Center-ROEC  
University of Agricultural Sciences and Veterinary Medicine "King Mihai the 1st" of Banat  
University Polytechnics of Timisoara