**General country information**

- Population: 3,679,000
- Surface area: 69,700 km²
- Forest area: 28,224 km²
- Capital city: Tbilisi
- GDP: $13,97 billion
- GDP Per Capita: $3,796
- WB Ease of Doing Business: 16

**Energy situation:**

- **Renewable energy**: 27%
- **Natural gas**: 42%
- **Coal**: 7%
- **Oil and products**: 24%

In 2014, renewable energy accounted for 27% of the total energy supply, of which 11% was biofuels and waste.

Imported natural gas and oil accounted for 73% of total primary energy supply.

More than 30% of Georgia’s total energy consumption is from the residential sector.

**KEY FACTS**

- **70% of the Georgian rural households** use firewood as the main source of heating.
- The government of Georgia provides free firewood resources for the population as a social wood program, however, it comprises only **25% of overall consumption by domestic households**, where the rest is obtained mostly illegally.
- Unsustainable annual consumption of **2.4 million cubic meters of timber resources** by domestic households in Georgia costs the state **GEL 446 million annually**.
Biomass energy potential:

It’s estimated that more than one million and a half tons of agricultural residues\(^1\) and more than one million m\(^3\) of forest residues\(^2\) are produced every year in Georgia, with a potential to generate together 36.5 Picojoules (PJ).

More than 50% of the total biomass energy potential is from corn straw, with a production of over a million tons/year.

Fruit orchard, wheat, vine pruning and hazelnut together account for 24% of the total biomass energy potential.

Kakheti, Samegrelo Zemo Svaneti and Imereti are the most attractive regions for biomass residues production in Georgia.

Of the total residential energy consumption could be supplied by biomass energy sources OR

More than 300,000 households with a consumption of 100 Gigajoule of natural gas for heating/year

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1. It was not considered whether the residue is available for energy purposes.
2. Including illegal cut
3. EMTT = Early & Mid-term Tending and Thinning
The biomass energy opportunity in Georgia

European Union and Georgia

- In the middle of 2016, the Association Agreement (AA) between the European Union and Georgia fully entered into force, and Georgia has made commitments in reforming its energy and environment sectors.
- Renewable heating and cooling continued to be the dominant renewable energy market sector in Europe, representing over half of all gross final consumption of renewables in 18 Member States.

Solid biomass represented the largest renewable energy contribution of the EU countries in 2013 (75.5 Mtoe, or more than 85% of all renewables).

### Ranking of Ease of Doing Business in Georgia

<table>
<thead>
<tr>
<th>Service</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of doing business 2016 (1-190)</td>
<td>16</td>
</tr>
<tr>
<td>Starting a Business</td>
<td>10</td>
</tr>
<tr>
<td>Getting Credit</td>
<td>7</td>
</tr>
<tr>
<td>Protecting Minority Investors</td>
<td>22</td>
</tr>
<tr>
<td>Paying Taxes</td>
<td>35</td>
</tr>
</tbody>
</table>

### Potential funding sources

<table>
<thead>
<tr>
<th>Organization</th>
<th>Possible funding opportunities</th>
</tr>
</thead>
</table>
| Commercial Banks, Microfinance Organizations and Leasing Companies | - Currently, Georgia has 19 operating banks, with a great potential to start funding biomass projects. Some types of funding include: mortgages, different types of loans (secured by real state/ business assets, without collateral etc). Seasonal loans are one of the most appropriate decision for biomass producers and it’s also profitable for the bank.  
- Mostly microfinance companies work with consumer loans and to a small extent financing business companies.  
- Leasing companies are interesting option for those who are going to purchase biomass equipment and machinery, and they may finance the means of biomass production and transport, or heating systems. |
| International Agencies and Donor Organizations | Donors (international and local) do not have active funding available for specific biomass production, but biomass heating can be a part of a bigger project anticipating installation of heating systems.                                                                                     |
| State Funding                             | - “Produce in Georgia” Program: implemented by the Ministry of Economy and Sustainable Development of Georgia /Ministry of Agriculture and is focused on supporting new entrepreneurs in Georgia. The program has already financed some biomass business production.  
- Municipal Development Fund (MDF) is ready to finance projects concerned with the renewable energy, including the production of biomass fuel. Funding is provided through commercial banks.  
- Access to Cheap Financial Resources Program: various projects in different fields get financial resources needed. The loan can be used as the core, as well as for financing working capital. Existing and new businesses can use this financing opportunity. |
### Institutions

<table>
<thead>
<tr>
<th>Institution</th>
<th>Responsibility</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Environment and Natural Resources of Georgia</td>
<td>Main organization on environmental planning, implementation of state policy on environmental protection and biodiversity conservation</td>
<td><a href="http://www.moe.gov">www.moe.gov</a></td>
</tr>
<tr>
<td>Biomass Association of Georgia</td>
<td>The association mission’s is to create a common and effective platform for cooperation, information and knowledge exchange on biomass in Georgia.</td>
<td><a href="http://www.biomass.ge">www.biomass.ge</a></td>
</tr>
<tr>
<td>National Forest Agency</td>
<td>Responsible for the administration and monitoring of 1.9 million hectares of the Georgian forests.</td>
<td><a href="http://www.forestry.gov.ge">www.forestry.gov.ge</a></td>
</tr>
<tr>
<td>Agency for Protected Areas</td>
<td>Responsible for the administration and monitoring of 153,000 hectares of the Georgian forests.</td>
<td><a href="http://www.apa.gov">www.apa.gov</a></td>
</tr>
<tr>
<td>Forestry Department of the Autonomous Republic of Adjara</td>
<td>Responsible for the administration and monitoring of 369,000 hectares of the Georgian forests.</td>
<td><a href="http://www.adjara.gov.ge">www.adjara.gov.ge</a></td>
</tr>
<tr>
<td>Energy System Commercial Operator</td>
<td>Responsible for the purchase and disposal of power balance</td>
<td><a href="http://www.esco.ge">www.esco.ge</a></td>
</tr>
</tbody>
</table>

### United Nations Development Programme (UNDP), Global Environment Facility (GEF) and Ministry of Environment and Natural Resources Protection of Georgia (MOENRP) joint activities to promote Biomass

- Development of the first Biomass Strategy and Action Plan of Georgia
- Supported the creation of the Biomass Association of Georgia
- Supported three pilot biomass plants to start producing briquettes (Manavi, Tbilisi, and Akhmeta)
- 700 tonnes of briquettes were produced since 2016 and it can increase to up 6,000 tonnes/year
- Development of quality standards of biofuels and equipment
- Creation of awareness materials on biomass
- Different training for biomass producers and users
- Development of a detailed feasibility study for production and utilization of biomass fuels
- Development of an assessment of biomass raw materials and potential resources availability and energy potential of agricultural and forestry wastes in Georgian regions

### References:


Caucasus Environmental NGO Network (CENN). The impact of firewood consumption on the economy, and cost-benefit analyses of replacing firewood with alternative fuel resources. Tbilisi, Georgia, September 2016.


