2 Americas
2.1 Caribbean

2.1.2 Dominica
Sven Homscheidt, Caribbean Renewable Energy Development Programme, St. Lucia

Key facts

<table>
<thead>
<tr>
<th>Key fact</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population</td>
<td>73,126</td>
</tr>
<tr>
<td>Area</td>
<td>750 km²</td>
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<tr>
<td>Climate</td>
<td>Marine tropical climate, with very little seasonal variation</td>
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<tr>
<td>Topography</td>
<td>Rugged mountains of volcanic origin (highest point: Mount Diablotins, 1,447 m)</td>
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<tr>
<td>Rain pattern</td>
<td>December to April: 50–160 mm. May to November: 90–350 mm (maximum and minimum monthly rainfall averages)</td>
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Electricity sector overview
The electricity supply coverage of Dominica is above 95 per cent. With the population being dispersed in the supplied area, energy supply is very expensive resulting in a domestic electricity rate of more than US$0.36 kWh.

Dominica Electricity Services Limited (DOMLEC) is Dominica’s sole vertically integrated electric utility. Although there are smaller independent power producers, such as the 275 kW Rosalie wind turbine and a 9-kW photovoltaic plant, DOMLEC has the ‘de facto’ monopoly for transmission and distribution of electricity.

DOMLEC is 20 per cent government-owned and 80 per cent owned by private investors and other shareholders. Since June 2007, the Independent Regulatory Commission acts as regulatory body.

Dominica’s electricity market is completely liberalized and anyone is free to apply for a generation, transmission, distribution or sales of licence for electricity. However, besides DOMLEC’s licence, to date only one licence was issued to an independent power producer for a 275-kW wind turbine. DOMLEC’s licence will expire in 2015, 10 years earlier than stipulated in the original contract. This change was enforced by the energy sector reform in 2006. Since 2005, Dominica is a member of the Petrocaribe (an Energy Cooperation Agreement based on solidarity support proposed by the Bolivarian Government of Venezuela intended to overcome asymmetries with regard to access to energy resources. This agreement aims at establishing a new favorable, equal and just exchange scheme between the counties of the Caribbean region, most of them without a State-controlled supply of these resources).²

To supply Dominica’s peak demand of currently some 17.5 MW, DOMLEC provides a total installed capacity of some 26.5 MW, of which 6.4 MW are small hydropower plants and the remaining 20.1 MW originate from its diesel plants (figure 1).

![Electricity generation in Dominica](source: Dominica Electricity Services³)

**Small hydropower sector overview and potential**
Water wheels were used in Dominica for processing sugar cane and other agricultural produce. Hydropower development in Dominica for electricity generation started during English Colonial times in 1951 with the installation of 2x 320 kW Pelton units at the Old Trafalgar plant. The New Trafalgar hydropower station replaced it in 1991 with 2x 1.761 MW Pelton turbines.

The current hydropower infrastructure in Dominica belongs entirely to DOMLEC and consists of three small hydropower plants with a total capacity of 6.4 MW, individual capacities ranging from 1.88 MW up to 3.50 MW (figure 2). Due to the high elevation of the terrain, the used turbines are Turgo in one plant and Pelton in the others.

![Small Hydropower capacities in Dominica](source: Dominica Electricity Services³)

Dominica is an island with frequent volcanic activity as well as frequent landslides that remodel the topography after heavy rain events. The owner of an eco-resort at the Rosalie River attempted to install a small hydropower turbine to provide electricity for his small cottage hotel. Unfortunately, the infrastructure was washed away by a major flood event and ever since the project activities have stopped.

The many waterfalls existing on the island are indications of the vast hydropower potential in Dominica. The Caribbean Renewable Energy Development Programme (CREDP-GIZ) has proposed and studied a 200-kW small hydropower project to be installed at the end of an existing bulk water pipeline, owned by the water utility Dominica Water and Sewerage Corporation. Generated electricity would be fed into the public grid. Although both the water utility and the electric utility have expressed their
interest in the project, its implementation has not commenced.

The future outlook for hydropower development in Dominica is positive. The available potential as well as the Government’s commitment to renewable energy development encourages the exploration of new hydropower projects. Although no concrete plans have been produced for further hydropower projects, the CREDP-GIZ is elaborating a study on the small hydropower potential of the island.

In 2011 drilling works have started at three sites for the exploration of geothermal power in Dominica, aimed to export excess electricity to the French neighbouring islands of Guadeloupe and Martinique via submarine cables. This partly EU-financed project looks promising and could supply Dominica’s base load if realized. This, on the one hand, limits the potential market for new hydropower investors in Dominica. On the other hand, the submarine cable opens many opportunities for the sale of electricity to the French territories – also from small hydropower.

**Legislation on small hydropower**

Regulations for the development of new small hydropower projects are very vague to non-existent. The Independent Regulatory Commission has not yet defined standard procedures for the development of new projects. Also, to date, no systematic regulation has been passed for the obligation to leave a minimum flow of water in the rivers when abstracting water for any purposes. However, all new projects will have to provide a comprehensive Environmental Impact Assessment, in which the minimum residual flow is one aspect to be analysed. Dominica’s government is very conscious to maintaining environmental standards when developing infrastructure projects as ecotourism is one of the major sources of income.

**References**

2. Bolivia, Ministerio del Poder Peninsular de Petróleo y Minería.