Disclaimer

Published in 2013 by United Nations Industrial Development Organization (UNIDO) and International Center on Small Hydro Power (ICSHP).

2013 © UNIDO and ICSHP

All rights reserved

This report was jointly produced by United Nations Industrial Development Organization (UNIDO) and International Center on Small Hydro Power (ICSHP) to provide information about small hydropower. The document has been produced without formal United Nations editing. The designations employed and the presentations of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of UNIDO and ICSHP concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO or its partners. The opinions, statistical data and estimates contained in the articles are the responsibility of the author(s) and should not necessarily be considered as reflecting the views or bearing the endorsement of UNIDO and its partners.

While every care has been taken to ensure that the content is useful and accurate, UNIDO and ICSHP and any contributing third parties shall have no legal liability or responsibility for the content or the accuracy of the information so provided, or for any loss or damage caused arising directly or indirectly in connection with reliance on the use of such information.

Copyright: Material in this publication may be freely quoted or reprinted, but acknowledgement is requested, together with a copy of the publication containing the quotation or reprint.

Recommended citation:
4 Europe

4.4 Western Europe

4.4.1 Austria

European Small Hydropower Association, Stream Map

Key facts

<table>
<thead>
<tr>
<th>Population</th>
<th>8,219,743</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>83,871 km$^2$</td>
</tr>
<tr>
<td>Climate</td>
<td>Temperate, continental. Cloudy, cold winters with frequent rain and some snow in lowlands and snow in mountains; moderate summers with occasional showers$^3$</td>
</tr>
<tr>
<td>Topography</td>
<td>Mountainous in the west and south (Alps); along the eastern and northern margins mostly flat or gently sloping$^4$</td>
</tr>
<tr>
<td>Rain pattern</td>
<td>Rainfall ranges from more than 1,020 mm annually in the western mountains to less than 660 mm in the driest region, near Vienna.$^2$</td>
</tr>
</tbody>
</table>

Electricity sector overview

The total electricity production in Austria was 71,075 GWh in 2010, with hydropower generating more than 56 per cent (figure 1).$^5$ Most of the imported electricity comes from Germany and Czech Republic.

Renewable energy policy

Austria’s 2020 renewable energy target, according to its National Renewable Energy Action Plan, is 34.2 per cent.$^6$ Electricity from renewable sources is supported mainly through a feed-in tariff (FIT), which is set out in the Green Electricity Act (ÖSG or Ökostromgesetz, last amended in 2012) and the regulations related thereto.

The construction of small- and medium-sized hydropower plants is subsidized under the Subsidy Directive 2010 on the granting of investment subsidies, as set out in Sec. 12, Sec. 12a and Sec. 13a of the Green Electricity Act (ÖSG), for the construction of combined heat and power (CHP) plants and small- and medium-sized hydropower plants.

Legislation on small hydropower

Since 2010 there is a regulation in force (Qualitätszielverordnung) giving recommendations on residual flow, based on three criteria using formulas. These formulas provide values being suitable to meet the ecological demands. If an owner is willing to carry out a more detailed hydro biological study, proving that less residual flow will provide sufficient ecological quality, the values calculated by the formula may be lowered.

Before 2003 the federal states of Austria had individual tariff regulations. In 2003 a country wide FIT system was implemented. The amount varies between 33 and 62 €/MWh (about US$43 to US$81 per MW) depending on the amount of production and renovation efforts of the owner. The tariff was guaranteed for 13 years.

Starting from 2010 an investment support system has been installed replacing the FIT system:

- <50 kW: 1,500 €/kW (about US$1,950/kW);
- 50 – 500 kW: 30 per cent of investment (max. 1,500 €/kW (about US$1,950/kW));
- 500 – 2000 kW: 20-30 per cent of investment, (max. €1,000-€1,500/kW (about US$1,300 - US$1,950/kW));
- 2 – 10 MW: 10-20 per cent of investment (max. €400-€1,000/kW (about US$520US$1,300/kW)).

Existing plants running under the FIT system will continue getting the tariff. The new system is only valid for new plants erected and set into operation after 2010.

The leading law in hydropower development is the Water Act regulating everything dealing with water. The Water Framework Directive (WFD) is implemented there. Additional requests are based on the environmental protection law, the forest law and the

![Figure 1 Electricity generation in Austria](Source: Ministry for Economy, Family and Youth)$^3$

Small hydropower sector overview and potential

In 2010, Austria had 2,589 small hydropower plants and a total installed capacity of 1,109 MW (4,983 GWh). By 2020, the aim is to have 2,870 small hydropower plants, with a total installed capacity of 1,300 MW (6,050 GWh) (figure 2).

![Figure 2 Small hydropower capacities in Austria](Note: Potential is based on planned capacity by 2020).
spatial planning laws. Finally the Green Electricity Act regulates support.

**Barriers to small hydropower development**

Concerns on the main environmental topics like reserved flow and fish bypassing the requests from the Government are continuously increasing and sometimes the consensus already reached is not stable and reliable.

The development of small hydropower is far behind the targets and there is no indication that the situation will change. There is a large gap between the general political obligation to increase the renewable energy production also coming from small hydropower and the reality of granting procedures which are often delayed.

The support scheme has been changed in 2010 from FIT to investment support. Recently, it has become possible to choose among these two options. Small hydropower operators prefer FIT. The administrative procedures have become more difficult due to additional requests from the Government executing the WFD. The budget dedicated to the support scheme is limited and in some years the requests coming from the owners exceed the money available.

The general opinion of mass media is very critical towards the development of small hydropower. However, the local population does not have a unique position and is predominantly in favour of small hydro. Social acceptance depends on the individual project and the benefits deriving from the project.

**References**
