

RENEWABLE ENERGY SNAPSHOT:

The former Yugoslav Republic of Macedonia

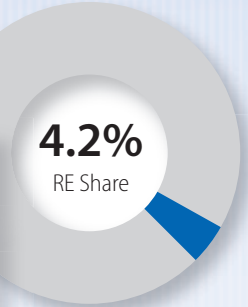
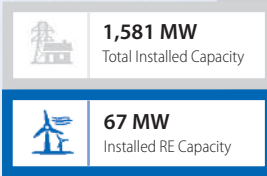


Empowered lives.
Resilient nations.

General Country Information

Population: 2,105,575
 Surface Area: 25,710 km²
 Capital City: Skopje
 GDP (2012): \$ 9,6 billion
 GDP Per Capita (2012): \$ 4,568
 WB Ease of Doing Business: 25

Electricity Generating Capacity 2012



Installed Renewable Electricity Capacity 2012 in MW

Technical Potential for Installed Renewable Electricity Capacity in MW

| | | | |
|-----|------------------|-----|------|
| 0 | 7.1 ¹ | 0 | 59.6 |
| 500 | 24,000 | 400 | 200 |

Sources: Pavlovic et al. (2013); Lalic et al. (2011); Mijakowski and Mijakowski (2013); EVN Macedonia (2013); Energy Agency (2013); Government of the Republic of Macedonia (2010); EWEA (2013); World Bank (2014); Renewable Facts (2013); EIA (2013); Hoogwijk and Graus (2008); Hoogwijk (2004); JRC (2011); and UNDP calculations.

Key information about renewable energy in the former Yugoslav Republic of Macedonia

Macedonia has huge technical potential for renewable energy electricity generation. To exploit this potential, in 2007 the Government of the former Yugoslav Republic of Macedonia introduced feed-in tariffs for renewable energy plant operators. Eligible renewable energy developers receive the feed-in tariffs via a power purchase agreement with the market operator that is valid for 20 years for wind farms and for 15 years for other technologies. Although the official currency is the Macedonian Denar, all tariffs are in Euros. Despite the favourable legislation, the increase in installed renewable energy capacity in recent years has remained low. The main reasons include the bureaucracy and complexity involved in obtaining permits for construction, land use and electricity generation (Mijakowski and Mijakowski, 2013). The former Yugoslav Republic of Macedonia performs well in the World Bank's Ease of Doing Business index, where it is ranked in 25th spot (IFC & World Bank, 2014). The country would therefore appear to offer a promising

¹ This value reflects the installed solar capacity in MW on 1 October 2013.

Feed-in tariff in the former Yugoslav Republic of Macedonia²

| Eligible technologies | Additional condition | Tariff granted in €/MW-h |
|----------------------------|---|---|
| Wind | <50 MW | 89.00 |
| Solar | <50 KW >50 KW and <1 MW | 160.00 120.00 |
| Hydro <10 MW | produced electricity <85 MW-h produced electricity >85 and <170 MW-h produced electricity >170 and <350 MW-h produced electricity >350 and <700 MW-h produced electricity >700 MW-h | 120.00 80.00 60.00 50.00 45.00 |
| Biomass | <3 MW | 150.00 |

Source: Energy Regulatory Commission of the former Yugoslav Republic of Macedonia (2013).

future market for renewable energy investment. Various small hydropower plants and a pilot 50 MW wind power plant are currently under development (SEECN, 2013).

Legislation and policy

With the implementation of the EU Directive 2009/28/EC by the Energy Community Ministerial Council in 2012, the former Yugoslav Republic of Macedonia committed itself to promoting renewable energy sources and to a national binding target of a 28 percent share of renewable energy in the gross final energy consumption by 2020 (EC, 2012). The Strategy for Renewable Energy Resources Exploitation up to 2020, which was adopted in 2010, describes the country's detailed plan to achieve the national renewable energy sources target with an older target of 21 percent (Government of Macedonia, 2010). The most recent Energy Law, adopted in 2011, is the main legislative document for the energy sector. It covers the regulation of electricity, renewable energy and also of oil and gas. Along with bylaws, rulebooks³ and regulations, such as the Regulation on Preferential Electricity from Renewable Energy Sources and the Regulation of Tariffs for Electricity, the most recent amendment to that law also defines the legal environment for renewable energy policy in the former Yugoslav Republic of Macedonia. The former Yugoslav Republic of Macedonia's legislation provides further incentives for investors. Operators producing electricity from renewable energy sources have priority in selling their electricity to the grid. But connection to the grid appears to be non-discriminatory compared to other forms of electricity generation depending on the decision of the Transmission System Operator, MEPSO. Foreign investors may be exempt of custom duties and there is a relatively low corporate income tax of 10 percent, with undistributed profits being exempt of the tax (PWC, 2012). The Government of the former Yugoslav Republic of Macedonia has capped the overall installed capacity of privileged producers using renewable energy sources to avoid an overload of the grid. The limits for maximum installed capacity in the former Yugoslav Republic of Macedonia are 150 MW for wind, 2 MW for solar PV (<50KW), 8 MW for solar PV (>50 KW), and 10 MW for biomass (Government of Macedonia, 2010). Power plants using renewable energy sources are required to obtain a concession, which is issued by the Ministry of Economy or a local municipality. In addition, a project developer has to apply for several other licences, e.g. energy generation licence (issued by the Energy Regulatory Commission) and a 'guarantee of origin', in order to receive the feed-in tariff (issued by the Energy Agency of Macedonia). According to the Agency for Foreign Investment and Export Promotion, 70 percent of the technical hydro potential is currently open for investment (Invest in Macedonia, 2013).

2 Electrical power produced from biogas power plants are also eligible to receive a feed-in tariff (Energy Regulatory Commission of the former Yugoslav Republic of Macedonia, 2013).

3 Investors can access detailed rulebooks on 'Renewable Energy Sources', on 'Renewable Energy Sources for Electricity Generation, and on 'The Method of Obtaining Status of Preferred Generator of Electricity, Generated from Renewable Energy Sources'. All are available in English at: www.ea.gov.mk/projects/unece/en/legislation.html.

The former Yugoslav Republic of Macedonia

Institutions

| Organization | Responsibility | Website |
|--|--|--|
| Ministry of Economy | - Responsible for development and implementation of the national energy legislation | www.economy.gov.mk/ |
| Energy Agency | - Prepares energy strategies, development plans and programmes, with particular emphasis on energy efficiency and usage of renewable energy sources - Responsible for issuing guarantees of origin for renewable energy electricity producers | www.ea.gov.mk/ |
| Energy Regulatory Commission | - Energy regulator responsible for regulating the energy sector - Responsible for developing and adopting regulations and rulebooks for renewable energy feed-in tariffs - Issues licences in the energy sector, e.g. licence for electricity generation | www.erc.org.mk/ |
| Electricity Transmission Operator (MEPSO) | - Transmission System Operator responsible for the operation, maintenance, development, and connection of the electricity grid as well as transmission of electricity - With its subsidiary, the Electricity Market Operator, it functions as a market operator | www.mepso.com.mk/en- |
| ELM | - An entirely state-owned joint stock company and the country's biggest energy electricity generator. Total capacity of 800 MW in thermal production and seven hydropower plants of 530 MW | www.elem.com.mk |
| Invest Macedonia | - State-owned Macedonian foreign investment promotion agency responsible to attract, consult and facilitate potential investors | www.investinmacedonia.com/ |

Opportunities to finance renewable energy projects in FYR of Macedonia

| Financing organization | Details | Website |
|---|---|--|
| Western Balkans Sustainable Energy Financing Facility (WEBSEFF) | Provides loans of €2 million to €5 million via local banks (Ohridska Banka AD Ohrid or IK Banka AD Skopje) for private investment in energy efficiency and renewable energy projects. Loans can cover up to 100 percent of the investment costs. | www.webseff.com/ |
| Western Balkans Sustainable Energy Direct Financing Facility (WeBSEDF) | Local small and medium enterprises with sound financial and economic structure and sufficient means of equity capital can apply for direct loans from the European Bank for Reconstruction and Development's Western Balkan Sustainable Energy Direct Financing Facility of €2 million to €6 million. | www.websedff.com |
| Green Growth Fund | Provides direct and indirect (through financial intermediaries) financing for small scale renewable energy projects usually not larger than €50 million. | www.ggf.lu/ |

The former Yugoslav Republic of Macedonia

| Financing organization | Details | Website |
|--|--|--|
| EU Means via the European Investment Bank | Loans and guarantees through commercial banks as intermediaries (e.g. Macedonian Bank for Development Promotion, NLB Tutunska Banka AD) are available. | www.europa.eu/youreurope/business/finance-support/access-to-finance/ |
| International Finance Corporation (IFC) | With investment (equity, loans and other financial instruments) and advisory services, IFC supports investment with focus on climate change, including investments in infrastructure and energy sectors. | www.ifc.org/ |
| European Bank for Reconstruction and Development (EBRD) | Provides renewable energy developers with equity, loans and loan guarantees for projects with good commercial prospects of up to 15 years' duration. | www.ebrd.com/pages/workingwithus/projects.shtml |

Recent projects

| Company | Project | Status |
|---|---|---------------------------|
| Xiamen Grace Solar Technology Co (China) | Constructed 870 KW of rooftop mounted solar energy projects in three locations in Macedonia. | Commissioned |
| EVN Macedonia Power Plants DOOEL Skopje (Subsidiy of Austrian EVN Group) | Subsidiary of energy supplier EVN Macedonia, operates 11 small hydropower plants, which have been refurbished and fully automated with a total installed power of 47 MW. | Commissioned |
| ELEM (Macedonia) | Received recently a €15 million loan from German development bank KfW for Macedonia's first wind park. Terna (Greece) and Siemens (Germany) are currently constructing the €55.5 million, 37 MW Bogdanci wind farm in the south of Macedonia. | Under construction |

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