



Montenegro
Ministry of Economy

PROGRESS IN RENEWABLE ENERGY IN MONTENEGRO

Vienna, 2 March 2016



DECISION ON THE IMPLEMENTATION OF DIRECTIVE 2009/28/EC

- According to the Decision of the Ministerial Council of the EnC on the implementation of Directive 2009/28/EC and amending Article 20 of the Energy Community Treaty, which was adopted on 18 October 2012 in Budva, **mandatory national overall target for Montenegro is 33%.**
- Share of energy from renewable sources in gross final consumption of energy **in 2009** in Montenegro was **26,3 %.**
- National Renewable Energy Action Plan to 2020** for Montenegro was adopted by the Government of Montenegro on 11 December 2014 and after that submitted to the Energy Community Secretariat.



MONTENEGRO PROGRESS REPORT UNDER RENEWABLE ENERGY DIRECTIVE 2009/28/EC

- The **first Montenegro Progress Report** on the promotion and use of energy from renewable sources was submitted to the Secretariat on 31 December 2014
- According to the Progress Report of Montenegro the sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources are:

| | 2013 <i>Year n-1</i> | 2012 <i>Year n-2</i> |
|--|-------------------------|-------------------------|
| RES-H&C (%) | 38.6 | 39.0 |
| RES-E (%) | 49.0 | 43.1 |
| RES-T (%) | 3.7 | 1.9 |
| Overall RES share (%) | 31.0 | 28.5 |
| <i>Of which from cooperation mechanism (%)</i> | - | - |
| <i>Surplus for cooperation mechanism (%)</i> | - | - |



CONSTRUCTION OF SMALL HYDRO POWER PLANTS

- Acting on the concession contracts concluded in the previous period:
 - we **constructed and launched 7 small HPPs** (with total installed power of **10,3 MW** and total investment value of around 17 million €).
 - we are **planning to construct 36 more small HPPs** (with total installed power of around **65 MW** and total investment value of around 96 million €).
 - **in 2016**, we are expecting to launch **4 more small HPPs**, with total installed power of around **12 MW** and total investment value of around 15,3 million €.
- Also, in the following period, we are planning to implement the **new tender procedure** to award concessions to construct small hydro power plants on **several** watercourses.



SMALL HPP PROJECTS REALIZED IN 2013, 2014 AND 2015

| Small HPP | Installed capacity (MW) | Planned annual production (GWh) | Value of the investment (million €) | Date of issuance of exploitation permit | Date of obtaining status of a privileged producer |
|-----------------|-------------------------|---------------------------------|-------------------------------------|---|---|
| sHPP Bistrica | 5,622 | 19,560 | 7,26 | 30.04.2015. | 19.05.2015. |
| sHPP Jezerštica | 0,954 | 3,200 | 1,70 | 10.10.2013. | 28.11.2013. |
| sHPP Orah | 0,954 | 4,808 | 2,50 | 27.04.2015. | 19.05.2015. |
| sHPP Rmuš | 0,509 | 1,850 | 1,20 | 30.04.2015. | 19.05.2015. |
| sHPP Spaljevići | 0,650 | 2,600 | 1,52 | 27.04.2015. | 19.05.2015. |
| sHPP Vrelo | 0,612 | 2,760 | 1,60 | 14.05.2015. | 10.07.2015. |
| sHPP Bradavec | 0,970 | 3,823 | 1,20 | 30.09.2015. | 09.11.2015. |
| TOTAL | 10,271 | 38,601 | 16,98 | | |



SMALL HPP WHOSE COMMISSIONING IS EXPECTED IN 2016

| Small HPP | Installed capacity (MW) | Planned annual production (GWh) | Value of the investment (million €) |
|------------------|----------------------------|------------------------------------|--|
| sHPP Jara | 4,856 | 6,373 | 4,478 |
| sHPP Babinopolje | 2,258 | 3,850 | 3,046 |
| sHPP Šekular | 1,511 | 5,400 | 1,850 |
| sHPP Bistrica | 3,497 | 11,319 | 5,926 |
| TOTAL | 12,122 | 26,942 | 15,300 |



- **Wind farm on the site Možura**

- **The Agreement** on the lease of land and building a wind farm on the site **Možura** was signed in 2010 with a consortium of "**Fersa & Čelebić**" which is composed of "Fersa Energias Renovables" SA Spain and "Čelebic" doo Podgorica.
- The Agreement envisages the construction of wind power plant installed capacity to **46 MW** and estimated annual production **100 GWh**, and the period of lease for 20 years.
- Value of the investment is about **84 million €**.
- In accordance with Annex 1 of the Agreement from December 2012 investor founded business organization "**Možura Wind Park**" doo, to which were transferred all rights and obligations under the Agreement.
- The **building permit** for the construction of the wind farm on the site Možura was issued on 15 December 2014.
- The Agreement on **the transfer of the lease contract** was signed with the company "**Enemalta plc**" from Malta on 27 October 2015.
- The major owner of the company "**Enemalta plc**" is the Government of Malta, and 33% of the share capital is owned by company Shanghai Electric Power – - electricity producer and a subsidiary of China Power Investments.



CONSTRUCTION OF WIND FARMS (II)

- **Wind farm on the site Krnovo**
- **The Agreement** on the lease of land and building a wind farm on the site **Krnovo** was signed in 2010 with a consortium of "MHI-IVICOM Consulting GmbH", whose members are "Mitsubishi Heavy Industries" from Japan and "IVICOM Consulting" GmbH, Austria.
- The Agreement envisages the construction of wind power plant installed capacity to **72 MW** and estimated annual production **200 GWh**, and the lease period 20 years.
- Value of the investment is about **143 million €**
- The Agreement has been **annexed three times** (Annex 1, Annex on expropriation and Direct contract that enabled the "step-in" have been concluded).
- In accordance with Annex 1 of the Agreement from October 2012, instead of "Mitsubishi Heavy Industries", the consortium has been approached by the **French company "Akuo Energy"** as a new leader of the consortium.
- On the basis of Annex 1 of the Agreement the investor has transferred all of its rights and obligations under this Agreement to a subsidiary **"Krnovo Green Energy" doo** (Project company).
- The **building permit** for the construction of the wind farm on the site Krnovo was issued on **7 May 2014** and the **construction activities were begun on the 7 May 2015**.



SOLAR POWER PLANTS

- Montenegro has at its disposal significant potential of sunlight, but this potential has not been used so far significantly for the production of electricity. The main reasons are the relatively expensive equipment for the construction of solar power plants and the commitment of Montenegro to primarily use the vast hydro potential for the production of electricity.
- In 2014 and 2015, Ministry of Economy issued **energy permits** for construction next solar power plants:

| Solar power plant | Installed capacity (kW) | Planned annual production (MWh) |
|---|-------------------------|---------------------------------|
| SPP "Semir" (Gusinje) | 8,97 | 9,46 |
| SPP "Brod" (Nikšić) | 2,20 | 3,90 |
| SPP on residential building Kijanović (Bar) | 9,70 | 10,47 |
| "Klenak 80 kW" | 83,00 | 113,00 |
| TOTAL | 103,87 | 136,83 |



HPPS ON THE MORACA RIVER AND HPP KOMARNICA

In order to create conditions for the construction of hydro power plants on Morača and Komarnica, common activities with interested investors from different countries (China, Turkey, Slovenia) were intensified.

- **Hydropower Plants on the Moraca River**

(HPP Andrijevo, HPP Raslovići, HPP Milunovići and HPP Zlatica)

- Total installed capacity 238 MW
- Annual production 721 GWh
- Construction costs 540 million €

- **HPP Komarnica**

- Total installed capacity 168 MW
- Annual production of 232 GWh)
- Construction costs 182,8 million €



HE Zlatica



HE Raslovići



HE Milunovići



HE Andrijevo





OTHER ACTIVITIES IN THE FIELD OF RES

- In December 2015, the Parliament adopted **The New Energy Law** which was published in the Official Gazette of Montenegro, No 5/16).
- In December 2015, the Government adopted **Decree on amendments to the Decree** on the tariff system for determining the incentive prices for electricity produced from renewable energy sources and high efficiency cogeneration (Official Gazette of Montenegro, No 79/15).
- In accordance with The New Energy Law, a number of secondary legislation will be prepared during this year.
- **Study on Possibility for Introduction of Other Alternative Fuels in Transport Sector** in Montenegro is prepared in the frame of EU funded project: Developing Sustainable Energy Use (IPA 2011).
- **Study/cadastre of watercourses** on which small hydro power plants of potential installed output of 1 to 10 MW can be built in all municipalities of Montenegro will be preparing during 2016 and 2017 (technical assistance will be provided by EBRD and the Government of the Czech Republic).



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Thank you for your attention !