



## **UNDP Small Hydropower Development in Montenegro Project**

**Our Support in overcoming Main Challenges in the process**

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## Situation Analyses

Montenegro has a total installed capacity of 868 MW, of which over 70% comes from two large hydro generating facilities. The remainder comes from a single coal fired power generating station.

It is calculated that the small HPPs generation can reach the share in the national electric power balance of approximately 2.5% in 2015. Also, in the period of 10 years, it is predicted to increase installed capacity and small HPPs' generation by more than 4 times in comparison with the current status.

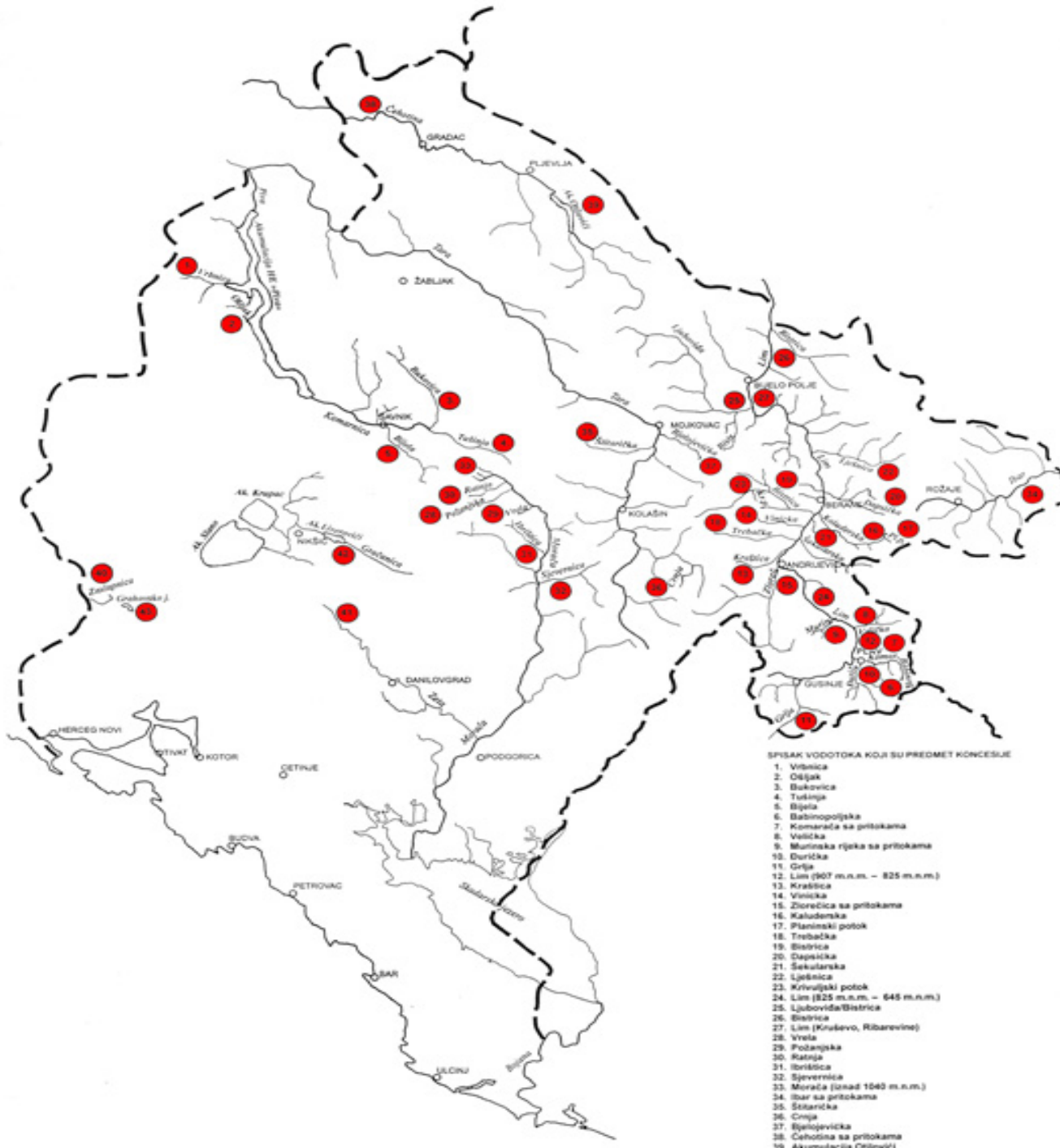
Montenegro can no longer meet its own power needs. In 2005 the country had a power deficit of 1800 GWh. To make up the difference the National Electric Power Company of Montenegro (EPGC) imported power, and over the last few years these imports have met 1/3 of all consumption needs, and imported power is more expensive than domestic production. In 2006 the average domestic cost of generation was € 2.65 cents/kWh, while the imported price was € 4.2 cents/ kWh.



The Government of Montenegro (GoM) has adopted the new Energy Strategy in December 2007, and in the same month it had published a tender for research and construction of small hydro power plants on over 40 locations. This move is in line with the new Small Hydro Power Development Strategy adopted in April 2006 that sets a target of 15 to 20 MW of new generating capacity from small hydro power resources by 2015 and it constitutes an environmentally and politically acceptable way of reducing the country's dependence on energy imports. Adoption of new Energy Law is in the final state which rounds up necessary legal framework in this area.

In 2008 concessions have been awarded for following 8 sites:

- Babinopoljska- ident.br.6 -Lim-opština Plav- »Kroling« DOO - Danilovgrad
- Grlja-ident.br.11-Lim-opština Plav - Energie Zotter Bau GmbH & Co KG-Judenburg
- Bistrica-ident.br.19 -Lim-opština Berane i Andrijevica »Hidroenergija Montenegro« DOO - Berane
- Šekularska-ident.br.21-Lim-opština Berane i Andrijevica - »Hidroenergija Montenegro« DOO - Berane
- Bistrica-desna pritoka Lima-ident.br.26-Lim-opština Bijelo Polje - »Haider Extrem Energy«- Sarajevo
- Crnja-ident.br.36 - Tara-opština Kolašin - »Dekar« DOO - Podgorica
- Bjelojevićka-ident.br.37- Tara-opština Mojkovac- »Haider Extrem Energy« - Sarajevo
- Zaslavnica-ident.br.40-opština Nikšić - »Bast« DOO - Nikšić.



1. Accumulation of Piva River
2. Komarnica
3. Lim (Plav region)
4. Lim (Berane and Andrijevića)
5. Lim (Bijelo Polje)
6. Morača
7. Ibar
8. Tara
9. Čehotina
10. Zaslavnica
11. Zeta
12. Gračanica
13. Grahovsko Leg



## **Why invest in small hydros:**

- Exploit energy potential of the country**
- Reduce the dependency on imported energy**
- Promotes environmental protection through CO2 emissions reduction (1 GWh from small hydros : avoids emissions of 480 tones of CO2, saves 220 tones of petrol or 335 tones of coal, supplies 250 households in developed countries and 450 in undeveloped countries)**
- Assists the maintenance of river basins and natural surroundings**
- Initiation of further local economical development especially in the north**
- High energy and investment payback ratio**



## PROJECTFACTS

**Title: “Power Sector Policy Reform to Promote Small Hydropower Development in Montenegro”**

**Duration: June 2008 – May 2011**

**Budget:1,018,393USD provided by GEF**

**Goal: To reduce green house gasses emissions by creating favorable legal, regulatory and market environment and building institutional and administrative capacities to promote development of Montenegro’s abundant small hydropower potential for grid-connected electricity generation.**

**Objective: An increase in 15MW to 20MW of new power generating capacity in Montenegro by the close of the project. The project is expected to result in an estimated annual reduction of 20,118 -26,824 tons of CO<sub>2</sub>eq by facilitating development of new small hydropower plants with total production capacity of 15- 20 MW.**



**Project goals will be achieved by removing existing legal, regulatory, institutional and market barriers to private investments in small hydropower development in Montenegro. The project strategy will be realized through achievement of the following four Outcomes:**

- streamlining and simplifying the application procedures for small renewable independent power producers;**
- collecting basic data to make investment decisions;**
- setting attractive but competitive business terms and conditions for investors;**
- and helping the new Energy Efficiency (EE) and Renewable Energy Unit role out a streamlined and transparent tendering process.**

**Main partners:**

- Ministry for Economic Development, Energy Efficiency and Renewable Energy Sources Unit**
- Other State Institutions (Hydromet. Institute, Energy Agency etc.)**
- Business Sector**
- Local Governments**
- Civil sector**



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**We are opening doors for the type of investors**  
**that:**

- **are experienced and reputable in this field**
- **will provide best possible usage of water in terms of energy production**
- **are environmentally friendly**
- **will further invest in the local community**





## Main challenges in the process:

1. Legal and regulatory framework not developed or too complicated and discouraging for investors
2. Data for small-hydro sites to support investment decisions lacking
3. Awareness and promotion of benefits from investing in this sector not at high level
4. Institutional arrangements not developed enough to steer the process



How we tackle them :

**Legal and regulatory framework not developed or too complicated and discouraging for investors**

*(legal framework still not defined, too many permits involved, unclear and very time consuming processes of licensing, ownership on the land unresolved, no spatial plans for the locations where small hydro are planed etc)*

**Actions taken:**

- Adoption of new Tender Procedures and Documents
- Drafting of new Legislation
- Drafting other Regulatory Acts (Power Purchase Agreement and Acts regulating Tariffs)
- Spatial Planning issues
- Commission on technical revision of proposed project by investors established



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## New tendering documents



### Bidding criteria 2008

Number	Criteria	Number of points
1	Concession fee (at least 2%)	0-40
2	Deadlines according to phases of the Concession Contract	0-35
3	Investment in the local infrastructure	0-15
4	Qualification and experience of the bidder and the staff	0-40



## Tendering Documents 2008/9: Pre-Qualification Phase

Number	Criteria	Number of points
<b>1</b>	<b>Technical capability</b>	<b>0-45</b>
1.1	Experience in building SmH	0-10
1.2	Ownership on SmH	0-5
1.3	Capacity of build SmHs	0-10
1.4	Capacity of SmH owned by bidder	0-10
1.5	Experience in building complex objects	0-10
<b>2</b>	<b>Financial ability</b>	<b>0-35</b>
2.1	Value of gross income	0-20
2.2	Credit indebtedness share in total income of the last year	
2.3	Gross income from energy production	
<b>3</b>	<b>Participation on Montenegrin market</b>	<b>0-20</b>



## Tendering Documents 2008/9: Qualification Phase

Number	Criteria	Number of points
1	Concession fee	0-55
2	Technical parameters from proposed project	0-30
2.1	Yearly production of energy	0-20
2.2	Installed strength of SmH	0-10
3	Ownership of the land	0-10
4	Multi-functionality of the solution	0-5
5	Acceptance of the final solution	Accepted/Not Accepted



## Data for small-hydro sites to support investment decisions lacking

- Purchase of measurement equipment for Hydromet. Institute
- Trainings for Hydromet. Institute staff
- Web site on renewable energy sources

[www. oie-cg.me](http://www.oie-cg.me)



# OBNOVLJIVI IZVORI ENERGIJE U CRNOJ GORI

[O projektu](#)[Novosti](#)[Energetika Crne Gore](#)[Hidropotencijal](#)[Ostali izvori energije](#)[Poslovni vodič](#)[Kontakt i linkovi](#)*Crna Gora**Ministarstvo za ekonomski razvoj*

## Reforma politike energetskog sektora u cilju promovisanja razvoja malih hidroelektrana u Crnoj Gori

[→ JAVNI POZIVI](#)[→ DOKUMENTI](#)

- [→ Energetika Crne Gore](#)
- [→ Hidropotencijal](#)
- [→ Ostali izvori energije](#)
- [→ Ostalo](#)

[→ NOVOSTI](#)**19.2.2009** //**Saopštenje za javnost**

Tehnička dokumentacija koju je izradio HMZCG povodom budućeg novog tendera za izgradnju mHE u CG

**12.12.2008** //**Saopštenje za javnost**

Postavljena Internet prezentacija Obnovljivih izvora energije u Crnoj Gori.

### → Reforma politike energetskog sektora u cilju promovisanja razvoja malih hidroelektrana u CG



Projekat "Reforma politike energetskog sektora za promociju malih hidroelektrana u Crnoj Gori" će pomoći Vladi da realizuje svoj cilj od 15 do 20 MW novog malog proizvodnog kapaciteta do kraja ovog Projekta umjesto do 2015. kako je definisano Strategijom. Nadalje, ovaj Projekat će pomoći Vladi u obezbjeđivanju dodatnog kapaciteta na isplativiji i ekonomičniji način, te stoga na politički održiviji način. Na taj način Projekat će izbjeći 402,360 do 536,480 CO<sub>2</sub> eq emisija gasova staklene bašte (Green House Gases (GHG)) tokom perioda od 20 godina rada novih malih hidro elektrana. Projekat će to ostvariti kroz pružanje podrške Vladi Crne Gore na sljedeći način:

- uobličavanjem i pojednostavljuvanjem procedura za prijave za male nezavisne proizvođače obnovljive energije
- sakupljanjem osnovnih podataka za donošenje investicionih odluka;
- uspostavljanje atraktivnih, ali konkurentnih poslovnih uslova za investitore; i
- pomaganjem Jedinici za energetska efikasnost i obnovljivu energiju u uobličavanju i transparentnosti tenderskog procesa.

[» više](#)

- Projektni dokument UNDP-a
- UNDP Project Document

### → Akcioni plan projekta

Akcioni plan za realizaciju Projekta je potpisan od strane Branimira Gvozdenovica, ministra za ekonomski razvoj u Vladi Crne Gore i Aleksandra Avanesova, stalnog koordinatora Sistema UN i stalnog predstavnika UNDP u Crnoj Gori u Podgorici 01.08.2008. godine.



## **Awareness and promotion of benefits from investing in this sector not at high level**

(there is not enough awareness on the benefits that renewable energy sources bring regarding:  
economical growths of the local community, environmental impact and climate change preservation and energy production)

### **Actions:**

**Round tables and meeting with Business sector, Local Government and Civil Sector Representatives**

**Publications promotion this sector**

**Web site on renewable energy sources**





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**Institutional arrangements not developed enough to steer the process**

**(small and understaffed unit dealing with both energy efficiency and renewable energy development)**

**Actions:**

**Institutional Analysis of Energy Efficiency and Renewable Energy Unit**

**Expert support to Ministry for Economic Development**

**Joined activities and knowledge development with Unit staff**



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• Added value of the Project:



## Climate Change Friendly Economic Settlements

Most of the locations set by the Government of Montenegro for building small hydro power plants are located in the north which is economically most undeveloped region of the country. Further development of the small hydro power sector and its connection with various business would create new jobs in the northern region and it that way directly affect poverty reduction of this part of the country.

UNDP will engage its capacities to further expand already planed locations for small hydro plants though development of environmentally friendly business such as: eco tourism, wood processing, organic agriculture, fishery etc. Though careful planning these settlements would provide opportunities for starting up of fully environmentally friendly business that would be fully connected by using clean energy from small hydro plants. Furthermore, these settlements would become leaders of the economic growth of the northern region and provide new jobs opportunities for the local population.

Development of these type of settlements is in fully in line with:

Government's strategic goals

GEF strategic goals

UNDP Montenegro strategic goals



## Climate Change Friendly Settlements

**UNDP will provide full support to establishment of the environmentally friendly economic settlements with small hydro plants as its basis through following activities:**

- creating development plans (spatial plans of the concrete area),**
- removing procedural barriers for initiating above explained environmentally friendly enterprises**
- make available of know-how from best international practices in this field**
- providing favorable credit lines for initiation of the mentioned business.**

**With the help of most reputable regional and international expertise locations with highest potential for implementation of this idea will be identified and all challenges that need addressed will be concretely defined. All of the above activities will be done in full cooperation and coordination with the Ministry of Economic Development and included local governments.**



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**THANK YOU FOR YOUR ATTENTION**

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