Promotion of RE in BiH

The experience in Bosnia and Herzegovina

Form of Government: Republic
Governmental System: Parliamentary democracy
Area: 51,209 km²; a total of 1,538 km of shared borders with Croatia (932 km), Montenegro (249 km), Serbia (357 km)
Population: 3.8 million
Capital: Sarajevo (population of some 400,000)
Administration: Federation of Bosnia and Herzegovina (10 cantons, 79 municipalities), Republika Srpska (63 municipalities) and Brčko District
GDP (2012): EUR 13.1 billion
Per capita GDP (2012): EUR 3,419
Currency: Convertible mark (ISO-code: BAM), BAM/EUR = 1.956 - BAM/USD = 1.557

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Bosnia and Herzegovina/GIZ/RES Advisory in BiH

BiH Energy mix

- Transport 19%
- Electricity 28%
- Heating and cooling 53%

BiH RES 2020 Incentives

- HYDRO 64%
- WIND 27%
- SOLAR 2%
- BIOMASS 7%

Overall target for the share of energy from renewable sources in gross final consumption of energy in for the baseline year and 2020, for Bosnia and Herzegovina

Share of electricity production in BiH

- Hydro power plants: 38.73%
- Thermal power plants: 19.28%
- Small hydro, wind, solar and industrial plants: 59.35%

<table>
<thead>
<tr>
<th>Share of energy from renewable sources in gross final consumption of energy in 2009</th>
<th>34.0 %</th>
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<tbody>
<tr>
<td>Target share of energy from renewable sources in gross final energy consumption in 2020</td>
<td>40.0 %</td>
</tr>
<tr>
<td>Expected total adjusted energy consumption in 2020</td>
<td>4851.3 (ktoe)</td>
</tr>
<tr>
<td>Expected amount of energy from renewable sources corresponding to the 2020 target</td>
<td>1940.5 ktoe</td>
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</tbody>
</table>
Current situation in solid biomass in BiH

ESCO MODEL – (B)ESCO FACTS

Energy supply cont.

- No. of projects: > 50
- Installed capacity: ~ 50 MWth
- Type of energy fuel: Solid biomass
- Coogeneration: 0
- Available feed in for biomass: ~ 5 MWel

Energy mix in residential sector:
- Coal, 23.1%
- Natural gas, 26.6%
- Wood, 39.4%
- Fuel oil, 9.0%
- Electricity, 1.9%

Hospital

Schools

Services

DHS
DHS in BiH

- DHS in urban places
- DHS in energy utilities
- Local DHS from local factory

Heat plant
TPP/HP
Non operate
Current and planned DHS on solid biomass

In operation
Developing phase
ESCO PILOT PROJECTS IN BiH

Technical assistance (Energy Audit/Feasibility Study)

ESCo offer/ bid/ proposal

Tender evaluation

Awarding & signing of contract

Zenica – Hospital
Mostar – Hospital
Sokolac - DHS
ESCO PILOT PROJECTS IN BiH

Zenica
Cantonal Hospital
32,000 m²
Investment: € 5 - 7m

Mostar
Cantonal Hospital
11,000 m²
Investment: € 0,5m

Sokolac
District Heating System
80,000 m²
Investment: € 7,5m
CHALLENGES FOR ESCO MODEL IN BUILDINGS

(Qstv) Stvarna potrošnja energije (18 °C)

(Qth1) Toplotne potrebe objekta prije sanacije (21 °C)

(Qth2) Toplotne potrebe objekta poslije sanacije (21 °C)

Real energy consumption

Energy needs before

Energy needs after

ΔQ; Qth1 ≠ Qstv
Real energy consumption: 9.286 MWh

Energy needs: 13.870 MWh

Deviation: 33%
Future development

- Lack of regulations for ESCO & budget issue
Lessons Learned

Pilot project:
Biomass cogeneration for district heating system based on PPP model
Baseline

- District heating dating back from 1980
- Owner – Sokolac municipality; System managed by the public enterprise “Toplane Sokolac”
- Service for 26,400 m² (collective housing and public buildings)
- Boiler capacity 14,2 MW (6,52 MW in use)
- Biomass consumption 25,000 bulk m³
- Biomass cost 425,000 KM per year
- Smooth biomass procurement

- Individuals 1.0 KM/m² per month during 12 months
- Public buildings 3.0 KM/m² per month during 12 months
- Hospital, schools 1.6 KM/m² per month during 12 months
- Energy consumption measuring and tariff based on heat consumption not available
- Collection rate around 90%

Source: CETEOR Sarajevo
Project proposal

- Installation of CHP plant powered by waste biomass (1 MWe and 4.1 MWth)
- Peak load from the existing boiler (first three years), installation of the new one of 4 MW after third year
- Reconstruction and enlargement of the network (potentially 144,983 m² new users, according to survey 131,500 m²)
- Network connection feasible (according to Pale energy supply company)
- Free quote for feed-in tariff

Source: CETEOR Sarajevo
Public call for the project maintenance and heat supply system of district heating in the municipality of Sokolac with the installation of a biomass cogeneration plant

Published on 01 June 2016

Opening date: 31/05/2016.
Opening date: 7/8/2016.
Deadline: 08/07/2016.

CALL FOR IMPLEMENTATION OF THE PROJECT PUBLIC PRIVATE PARTNERSHIPS

Tender documentation is available from the date of publication of this public invitation the deadline for submitting requests to participate 7.8.2016, up to 12 hours.

Application for participation should contain all documents listed in the call, and all documents must be purchased.
Thank you for your attention!

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