Biomass projects on the Balkans - KfW’s assistance to stimulate regional market opportunities

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Energy - Priority area of cooperation
KfW sector activities in the WB6

Modernization
• Expansion and rehabilitation of renewable energies and energy efficiency
• Know-how and technology transfer
• Smart solutions for networks
• Climate and environmental protection

Economic growth
• Support for sector and structural reforms
• Promotion of economic development and employment
• Participation in European Energy Markets
• Relief of public budget

Integration
• Regional connectivity (Western Balkan 6 Process, Energy Community)
• EU pre-accession and implementation of the acquis communautaire
• Implementation of international conventions on climate protection
Fuel Substitution:
Reduction of CO\textsubscript{2} and polluting emissions (SO\textsubscript{2}, NO\textsubscript{x}) from electricity generating and district heating facilities through fuel switch from e.g. lignite or mazut to wood-based fuel.

Domestic Energy Resources:
Reduction of fossil fuel import dependencies (e.g. mazut) through use of domestic biomass potentials.

Economic development and employment:
Market and job opportunities for collection, transport and handling of biomass products.
Why wood-based fuel?

The economic dimension:

Price development of different fuel types in Germany

Advantages of wood chips

› Low price volatility
› Low unit costs
› Import substitution
› Local value generation

Source: Wood chips and pellet prices: C.A.R.M.E.N. e.V.; Heating oil and natural gas price indices: German statistical office
Why mainly for District Heating?
The ecological dimension:

Advantages of Biomass

› CO2 neutral
› SO2-reduction
› Reduction of environmental risks (e.g. through oil leakages)
Biomass projects on the Balkans
Croatia: Electricity generation and heat supply for industry

- **Project owner:** Strizivojna Hrast d.o.o.
- **Type of investment:** co-generation power plant with auxiliary equipment
  - $P = 3.3 \text{ MW}_{\text{el}}$ and 20 t/h steam
- **Total investment:** 15.6 Mio Euro
- **Current status:** Implemented since 2014
- **Fuel:** Wood logs based on contract with Croatian National Forest; own wood chipper
Biomass projects on the Balkans
Croatia: District heating and power generation in Osijek and Sisak

- **Project owner:** HEP d.d.
- **Type of investment:** Two co-generation power plants with auxiliary equipment
  - \( P = 3.0 \text{ MW}_{\text{el}} / 10.0 \text{ MW}_{\text{steam}} \) (Osijek)
  - \( P = 3.0 \text{ MW}_{\text{el}} / 10.0 \text{ MW}_{\text{steam}} \) (Sisak)
- **Total investment:** ~ 35 Mio Euro
- **Current status:** Under construction (Dec 2016)
- **Fuel:** Wood chips based on contract with Croatian National Forest. At a later stage own wood chipper is considered.
Biomass projects on the Balkans
Montenegro: District heating system Kolasin

- **Project owner:** Community of Kolasin
- **Type of investment:** Installation of new Heat-only-Boilers (2 x 3.6 MW), fuel switch to wood chips, rehabilitation of pipe network and heat exchangers.
- **Total investment:** ~ 6 Mio Euro
- **Current status:** Feasibility Study by IPF3
- **Fuel:** Wood logs from local forests.
  Wood harvesting is supervised by MNE State Forest Agency. Own wood chipper and handling equipment.
Biomass projects on the Balkans
Albania: Rehabilitation of Student Dormitories in Tirana

- **Project owner:** City of Tirana
- **Type of investment:** Rehabilitation of the Student City Complex including installation of small decentralized Heat-only-Boilers for up to 29 student dormitory buildings.
- **Total investment:** ~ 32 Mio Euro
- **Current status:** Implementation starts 2017
- **Fuel:** Wood chips or pellets to be contracted from local suppliers.
Biomass projects on the Balkans

Serbia: Fuel switch for district heating systems of several communities

- **Project owner**: Different Serbian communities
- **Type of investment**: Installation of new Heat-only-Boilers at new locations, fuel switch to wood chips, rehabilitation of pipe network and heat exchangers.
- **Total investment** Phase 1: ~ 27 m EUR incl. 5 m co-financing from SECO
- **Overall Programme**: 107 m EUR
- **Current status**: Implementation starts 2017 with 8 municipalities
- **Fuel**: Wood logs based on contract with Serbian National Forest or local suppliers; eventually own wood chippers.
Biomass projects on the Balkans
Main Challenges

› **Supply chain:** sufficient quantity of wood available, => sustainable supply chains have to be organized – logistical challenge

› **Transforming the sector:** Introduction and implementation of new energy source for DH needs lot of lobbying.

› **Sustainable supply:** FSC or similar standards for sustainable forest management (national forest authorities in the Balkan countries usually have strict standards)
Thank you for your attention!

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