

**UPDATES ON THE ONGOING AND PLANNED ENERGY
EFFICIENCY AND DEMAND REDUCTION MEASURES IN THE
REPUBLIC OF SERBIA**

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LEGAL REGULATIONS IN THE FIELD OF ENERGY EFFICIENCY

- **EED – Directive 2012/27/EU on energy efficiency** as amended by:
 - **Directive (EU) 2018/844*** (of 30 May 2018) amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency
 - **Directive (EU) 2018/2002** (of 11 December 2018) amending Directive 2012/27/EU on energy efficiency
 - **Regulation (EU) 2018/1999** (of 11 December 2018) on the Governance of European Union and Climate Action
 - **ELD - Regulation (EU) 2017/1369** (of 4 July 2017) setting a framework for energy labelling and repealing Directive 2010/30
 - **Ecodesign** – Directive 2009/125/EC establishing a framework for the setting of ecodesign requirements for energy-related products
 - **EPBD – Directive 2010/31/EU on the energy performance of buildings** amended by:
 - **Directive 2018/844***
 - 2021: Law on Energy Efficiency and Rational Use of Energy ("Official Gazette of the RS" No. 40/21) – under the competence of MME
 - A total of 31 by-laws have been adopted so far, 6 are in adoption procedure and 6 in preparation
 - Technical regulation on energy labeling and eco-design: 7 adopted, 2 in adoption procedure and 2 in preparation
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- The diagram uses blue brackets on the right side to group the regulations into three categories:
- **Law on Energy Efficiency and Rational Use of Energy (LEERUE) and by-laws**
 - Energy Law
 - Law on Fees...
 - **Law on Energy Efficiency and Rational Use of Energy (LEERUE) and**
 - Law on Planning and Construction and by-laws – amendment for the purpose of harmonisation is in progress under the competence of MCTI
- LEERUE and by-laws

ENERGY MANAGEMENT SYSTEM

Number of licensed energy managers:

- 127 in the field of energy efficiency in the public sector
- 59 in the field of energy efficiency in buildings
- 207 in the field of energy efficiency in the industrial sector

Number of obligated parties per categories:

- 80 in the field of energy efficiency in the public sector
- 11 in the field of energy efficiency in buildings
- 58 in the field of energy efficiency in the industrial sector

Savings achieved by applying the energy management system for the period 2018-2021

- Final energy savings 29,874.3 toe
- Primary energy savings 39,604.97 toe
- tCO₂ savings 208,713.60 tCO₂

Obligations of the obligated parties for energy management system:

- 1% of primary energy savings compared to the energy consumed in the previous calendar year in terms of energy efficiency in buildings and the public sector, or 1% savings in primary energy consumed at the enterprise level in the previous calendar year per product unit in terms of obliged parties in the industrial sector
- Submission of the Annual Report on achieved energy savings until 31 March of the current year for the previous year through information systems
- Development of energy efficiency plan and programme



RECENTLY FINALIZED ENERGY EFFICIENCY PROJECTS IN BUILDINGS

MUNICIPAL ENERGY EFFICIENCY AND MANAGEMENT PROJECT IN THE REPUBLIC OF SERBIA (MEEMP) - SECO

Description: The importance of the project was the achievement of systemic and comprehensive energy management at the local level through the introduction of the European Energy Award certificate and the improvement of the energy efficiency of public buildings (primarily schools and kindergartens) in order to increase the standard of living, promote economic development and provide a response to climate change.

The Project was implemented in accordance with the Agreement between the Government of the Republic of Serbia and the Government of the Swiss Confederation signed on 28 March 2017.

The project also included rehabilitation (energy recovery) of 14 buildings and capacity development.

Commencement of works: January 2018

Completion of works: December 2022

Annual energy savings: 3.439 MWh per year

Annual CO2 emission reduction: 1.146 t per year

Second phase: in the preparation

Expected start of second phase is 2023.

It will cover reduction of air pollution in 10 municipalities.



KG Pcelica - Krusevac



KG Bubica - Vrbas



ES Nada Matic - Uzice



ES Branko Radicevic - Buljane - Paracin

ONGOING ENERGY EFFICIENCY PROJECTS IN PUBLIC BUILDINGS

Project “Energy Efficiency in Public Buildings and Renewable Energies in the District Heating Sector („Greening the Public Sector”) - rehabilitation of VMA hospital - KfW



Project description: The project value is EUR 200 million. The plan is to conduct rehabilitation of the hospital, implement measures on the thermal envelope of the building, on technical systems for air conditioning, heating and cooling, prepare sanitary hot water using renewable energy sources, and to renovate the interior of the building and implement measures related to improving the functionality of the hospital, such as the renovation of operating rooms, improvement of hygiene and fire safety. The project will be implemented in three phases Funding: Loan from the German Development Bank KfW in the amount of EUR 50 million for IA phase

Commencement of works: beginning of 2024

Completion of works: end of 2028

Expected energy savings: 58 GWh/a

Expected CO2 reduction: 24 000 t

Status: The selection process for the technical services of the implementation consultant is finished and it is expected that the contract should be signed by the end of April.

PROGRAMME “ENERGY EFFICIENCY IN CENTRAL GOVERNMENT BUILDINGS“ - CEB

Project description: The programme "Energy efficiency in Central Government Buildings,, (CEB loan 40 mill EUR+1,12 mill EUR TA) aims to fulfill the obligation that the Republic of Serbia has as the Energy Community member, and refers to the implementation of Article 5 of the Energy Efficiency Directive 2012/27/EU. The minimum requirements for CGBs after renovation were adopted by the Government of the Republic of Serbia with a special conclusion. The programme envisages energy renovation of up to 28/56 CGBs. The total area of the buildings included is 208,000 m².

Programme implementation period: 1 June 2020 – June 2026

Expected annual energy savings: 30%

Expected CO2 emissions: 20%

Commencement of works: beginning of 2024

Completion of works: end of 2028

Status: finalized geological explorations for Palace of Serbia and SIV 3. 5 DEPs approved and 20 more in the finalization stage. Tenders under way for 3 design of 3 buildings.



NATIONAL PROGRAMME FOR ENERGY RENOVATION OF BUILDINGS OF PUBLIC IMPORTANCE IN LOCAL GOVERNMENT UNITS - EEA

The Administration for Financing and Encouraging Energy Efficiency (EAE) implements the National Programme for Energy Renovation of Public Buildings in LSGUs.

Within the **Public call initiated in 2022**, 38 projects were selected for financing including energy renovation of 16 primary schools, 8 municipal buildings, 5 cultural centers, 3 kindergartens, 2 faculties, Centre for Social Work, indoor swimming pool, the installation of photovoltaic - solar power plant on the land belonging to the water utility company and the project for improving public lighting energy efficiency

Funded measures: Improvement of thermotechnical systems (installation of circulation pumps and thermostatic radiator valves, electronic programmable thermostatic calorimeter heads, heat accumulators, including the purchase biomass boilers), building thermal envelope (replacement of the facade, doors and windows, installation of thermal insulation on the external walls of the building, etc.) and installation of solar panels for sanitary hot water.

Expected annual energy savings: 9 million kWh

Expected CO2 emissions reduction: 4,500 tons per year

Start of the works: July 2022

End of the works: July 2023



NATIONAL PROGRAMME FOR ENERGY RENOVATION OF RESIDENTIAL BUILDINGS, FAMILY HOUSES AND APARTMENTS - EEA

Public call from 2022: Total of 151 local self-government units included - 20.000 citizens

Financing (RSD): 34 mil EUR

EEA: 8.8 mil EUR **LSGUs:** 8,2 mil EUR, **Citizens:** RSD 17 mill EUR

Subsidized measures: replacement of doors and windows, thermal insulation of external walls, roofs, ceilings, replacement of boilers with more efficient gas or pellet boilers, installation of heat pumps, solar collectors for water heating and installation of solar panels for the production of electricity for their own needs in the amount of up to 50% of the value of the works performed.

Expected annual energy savings: 196.276.070 kWh.

Expected CO2 emissions reduction: 87.913 t



NATIONAL PROGRAMME FOR ENERGY RENOVATION OF FAMILY HOUSES WITH THE **INSTALLATION OF SOLAR PANELS** FOR THE PRODUCTION OF ELECTRICITY FOR THEIR OWN NEEDS

Public call in the end of 2021: 37 LSGUs participate in the programme. **Approximately 700 households** applied for the subsidy programme

Investment value: 3,3 mil EUR

The expected annual electricity production: 3,000 MWh

Annual Reduction of CO2 emissions: 3,300 tons

Subsidies: EEA and LSGU 50% of the investment, citizens 50% .

Measure: the installation of up to 6 kWh solar power system.

Status: works have been conducted in **211 households**.

Start of the works: November 2021

End of the works: June 2023



ENERGY EFFICIENCY PROJECTS IN RESIDENTIAL BUILDINGS

CLEAN ENERGY AND ENERGY EFFICIENCY FOR CITIZENS IN SERBIA – SURCE - WB

Description of activities: The goal is to improve the availability of energy efficiency, sustainable heating and solar panels for households in Serbia by providing incentives to citizens for the installation of building envelope insulation and the replacement of doors and windows, the replacement of stoves and boilers with more efficient ones and transition to energy sources with lower emission of harmful gases, as well as installation of solar collectors and photovoltaic panels.

In the initial phase, incentives will be awarded through the same mechanism that has been implemented so far by the Directorate for Financing and Encouraging Energy Efficiency, with a novelty that packages of more comprehensive measures would be offered with a higher percentage of incentives.

The project envisages the improvement of this mechanism or the establishment of new mechanisms in cooperation with the World Bank in the following period. The start of project implementation is planned for the first half of 2023 when the first public call is expected. The project is planned to last 5 years.

Financing: 44,9 mil EUR from IBRD-WB loan (ratified by the RS Assembly in December 2022)

Savings

Expected annual energy savings: 430.000.000 kWh.

Expected CO2 emissions reduction: 270.000 t



Energy Refurbishment of multi-family residential buildings connected to the district heating systems - Public ESCO Project - EBRD

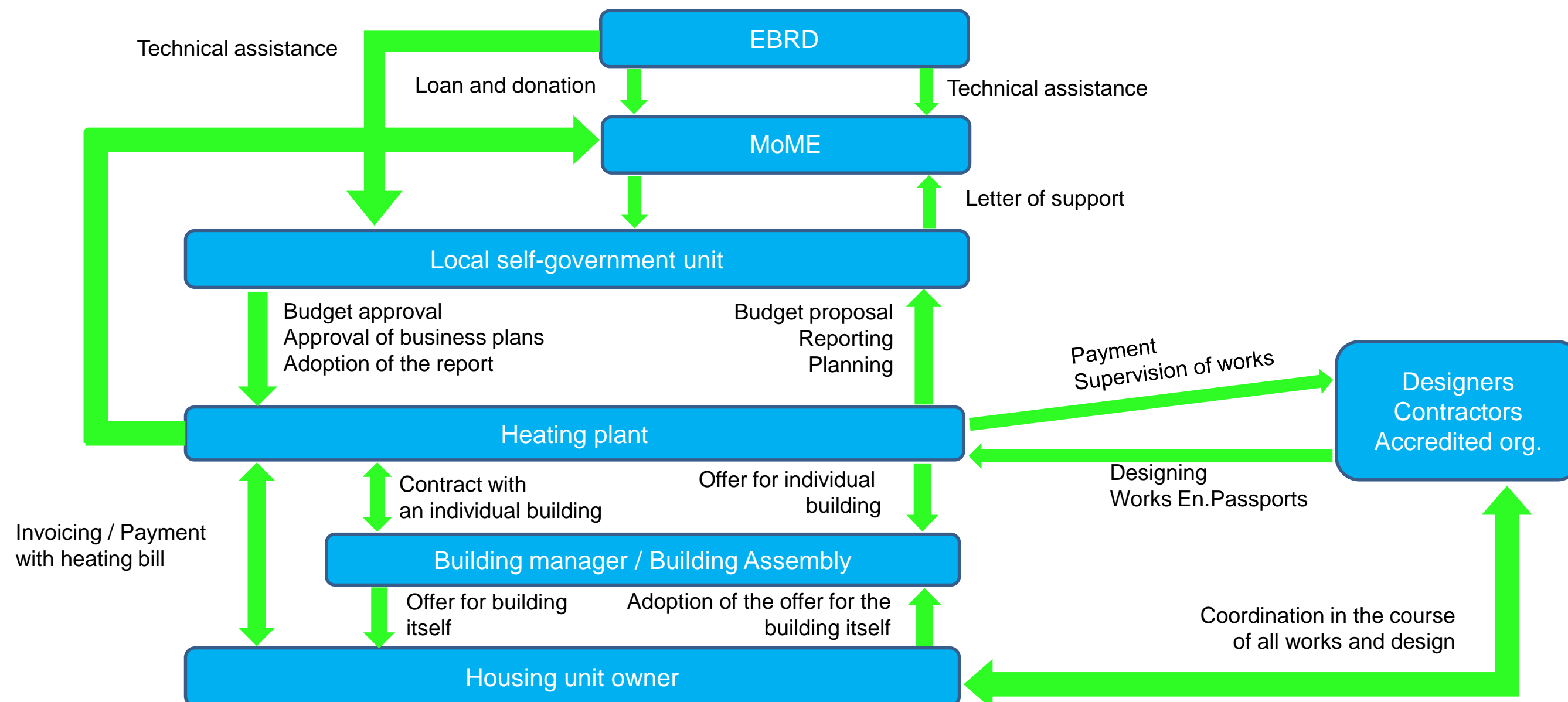
Project description: The project will enable the improvement of energy efficiency in buildings connected to district heating systems with a special focus on multi-family buildings. The project should enable the conditions for switching to consumption based billing (CBB) in those cities and district heating systems that still charge for heat on a lump sum basis. A significant part of the project will be financed from the savings achieved by the energy rehabilitation of the buildings and the transition to billing according to consumption. Direct energy savings in the refurbished buildings are expected to be up to 35%. However, this project should enable all DH systems to transfer to CBB of all connected consumers. Usual effect of transfer to CBB is consumption decrease of at least 10%.

Participating 20 municipalities: Beograd, Čačak, Jagodina, Kladovo, Kragujevac, Kraljevo, Leskovac, Negotin, Niš, Novi Pazar, Novi Sad, Pančevo, Pirot, Stara Pazova, Subotica, Trstenik, Užice, Valjevo, Vranje and Zrenjanin.

Estimated project value: EUR 62.5 million (EUR 50 million development loan from EBRD, EUR 12.5 million donation expected from EU and SECO funds)

Planned completion of the Feasibility Study with energy audits: Q3 2023

Expected commencement of works: 2024



PROJECT – BETTER ENERGY - USAID

Project description: In cooperation with three local heating plants in Knjaževac, Sombor and Niš, the project will contribute to the significant improvement of the energy efficiency of the heating plants and district heating. Project will support EE investments in 5 multifamily buildings in Valjevo and will provide TA for removing barriers for EE in Serbia. Funding is provided by U.S. Agency for International Development USAID

DHP:

DHP Sombor: Automatization and optimization of the system for the power plant with SCADA system for 17 substations. Estimated energy savings – 4,142 MWh/a

DHP Niš: Distribution Network calibration and system leak reduction. Estimated energy savings – 853 MWh/a

DHP Knjaževac: Optimization and modification of equipment in a heating substation in the Kindergarten “Bajka” - estimated energy savings – 1.300 MWh/a

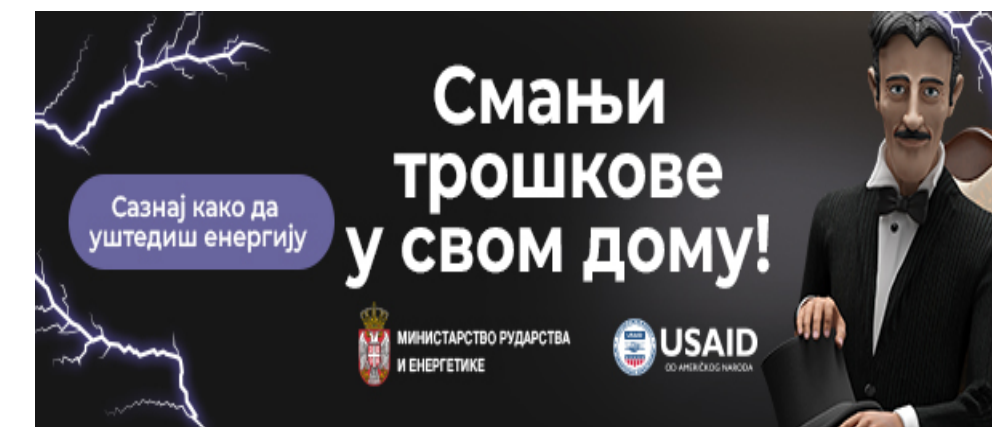
Commencement of works: July 2022

Completion of works: October 2022



MAB's:

- The Project supported financialy piloting implementation of EE project in multy family buildings which submitted application to Directorate of financing and promoting energy efficiency(EEA)
 - Instalation of 10 cm of insulation on all 5 buildings
 - Total investment: 91.000 USD, BE support 31%, other costs coverd by the EEA, LSGU and MABs
 - Energy savings 37.6% (54,828 kWh)



Awareness:

Description of activities: **A large national campaign called Nikola Tesla**, aimed at informing the population of Serbia about energy efficiency and methods of reducing heat and electricity consumption, started at the beginning of 2023.

ONGOING PROJECTS IN DISTRICT HEATING SYSTEMS

PROJECT “Rehabilitation of District Heating System in Serbia - Phase V“ - KfW

Project description: The project is the fifth phase of the successful Project of the same name, which started in 2001 as part of the financial cooperation between Germany and Serbia.

Within the previous four phases of the Project, a total of 22 heating plants were reconstructed through 130 individual investments worth EUR 130 million in total.

Project aims to rehabilitate heating plants, increase energy efficiency by at least 4.6% (estimated savings of fuel consumption in production facilities: 36.863 MWh/a), achieve more stable heating, which will result in reduction of harmful gas emissions (11,703 t CO₂ per year), which will be of great benefit for the population and environment.

A total of 7 heating plants participate in Phase V: Belgrade, Bor, Jagodina, Leskovac, Negotin, Niš and Senta.

Beginning of the preparatory phase: 29 June 2020

Commencement of works: May 2023

Completion of the Project: 30 December 2024



Programme “Development of a Biomass Market in the Republic of Serbia (Component 1)“ - KfW

Project description: use of renewable energy sources (biomass and geothermal) in selected heating plants in the Republic of Serbia.

The first phase is in the process of implementation, in which **four heating plants received funds:** Priboj, Mali Zvornik, Novi Pazar and Majdanpek.

Funding: The total amount is EUR 27 million, of which: a EUR 20 million loan from the German Development Bank KfW, a EUR 5 million donation from the Government of the Swiss Confederation and a EUR 2 million donation from the Government of the Federal Republic of Germany

Commencement of works: June 2018

Completion of works: end of 2024

So far finished DH plants in:

Priboj: installed capacity: biomass boiler 8 MW and LFO boilers 2x7,5 MW (CO₂ reduction 6060 t)

Mali Zvornik: installed capacity: biomass boilers 2x0,9 MW and gas boiler 2,5 MW (CO₂ reduction 830 t)

Novi Pazar: installed capacity: biomass boiler 8 MW and gas boilers 4,5+7,8 MW (CO₂ reduction 5950 t)

Majdanpek: planned capacity: biomass boilers 3x1MW and gas boiler 5 MW (CO₂ reduction 6400 t)

Second phase in preparation will cover 4 DHP expected to start end of 2024.



PROJECTS IN DISTRICT HEATING in the preparation

PROJECT “Renewable Energy Sources in District Heating Systems in Serbia - Phase 1“ – ReDE - EBRD

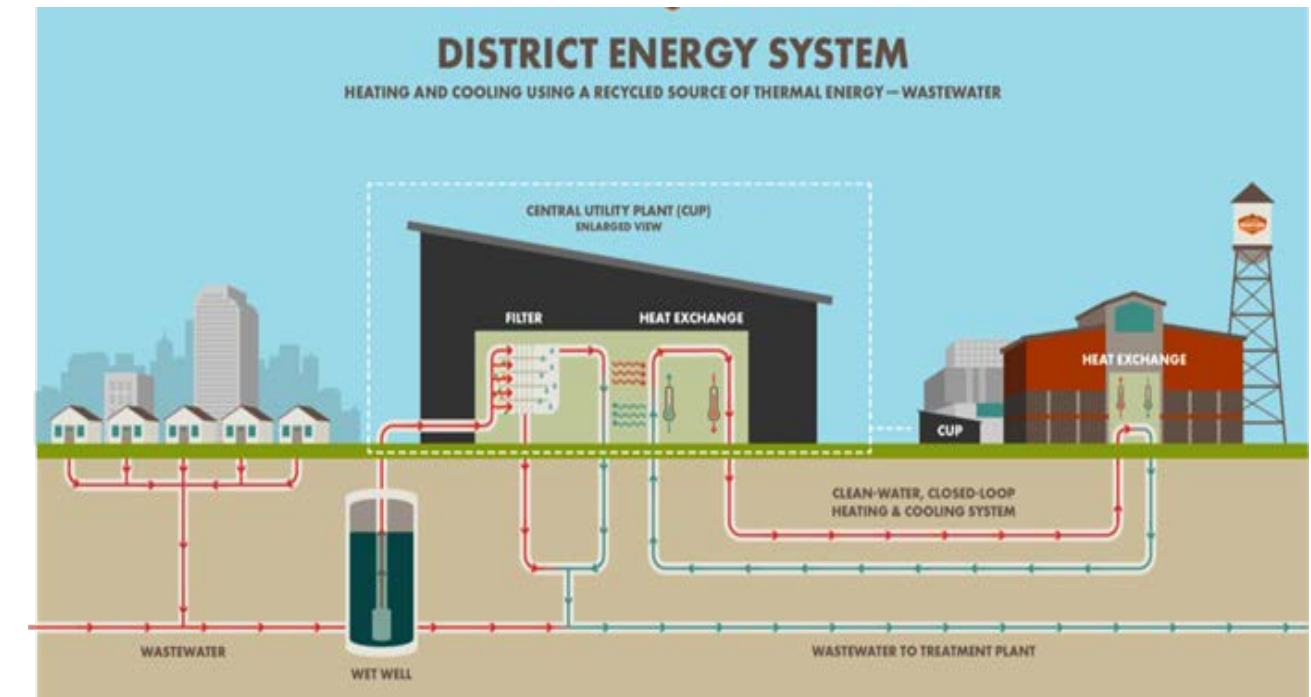
Project objective: Initiating a large number of investments in the district heating sub-sector, which will result in the utilisation of its enormous potential in the process of decarbonization of Serbia.

Results of the **Rapid Assessment Study**, financed by the EBRD and conducted in the period June 2021 - April 2022, was used as a basis for considering possibilities of applying green technologies (primarily solar, geothermal and heat pumps) in district heating systems in 11 cities in Serbia.

Estimated project value: 40.5 mil. EUR (of which 37.5 mil. EUR refers to investments that will be financed with 30 mil. EUR EBRD Loan and a 7.5 mil. EUR donation provided by SECO through the EBRD, and 3 mil. EUR donation of the REEP through the EBRD for technical support (consulting services) of MRE).

Expected commencement of works: 2024.

Expected annual reduction of CO2 emissions: 25.000 t/a



PROJECT “Solar Energy in District Heating Systems in Serbia“ – KfW

Estimated project value: EUR 60 million (EUR 40 million development loan from KfW, EUR 20 million donation from EU funds)

Planned completion of the Preliminary Feasibility Study: Q2 2023

Expected commencement of works: 2026

Expected annual reduction of CO2 emissions: 19,800 t (of which 4,100 t in Belgrade and 15,700 t in Bor)



Thank you for your attention!