



SUSTAINABLE ENERGY DEVELOPMENT AGENCY

Project BGENERGY-1.001-0001 "Feasibility study of the use of hydroenergy potential of existing water supply systems and increasing the potential of existing small hydroelectric power plants in water supply system"

Funded by: Renewable Energy, Energy Efficiency and Energy Security Program under the Financial Mechanism of the European Economic Area 2014-2021

General conclusions of the activity “Collecting data on potential sites for hydropower in water supply systems in Bulgaria”

Tsvetomira Kulevska

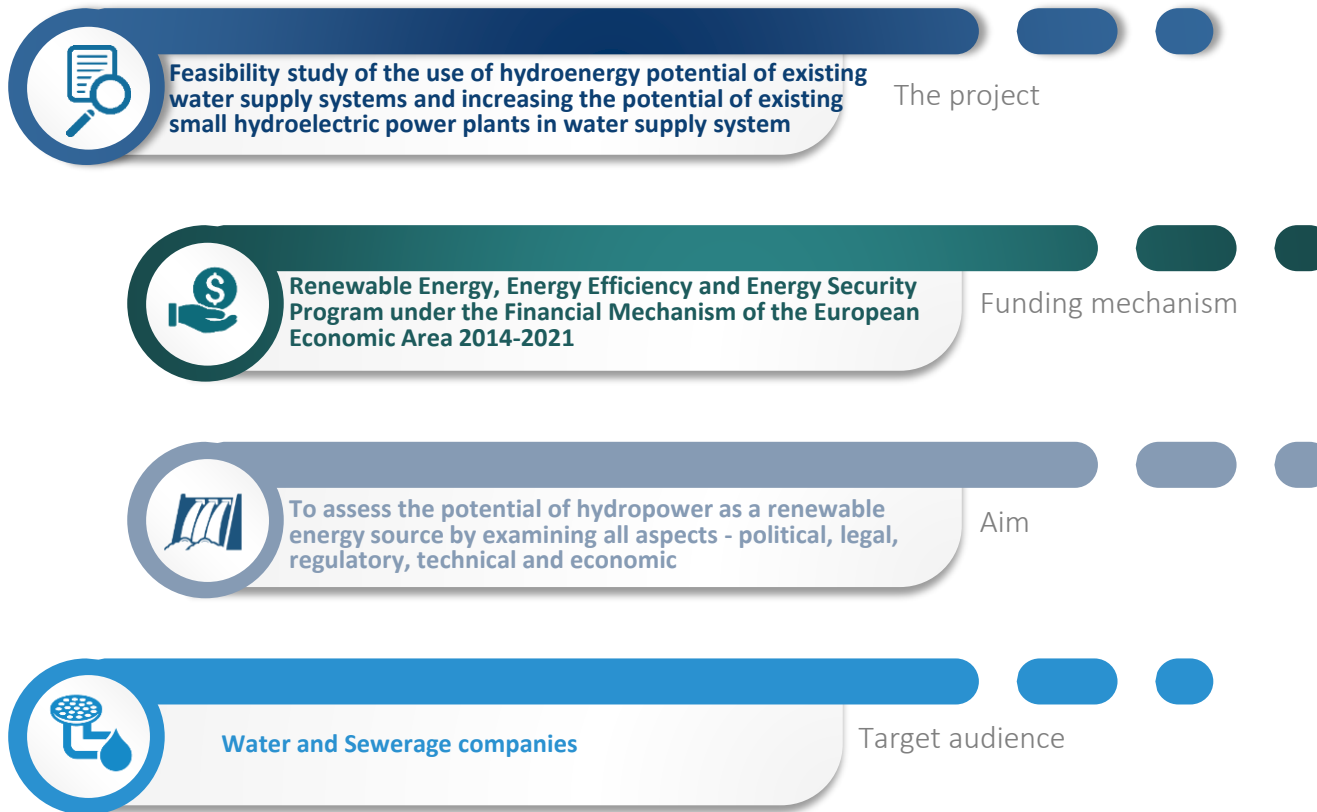
Iceland
Liechtenstein
Norway grants



Activity 4: Webinar/Web study visit, April 13, 2021



Project BGENERGY-1.001-0001 at a glance



Beneficiary: Sustainable Energy Development Agency (SEDA), Bulgaria

Donor project partner: Norwegian Water Resources and Energy Directorate (NVE), Norway

Program Operator: Ministry of Energy, Bulgaria



Project BGENERGY-1.001-0001 - activities

13 activities in total

1 year of implementation:
15.06.2020 – 14.06.2021

Training and dissemination

2 half-day courses for hydropower experts
on applicable RES technologies, *May 2021*
Publications in specialized magazines
Final conference, *June 2021*

Analizes

Regulatory framework
Pre-investment studies
Potential for hydropower utilization as a RES
in existing water supply schemes.

Data bases

Processed data, incl. hydrology; water
consumption management; technical
characteristics of the equipment, etc.

[Summary report „Construction/reconstruction and connection to the grid of a hydro power plant - summary of the regulatory framework”](#)

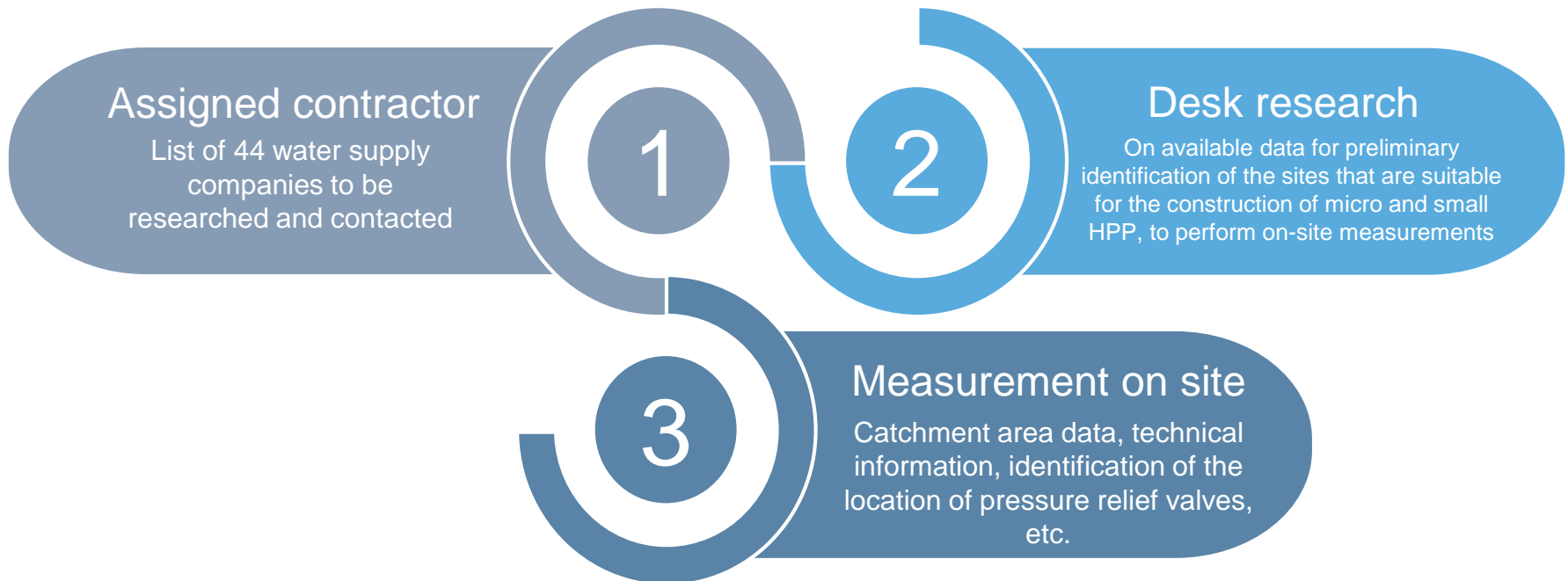
[Results of the review of the pre-investment studies by water supply and sewerage companies, available with the MRDPW](#)

[Results of the collection of data from the Water Supply and Sewerage Companies in the country](#)



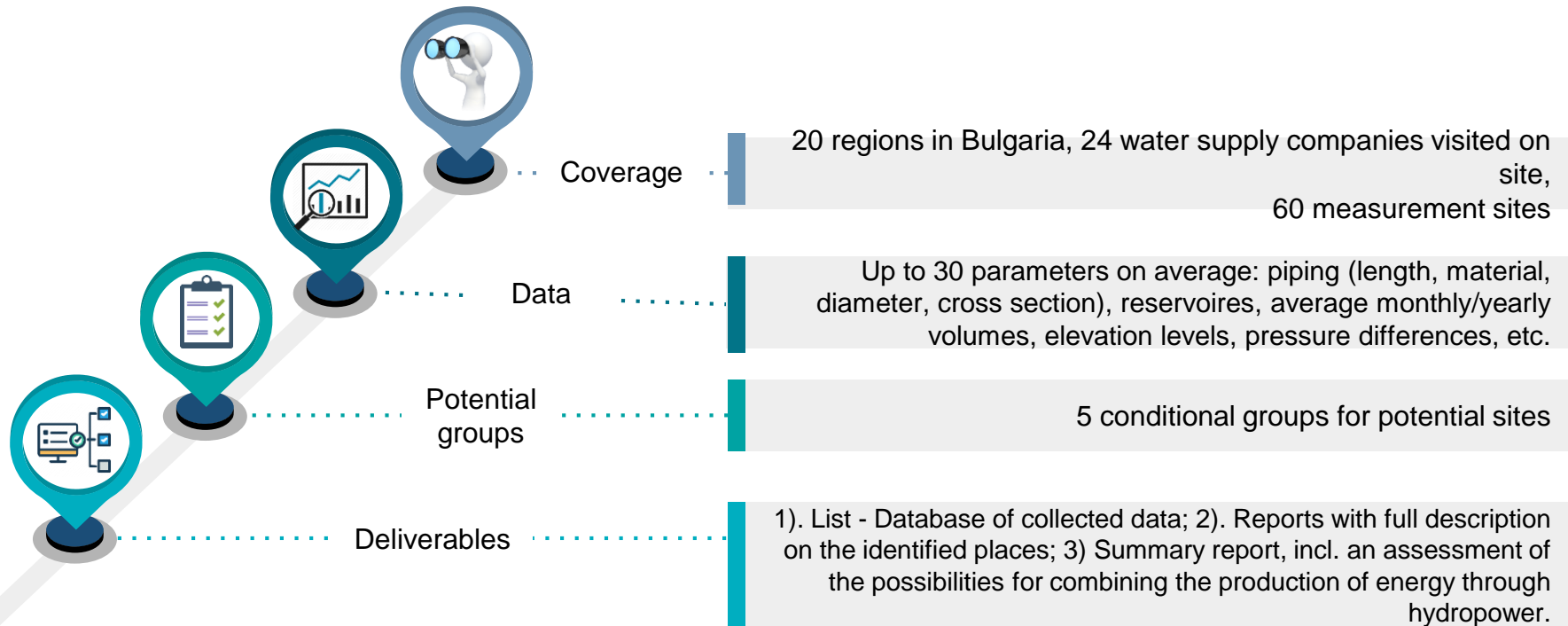
Activity 5: Collecting data including by measurements on site

The task





Results





General conclusions

5 conditional groups for sites with hydro energy potential

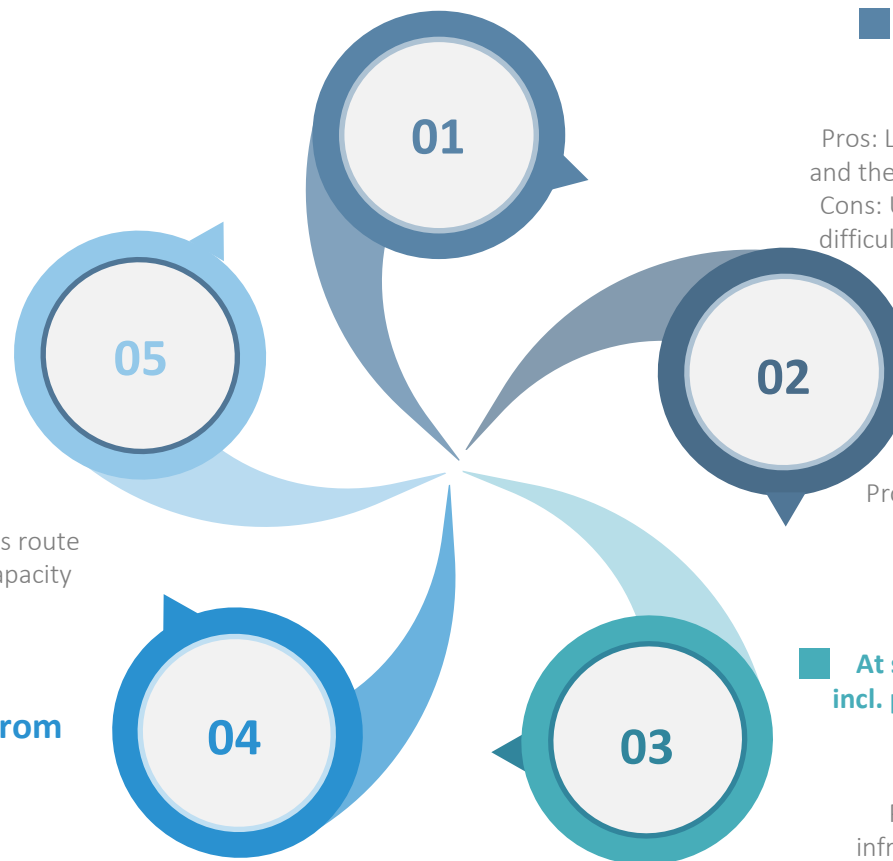
■ Increasing the capacity of existing HPPs in the water supply network 2 sites

Pros: Reconstruction of existing HPP increases capacity significantly

Cons: New pipeline and change of its route needed. New turbines with bigger capacity needed.

■ In case of water intake from dams 3 sites

The advantages prevail. Appropriate infrastructure is available.



■ At the relief shafts of the supply pipelines 21 sites

Pros: Large deviation from the natural terrain and the possibility to realize significant power.
Cons: Usually located in mountainous terrain, difficult to access, lack of good infrastructure, and sometimes lack of electricity.

■ At pressure regulators in the distribution network 15 sites

Pros: Usually located in settlements with available infrastructure and electricity network.

Cons: Relatively small power

■ At supply pipelines pouring into tanks, incl. pressure tanks, at pumping stations and drinking water treatment plant 19 sites

Pros: Same as the relief shafts, also the infrastructure and electricity transmission network.

Cons: The pipeline has to be reconstructed, which is a significant investment.

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Thank you!



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