

Iceland  
Liechtenstein  
Norway grants



NVE



<b>Grant Contract</b>	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 systems"
<b>Financed by</b>	Renewable Energy, Energy Efficiency and Energy Security Program, financed under the Financial Mechanism of the European Economic Area 2014-2021.
<b>Beneficiary name</b>	Sustainable Energy Development Agency (SEDA)
<b>Donor project partner</b>	Norwegian Water Resources and Energy Directorate (NVE), Norway
<b>ACTIVITY 3</b>	Collection of data from the Water Supply and Sewerage Companies in the Country According to the Identified Check-List
<b>Name of the document</b>	Results of the collection of data from the Water Supply and Sewerage Companies in the country
<b>Date:</b>	15 September 2020
<b>Date of last revision:</b>	12 October 2020

**CONTENTS:**

I. Description of the activities ..... 3

II. List of WSS companies that were approached with information requests ..... 3

III. Summary of facts..... 3

IV. List of parameters ..... 4

V. Identified potential companies for ascertainment of facts ..... 4

Appendix 1: List of the WSS companies to which information requests and questionnaires were sent. .... 5

Appendix 2: Summary list of the parameters received from the WSS companies..... 11

## I. Description of the activities

The activity consists in the collection of data from the water supply and sewerage (WSS) companies in the country according to the identified check-list, by means of sending questionnaires aiming to investigate the feasibility of using the hydroenergy potential in the existing water supply systems and enhancing the potential of existing small hydroelectric power plants in the water supply systems. The questionnaire was sent to 44 WSS companies of state, municipal and mixed (state and municipal) ownership, by SEDA letter No. PД-07-202/02.07.2020. The companies were provided the details of the contact person from the project team, for additional information and providing assistance in filling in the questionnaire. In addition, SEDA asked the Ministry of Regional Development and Public Works and the Bulgarian WSS Holding EAD for assistance in establishing contacts with the WSS companies. In order to facilitate the access and ensure better operability, the questionnaire was published on SEDA website in the dedicated [project section](#).

## II. List of WSS companies that were approached with information requests

In relation with implementing the activity, questionnaires were sent to potential WSS companies of state and/or municipal ownership. More than 30 phone calls were made in the course of collecting the information, for giving additional guidance on filling the questionnaires. A list of the WSS companies to which information requests and questionnaires were sent is included in [Appendix 1](#).

## III. Summary of facts

Information has been collected about potential locations identified by the respective companies, including flow, head, type and dimensions of the pipelines, as well as the potential for implementing particular projects. Information was received about particular preliminary studies on the construction of small hydropower plants, including detailed analyses of the technical potential of the particular systems. Answers were received from some of the WSS companies approached with the questionnaire, informing that following the analysis of their systems, they concluded that no appropriate infrastructure is available.

#### IV. List of parameters

[Appendix 2](#): Summary list of the parameters received from the WSS companies

#### V. Identified potential companies for ascertainment of facts

The information collected from the questionnaires received by SEDA is summarised in Appendix 2. Due to difficulties experienced by the WSS companies in filling in the questionnaire, e.g. insufficient available data, the information collected may not be used for precise identification of locations with hydroenergy potential. For this purpose, it shall be necessary to make real measurements at particular sections, to identify the actual potential to install SHPPs, which is the subject of performing Project Activity 5.

Appendix 1: List of the WSS companies to which information requests and questionnaires were sent.

No.	Province	WSS operator	Address	Company ownership	Territorial coverage
1	Blagoevgrad	WSS EOOD, town of Blagoevgrad	3, Anton Chehov str.	100% state ownership	Blagoevgrad, Simitli, Razlog, Belitsa, Yakoruda, Stramiani, Bansko, Gotse Delchev, Garmen, Satovcha, Hadzhidimovo, Petrich
2	Blagoevgrad	WSS EOOD, city of Petrich	2, Exarh Yosif str.	100% municipal ownership	Petrich municipality
3	Blagoevgrad	WSS Kresna EOOD, town of Kresna	96, Makedonia str.	100% municipal ownership	Kresna
4	Blagoevgrad	Uvex EOOD, town of Sandanski	9, Asen Hadzhisivilev str.	100% municipal ownership	Sandanski
5	Burgas	WSS EAD, city of Burgas	3, General Vladimir Vazov str.	100% state ownership	Burgas, Aytos, Kameno, Karnobat, Malko Tarnovo, Nesebar, Pomorie, Primorsko, Ruen, Sozopol, Sredets, Sungurlare, Tsarevo
6	Varna	WSS Varna OOD, city of Varna	33, Prilep str.	51% state / 49% municipal ownership	Varna, Avren, Aksakovo, Beloslav, Byala, Vetrino, Valchi Dol, Devnya, Dolni Chiflik, Dalgopol, Provadia, Suvorovo
7	Veliko Tarnovo	WSS Yovkovtsi OOD, town of Veliko Tarnovo	30, P.K. Yavorov str.	51% state / 49% municipal ownership	Veliko Tarnovo, Gorna Oriahovitsa, Elena, Zlataritsa, Lyaskovets, Pavlikeni, Polski Trambesh, Strazhitsa, Suhindol, Svishtov

No.	Province	WSS operator	Address	Company ownership	Territorial coverage
8	Vidin	WSS Vidin EOOD, town of Vidin	18, Shiroka str.	100% state ownership	Vidin, Belogradchik, Boynotsa, Bregovo, Gramada, Dimovo, Kula, Makresh, Novo Selo, Ruzhintsi, Chuprene
9	Vratsa	WSS OOD, town of Vratsa	2, Aleksandar Stamboliiski str.	51% state / 49% municipal ownership	Vratsa, Borovan, Byala Slatina, Kozloduy, Krivodol, Mezdra, Mizia, Oryahovo, Roman, Hayredin
10	Gabrovo	WSS OOD, city of Gabrovo	6, Treti Mart Blvd.	51% state / 49% municipal ownership	Gabrovo, Dryanovo, Tryavna, Sevlievo
11	Dobrich	WSS OOD, town of Dobrich	59, Treti Mart Blvd.	100% state ownership	town of Dobrich, Balchik, General Toshevo, Dobrichka, Kavarna, Krushari, Tervel, Shabla
12	Kardzhali	WSS OOD, town of Kardzhali	88, Bulgaria Blvd.	51% state / 49% municipal ownership	Kardzhali, Ardino, Dzhebel, Kirkovo, Krumovgrad, Momchilgrad, Chernoochene
13	Kyustendil	Kyustendilska Voda EOOD, town of Kyustendil	15, Tsar Osvoboditel str.	100% state ownership	Kyustendil, Bobov Dol, Boboshevo, Kocherinovo, Nevestino, Rila, Treklyano, Dupnitsa
14	Kyustendil	WSS Panichishte EOOD, Sapareva Banya	1, Germaneya str.	100% municipal ownership	Sapareva Banya
15	Kyustendil	WSS OOD, town of Dupnitsa	9, Neofit Rilski str.	100% municipal ownership	Balanovo, Bistritsa, Blatino, Gramade, Delyan, Dzherman, Dyakovo, Krayni Dol, Krainitsi, Kremenik, Palatovo, Piperevo,

No.	Province	WSS operator	Address	Company ownership	Territorial coverage
					Samoranovo, Topolnitsa, Cherven breg and Yahinovo villages
16	Lovech	WSS AD, town of Lovech	1A, Rayna Knyaginya str.	51% state / 49% municipal ownership	Lovech, Apriltsi, Letnitsa, Lukovit, Teteven, Ugarchin, Yablanitsa
17	Lovech	WSS Steneto EOOD, town of Troyan	213 Hristo Botev str.	100% municipal ownership	Troyan
18	Montana	WSS OOD, town of Montana	11, Aleksandar Stamboliiski blvd.	51% state / 49% municipal ownership	Montana, Boychinovtsi, Brusartsi, Valchedram, Varshets, Georgi Damyanovo, Lom, Medkovets, Chiprovtsi, Yakimovo
19	Montana	WSS Berkovitsa EOOD, Berkovitsa	2, Anton Strashimirov str.	100% municipal ownership	Berkovitsa
20	Pazardzhik	Water Supply and Sewerage - in liquidation EOOD	6, 2nd January str.	100% state ownership	Pazardzhik, Lesichovo, Septemvri, Panagyurishte, Strelcha
21	Pazardzhik	WSS-S EOOD, town of Strelcha	7, Velko Ivanov str.	100% municipal ownership	Strelcha
22	Pazardzhik	WSS-P EOOD, town of Pazardzhik	7, Aleko Bogoridi str.	100% municipal ownership	town of Panagyurishte, villages of Elshitsa, Levski, Popintsi, Bata, Banya, Oborishte, Poibrene, Panagyurski kolonii
23	Pazardzhik	Infrastruy EOOD, Bratsigovo	33, Vasil Petleshkov str.	100% municipal ownership	Bratsigovo

No.	Province	WSS operator	Address	Company ownership	Territorial coverage
24	Pazardzhik	WSS-Batak EOOD, town of Batak	22, Partizanska str.	100% municipal ownership	Batak
25	Pazardzhik	WSS - Belovo EOOD, town of Belovo	1, Yadenitsa str.	100% municipal ownership	Belovo
26	Pazardzhik	VKTV EOOD, town of Velingrad	1A, Academician Ivan Pavlov str.	100% municipal ownership	Velingrad
27	Pazardzhik	VKS EOOD, town of Peshtera	14-16, Dimitar Gorov str.	100% municipal ownership	Peshtera
28	Pazardzhik	VKTV EOOD, town of Rakitovo	23, Dimo Hadzhidimov str.	100% municipal ownership	Rakitovo
29	Pernik	WSS OOD, town of Pernik	11, Sredets art.	51% state / 49% municipal ownership	Pernik, Breznik, Radomir, Zemen, Tran
30	Pleven	WSS EOOD, town of Pleven	25, San Stefano str.	100% state ownership	Pleven, Belene, Gulyantsi, Dolna Mitropolia, Dolni Dabnik, Iskar, Levski, Nikopol, Pirdop, Cherven Bryag, Knezha
31	Plovdiv	WSS EOOD, city of Plovdiv	250, 6 September blvd.	100% state ownership	Plovdiv, Asenovgrad, Brezovo, Kaloyanovo, Karlovo, Krichim, Kuklen, Laki, Maritsa, Perushtitsa, Parvomay, Rakovski, Rodopi, Sadovo, Stamboliyski, Saedinenie, Hisarya
32	Razgrad	WSS OOD, town of Isperih	1, Borovets str.	51% state / 49% municipal ownership	Isperih, Samuil
33	Razgrad	Water Supply - Dunav EOOD, town of Razgrad	3A, Slivnitsa str.	100% state ownership	Razgrad, Loznitsa, Tsar Kaloyan, Kubrat, Zavet



No.	Province	WSS operator	Address	Company ownership	Territorial coverage
34	Ruse	WSS OOD, town of Ruse	6, Dobrudzha str.	51% state / 49% municipal ownership	Ruse, Borovo, Byala, Vetovo, Dve Mogili, Ivanovo, Slivo Pole, Tsenovo
35	Silistra	WSS OOD, town of Silistra	19, Baba Tonka str.	51% state / 49% municipal ownership	Silistra, Alfatar, Glavnitsa, Dulovo, Kaynardzha, Sitovo, Tutrakan
36	Sliven	WSS Sliven OOD, town of Sliven	27, 6-ti Septemvri str.	51% state / 49% municipal ownership	Sliven, Kotel, Nova Zagora, Tvarditsa
37	Smolyan	WSS OOD, town of Smolyan	2, P.R. Slaveykov str.	100% state ownership	Smolyan, Banite, Borino, Devin, Dospat, Zlatograd, Madan, Nedelino, Rudozem, Chepelare
38	Sofia - province	WSS EOOD, city of Sofia	15, Rozhen Blvd., city of Sofia, 1000	100% state ownership	Anton, Bozhurishte, Godech, Gorna Malina, Dolna Banya, Dragoman, Elin Pelin, Etropole, Zlatitsa, Ihtiman, Koprivshitsa, Kostenets, Kostinbrod, Mirkovo, Pirdop, Pravets, Samokov, Svoige, Slivnitsa, Chavdar, Chelopech, Botevgrad
39	Staga Zagora	WSS EOOD, town of Staga Zagora	62A, Hristo Botev str.	100% state ownership	Stara Zagora, Bratya Daskalovi, Gurkovo, Galabovo, Kazanlak, Maglizh, Nikolaevo, Opan, Pavel Banya, Radnevo, Chirpan
40	Targovishte	WSS OOD, town of Targovishte	3, 29 January Blvd.	51% state / 49% municipal ownership	Targovishte, Antonovo, Omurtag, Popovo, Opaka

No.	Province	WSS operator	Address	Company ownership	Territorial coverage
41	Haskovo	WSS EOOD, town of Haskovo	Residential complex Orfey, 2, Sakar str.	100% state ownership	Haskovo, Ivaylovgrad, Lyubimets, Madtsarevo, Mineralni Bani, Svilengrad, Simeonovgrad, Harmanli, Stambolovo, Topolovgrad, Dimitrovgrad
42	Haskovo	WSS OOD, town of Dimitrovgrad	36, Zahari Zograf str.	51% state / 49% municipal ownership	Dimitrovgrad, Merichleri and the villages in Dimitrovgrad municipality
43	Shumen	WSS Shumen OOD, town of Shumen	1, Voin sq.	51% state / 49% municipal ownership	Shumen, Veliki Preslav, Venets, Varbitsa, Hitrino station, Kaolinovo, Kaspichan, Nikola Kozlevo, Novi Pazar, Smyadovo
44	Yambol	WSS EOOD, town of Yambol	20, Dr. Petar Branekov str.	100% state ownership	Yambol, Bolyarovo, Elhovo, Tundzha, Straldzha

## Appendix 2: Summary list of the parameters received from the WSS companies

Details of the water catchment area									
No.	WSS Company	Regulated and non-regulated lakes in the water catchment	Intake in the reservoir	Intake in the rivers	Intake in the water catchment area in km <sup>2</sup>	Annual flow to intake, m <sup>3</sup> /s and/or l/s/km <sup>2</sup>	Other reservoirs upstream the intake: Name, HRW, LRW, volume and water catchment area km <sup>2</sup>	Potential to increase the capacity of existing reservoirs	New reservoir opportunities
1	Water Supply and Sewerage OOD - Montana	The company is using only one reservoir, the Srechenska Bara, built on a dry ravine and only intended for water supply.	Highest regulated water level (HRW) 449.30 lowest regulated water level (LRW) 418.00	5 l/s - 13,000 m <sup>3</sup> /month - the water is discharged into a dry ravine, not in a river, and there is no independent inflow from elsewhere	840 decares	Average annual 1.6 m <sup>3</sup> /s	Water catchment area - 38.95 km <sup>2</sup>	none	none
2	Infrastry EOOD	no lakes				0.025 m <sup>3</sup> /s	none	no	
3	WSS Berkovitsa EOOD			5 river catchments of Alpine type 486,288 m <sup>3</sup> /y - permitted water volume	15.44 l/s total for all 5 water catchments				
4	WSS EOOD Staga Zagora								

Technical information in case the waterway (pipe) from the main water intake outlet ends in a pond with daily regulation

N o.	WSS Company	Type of pipe (wood, iron, pig iron, plastic reinforced with glass fibres, other) and pressure	Dimensions of pipe in millimetres (mm)	Area of cross section and length of canal (if applicable), m <sup>2</sup> and m	Length of pipe from the intake to the pressure reduction valve or to the pond, m	Normal water level in pond, above sea level - msl
1	Water Supply and Sewerage OOD - Montana	Steel	1,200	no	40 m	449
2	Infrastry EOOD	none				
3	WSS Berkovitsa EOOD	Asbestos - cement pipes and HDPE pipes PN 10 bar	DN 90 to DN 300		Head pipeline - 98 km total length	
4	WSS EOOD Staga Zagora	Steel	577		Up to relief shaft 1 - 630 Up to relief shaft 2 - 380	Up to relief shaft 1- level =70.8m Up to relief shaft 2- level =54.6m

		Technical information in case the waterway (pipe) from the main water intake outlet ends in a pond with daily regulation				Additional information		
No.	WSS Company	Type of pipe (wood, iron, pig iron, plastic reinforced with glass fibres, other) and pressure	Dimensions of pipe in millimetres (mm)	Area of cross section and length of canal (if applicable), m <sup>2</sup> and m	Length of pipe from the intake to the pressure reduction valve and the water treatment plant, m	Current water flow rate m <sup>3</sup> /s, m <sup>3</sup> /24 hours and/or m <sup>3</sup> /year	Closed down water supply systems. Are the existing structures useful for hydroelectric plants?	Plans for extension of the water supply systems
1	Water Supply and Sewerage OOD - Montana	no	no	no	no	45,000 m <sup>3</sup> /24 hours	none	none
2	Infrastroy EOOD	Pipe - iron, pig iron and plastic, pressure 4-6 atm	no	no	no		none	
3	WSS Berkovitsa EOOD							
4	WSS EOOD Stara Zagora	Steel				400-500 l/s		no

-----  
 -----  
 Translated under Contract РД 05-02-26/03.07.2020. The Bulgarian text of the report is approved by Ivaylo Aleksiev, Executive Director of SEDA – beneficiary of the BGENERGY-1.001-0001 Project