



Regional Action Plan for Energy Storage and Sector Coupling Bulgaria

Version Final

A stream of cooperation



The CSSC Lab project summary

The CSSC LAB project is being funded within the third call of the INTERREG DANUBE TRANSNATIONAL Programme of the European Commission, under the specific objective SO 3.2: Improve energy security and energy efficiency. It aims to contribute to the energy security and energy efficiency of the region by supporting the development of joint regional storage and distribution solutions and strategies for increasing energy efficiency and renewable energy usage.

The CSSC project targets medium-sized and smaller target cities in the Danube area, aiming to accelerate the up-take of energy storage and sector coupling solutions. To build up the capacities of municipalities and related city actors to assess, define and implement concrete implementation projects, the CSSC Lab project will:

- develop a set of model solution for typical urban CSSC use cases, together with a toolkit for the assessment of potential CSSC applications in terms of energy efficiency indicators, operational requirements, related business models and financing solutions
- a comprehensive capacity building programme for municipalities with local basic and advanced trainings, complementary webinars and individual city coaching sessions will be developed and piloted
- pilot investments will be established in four demo-centers in different locations in the project region to demonstrate the feasibility and performance of typical CSSC solutions
- a series of study visits and demo sessions will allow city representatives from all parts of the project region to learn from practical demo-cases implemented under Danube region framework conditions.

About this document

This document is part of OT.1 within T1.1 of the CSSC Lab project and will contribute to SO3. This document was prepared by Union of Bulgarian black Sea Local Authorities (UBBSLA) in cooperation with regional partners and Alba Local Energy Agency - ALEA – work package lead partner.

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1. General Information

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|-------------------------|---|
| Country: | Bulgaria |
| Region: | North east Bulgaria |
| Responsible partner(s): | Union of Bulgarian black Sea Local Authorities (UBBSLA) |

2. Aim of the Regional Action Plan

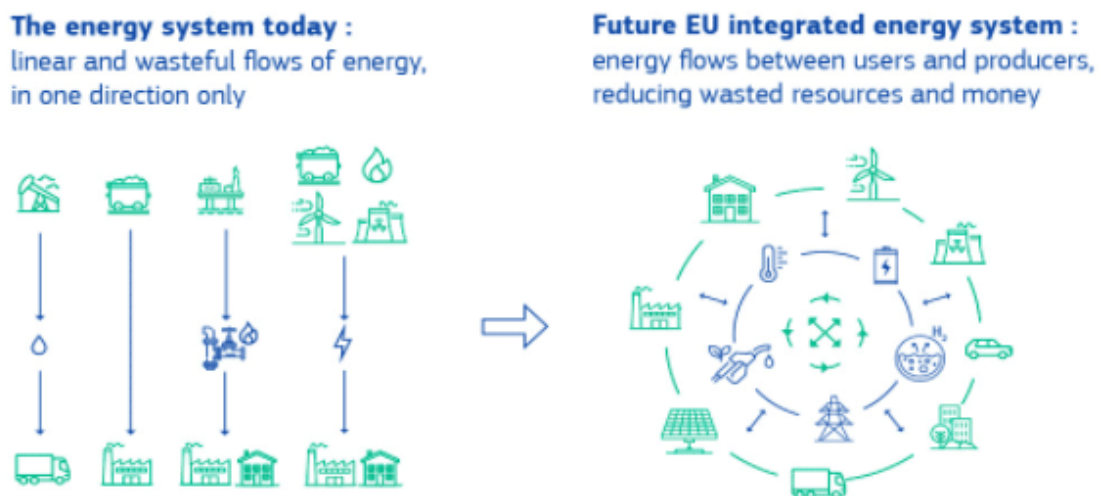
The aim of this document is to increase the net zero buildings in Bulgaria, mainly through BIPV (Building integrated PV), BESS (battery energy storage system), EMS (energy management system) Sector coupling – PV – DHW, PV-EVs, BESS-EVs.

3. CHAPTER 1: European, national and regional context

With the European Green Deal and the Paris Agreement's climate targets, the EU has committed itself to achieve a carbon-neutral economy by 2050. In order to meet these decarbonisation targets, increased electrification in all sectors is due to be the key development.

Financing opportunities will be available soon through National plan for recovery and sustainability - <https://www.nextgeneration.bg/14>

The energy system today is linear, the goal is to be integrated energy system.



Energy System Integration. Source: EU strategy on energy system integration, July 2020

The six pillars of the EU's ESI Strategy are:

1. A circular energy system, based on efficiency;
2. Increased electrification, based on renewable electricity sources;
3. Renewable and low-carbon fuels (incl. hydrogen) in hard-to-abate sectors;
4. Empowering consumers' choice
5. Infrastructure integration (mainly gas, electricity, heating and transport)
6. Digitalisation for a smarter interconnection

These pillars are the base which formed our goals in sector coupling.

4. CHAPTER 2: Engagement of decision makers and other key stakeholders in the region

The municipality in the region has signed the EU initiative "Covenantal of mayors". All of them have higher goals comparing the government goals for sustainable energy. All municipalities have developed sustainable energy and climate action plans. Last years the PV investment is on rise.

Stakeholders:

- Mayors and municipality administration;
- Energy agencies;
- Citizens;
- SME;

5. CHAPTER 3: SWOT analysis of the regional context

| PARTICIPATORY SWOT ANALYSIS OF THE REGIONAL CONTEXT IN BRINGING CSSC APPLICATIONS INTO REAL CASES | |
|--|--|
| INTERNAL FACTORS | |
| Strengths | Weaknesses |
| <ul style="list-style-type: none"> • Power grid coverage is very good; • Sunshine hours are more than 1700h/year, which makes PV very feasible; • There are Technical university Varna, who provides with specialist; | <ul style="list-style-type: none"> • There are not possibility to be prosumer in BG • There are no on stop desk for administrative needs; • Management of the electrical system making adoption of CSSC technologies difficult; |

| <ul style="list-style-type: none"> • The number of EVs is on rise; • Plenty of free roofs suitable for PV • Relative simple procedure for installation | <ul style="list-style-type: none"> • Lack of trust in CSSC technologies among of the society; • High cost for energy storage; |
|---|--|
| EXTERNAL FACTORS | |
| Opportunities | Threats |
| <ul style="list-style-type: none"> • Plan for reacquiescence and sustainability will finance CSSC solutions for private and SME; • There are secured money in the plan for big battery factory, which can reduce the energy storage price; • Possibility for new businesses and jobs; • Possibility for reducing the cost for energy through CSSC solutions; • New energy act which will allow producers | <ul style="list-style-type: none"> • The process of inflation might delay investment in CSSC solutions; • EU funds reach hard citizens and SME's |

6.CHAPTER 4: ACTIONS

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|-------------------------------------|---|
| Action 1 | Energy cooperatives in Bulgaria |
| Brief description | There are more than 5000 multifamily blocks in the region. All of these blocks are suitable for BIPV. The goal is to create energy cooperatives who use the roof for PV installation to cover their own needs of electricity. The second phase is to connect the PV system with BESS and charging stations for EVs. |
| Activities/ Implementation steps | Help desk for creating energy cooperatives; Analyses for possibility to implement PV-BESS CSSC technologies. Elaboration of project proposal applications Funding possibilities |

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|--------------------------|--|
| Timeframe | 2022-2023 |
| Milestones | First cooperatives - 2023 |
| Estimated costs | Organisational costs Staff costs Investment cost |
| Financing sources | EU finding Own finance |
| Estimated impact/results | 2 energy cooperatives |
| Actors involved | Private citizens, regional SME and municipalities |

| | |
|-------------------------------------|---|
| Action 2 | Introducing the first prosumer municipality |
| Brief description | The main role of the municipalities is to consume energy. On the other hand, a municipality has a lot of own building suitable for BIPV. Up to now it is not used. The project is to establish BIPV in at least one municipality. |
| Activities/ Implementation steps | Develop I analysis of possibility for BIPV system Estimated the necessary investment; Prepare funding project proposal to National eco trust fund Tender procedure Implementation |
| Timeframe | 2022-2023 |
| Milestones | Funding proposal submitted dec 2022 |
| Estimated costs | Organisational costs Staff costs Investment cost |
| Financing sources | EU finding Municipality finance |
| Estimated impact/results | 3 BIPV |
| Actors involved | Regional SME and municipalities |