



CSSC LAB Innovative city storage and sector coupling solutions for a greener Europe

Information brochure

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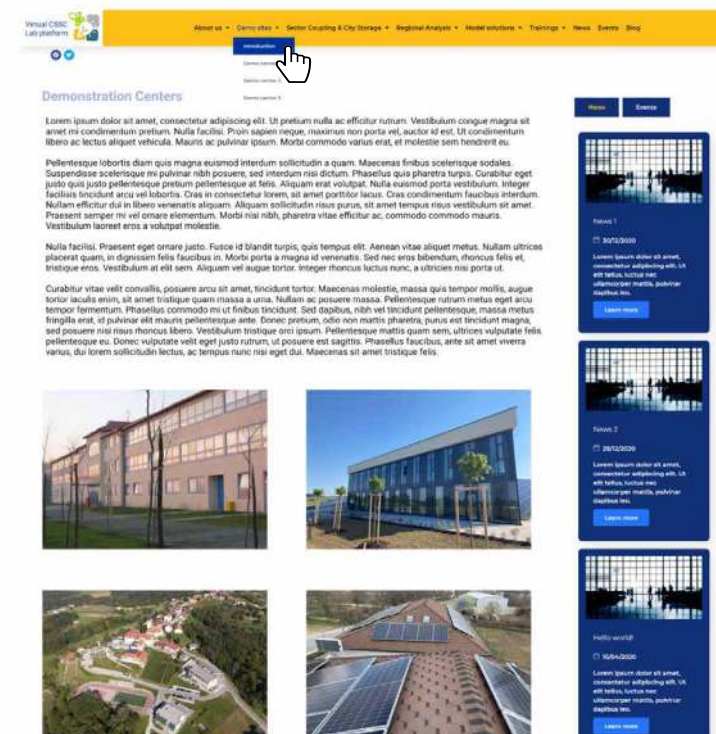
What is CSSC Lab?

City Storage and Sector Coupling Lab (CSSC Lab) is an INTERREG-financed project, which will run from July 2020 to December 2022. It tests and supports the roll-out of innovative city storage and sector coupling solutions at the municipal level in Europe. For this, it relies on the know-how of its **17 project partners** and **12 associated strategic partners**. Since the partnership is made up of representatives from 11 Danube region countries including the Western Balkans, it demonstrates the relevance of city storage and sector coupling solutions in a variety of contexts.

It is widely recognised that there is immense potential for city storage and sector coupling in small and medium-sized cities in Europe. However, for this potential to be seized, capacities must be built at municipal level. Equipping local administrations with the necessary skills to implement city storage and sector coupling solutions will help boost such initiatives. This in turn will enhance energy security and energy efficiency locally while equally contributing to meeting the EU's climate targets.

As part of the project, we have developed an online platform, which is open to the general public. Our CSSC Lab platform presents all relevant information relating to the project's four demo centres in Austria, Bulgaria, Croatia and Slovenia, in one joint virtual location. This makes it possible to create centre a transnational City Storage & Sector Coupling (CSSC) Lab for stakeholders to explore.

You can access the platform via the following link:
www.cssclab.eu



Find more at:

www.cssclab.eu



@cssclab

Learn more about city storage and sector coupling

CSSC Lab - Capacity building and training

CSSC Lab has developed a set of training modules related to city storage and sector coupling. In line with the knowledge level of the participant, basic and advanced content can be made available. The project also foresees individual coaching for interested parties.

The main target group for these training modules are small and medium-sized cities in the Danube Region. Each partner will implement trainings with municipal representatives and other city actors active in the urban energy systems (city administrations, utilities, energy projects developers etc.) in their respective region.

It is hoped that this will help foster the long-term replication of the city storage and sector coupling solutions already presented in the project. The trainings should help the target group understand, which solutions are most appropriate for their local context and encourage them to adopt these.

The following sets of trainings modules have been developed to cover the different aspects of sector coupling and energy storage:

Technical aspects of sector coupling and energy storage in an urban context

M1: Heat system: energy storage & sector coupling

– The first module in the series gives an overall overview of sector coupling and energy storage with a focus on the challenges of the EU energy strategy for the upcoming decades. It then concentrates on heating.

M2: Electric system: energy storage & sector coupling

– It presents electricity storage and sector coupling solutions with an emphasis on the applicability of the technologies at city level.

M3: Emerging technologies & sector coupling applications

– The module showcases innovative energy storage and sector coupling technologies.

M4: Use cases and good practice examples

– this module contains use cases and good practices collected in the partner regions.

Stroll around our demo sites!

Economic and managerial CSSC aspects

M5: Basic understanding of macro-economic energy market conditions

– The first in the series of economic modules provides an overview of EU energy markets, the Energy Union and the Green Deal.

M6: Micro-economic factors influencing economic efficiency of CSSC installations in urban settings

– This gives an overview of the electricity market in the EU with a focus on the specific situation in the partner countries.

M7: Economic assessment of practice examples

– This module focuses on the evaluation of CSSC projects, presenting different evaluation methods and examples. The second part of this module introduces a simple tool for economic assessments.

M8: Business models and financing solutions

– This module outlines different financing options for projects related to sector coupling and energy storage.

Stegersbach, Austria

The solar.one competence centre is an energy-plus office building, demonstrating cutting edge technology in the field of Photovoltaics (PV), building-integrated PV, energy storage, sector coupling and energy efficiency.



As part of the CSSC project, different storage and sector coupling equipment is being showcased in the solar.one building: battery storages (Li-Ion and Saltwater), thermal heat storages, sector coupling to E-Mobility (charging infrastructure) as well as coupling power2heat with heat pumps, and utilizing the activated building core as a thermal storage. The building is equipped with a building management system for real time monitoring in addition to a load and flexibility management software to ensure optimal utilization of the existing storage and sector coupling solutions.

The solar.one building is designed to be a lighthouse project for the optimal utilization of renewable energy sources and sustainable buildings. It is open for visits for anybody and group tours for schools, universities or municipalities can be arranged by contacting the building administration via info@solar.one.



Destrnik, Slovenia

The demo centre in Destrnik is located inside the building of a local Kindergarten. In its final form, the demo centre will be characterized by a battery storage in combination with a PV installation and E-charging station, all controlled in a way that enables the operation in the most optimal way. In Slovenia, individual battery storage is still not widespread, so the demo centre in Destrnik will also play an important promotional role in the region.



The demo centre is open for visits and the staff from the Municipality Destrnik and LEA Spodnje Podravje will be glad to guide you on the tour through the demo centre. For arrangements, please contact LEA Spodnje Podravje via e-mail at info@lea-ptuj.si.

Varna, Bulgaria

The Bulgarian demo centre showcases the use of solar energy and biomass for the meeting of all electricity and heating needs of an office building in Varna. Being able to achieve energy self-sufficiency and become the only energy positive building at local level, the demo site serves as an example to other building owners wishing to apply sector coupling and energy storage solutions in Varna.

Solar panels have been installed on the roof of the office building and the electricity generated is being stored in batteries. This is being used to meet the electricity needs of the building as well as for the charging of electric vehicles close-by. The biomass heating unit heats the building while the solar hot water PV system ensures that hot water is available.

The demo centre is open for visits and the staff will be glad to guide you on the tour through the demo centre. For arrangements, please contact via e-mail at energy@ubssla.org.



Zagreb County, Croatia

The demo centre provides a smart heating solution for a public building, namely a high school in the city of Zaprešić. It connects the high school to the local district heating system (HEP Toplinarstvo). This solution combines solar thermal collectors on a city-owned green field, a smart heating substation, heat storage in a public building and an advanced regulation system. Solar thermal collectors will provide high temperature solar energy for space heating and domestic hot water. When solar energy is available, it will be fed into the distribution network of main boiler room. The regulation system will regulate the delivery of the heat to public building.

The smart heating substation in the public building will enable the bidirectional exchange of solar thermal energy between the district heating distribution network and the direct heat consumption / heat storage.

The primary goal of this pilot project is to reduce greenhouse gas emissions and heating costs, as well as testing the advanced application of city storage and sector coupling solutions within an existing public building owned by Zagreb County. This pilot highlights the possibilities for cooperation between national energy companies and the state. Contact the site via info@regea.

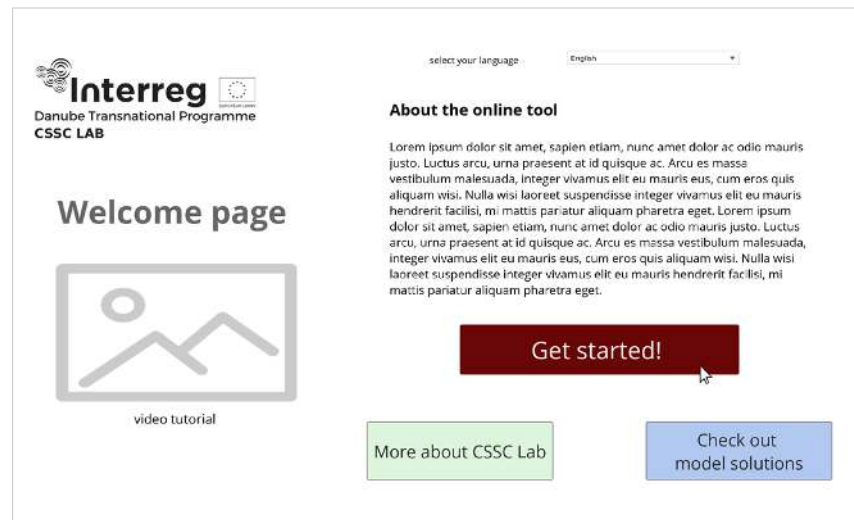


Find solutions that fit your needs

Small and medium sized municipalities in the Danube Region want to contribute to a reduction in CO₂ levels. They understand that a cut in CO₂ emissions also means substantial energy savings and lower expenses for municipalities.

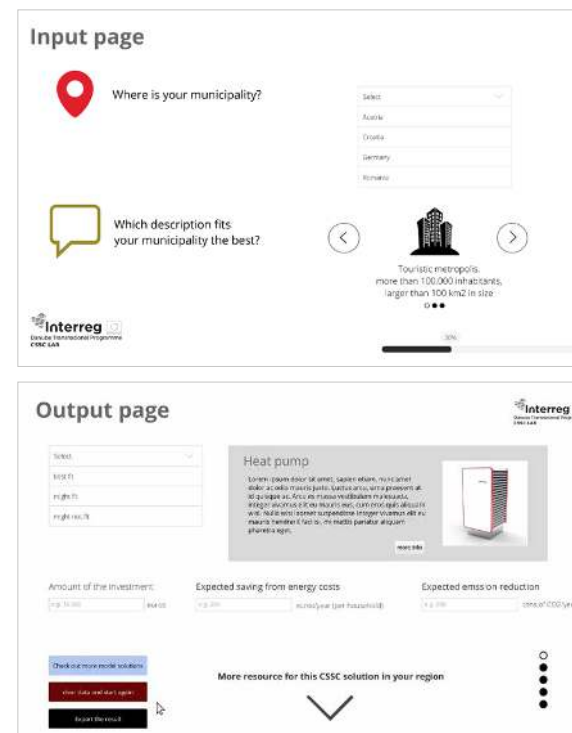
As small and medium-sized cities are confronted with unique hurdles such as limited staff members and smaller budgets, appropriate solutions are difficult for them to find.

CSSC Lab offers a time saving option on finding solutions that suit different types of municipalities by having developed criteria for each city-type, which can then be matched to a range of solutions. The project platform hosts information on a selection of solutions, the associated technology, its costs, the benefits for the community and its scalability. This makes it clear what resources are needed for each city storage and sector coupling solution.



In addition, the platform gives an overview of current funding possibilities in each region in the national language. This is to make each technology as accessible as possible and also reach stakeholders who may not master foreign languages.

In those countries where demo centres are located or nearby best practices cases can be found, these are referred to. The possibility also exists of visiting these sites to witness the use of the solution with one's own eyes! This tool can be found at www.cssclab.eu.





CSSC Lab Platform

www.cssclab.eu