

Renewable Energy SOLUTIONS for URban communities based on Circular Economy policies and Dc backbones. – RE/SOURCED

The basic objectives of the RE/SOURCED project is to be able to fully supply the "Transfo Zwevegem" site with energy by using only renewable energy sources. The research group EELab/Lemcko will develop a backbone in direct current that connects all these sources together with contemporary storage systems. The development of such a DC backbone will create an optimally integrated network with minimal losses while maximizing the use of renewable energy.

An optimal route will be calculated for the DC grid, connecting all renewable sources and storage systems on the site, independent of their power. V1G and V2G applications will also be included.

In addition, an educational model will be developed by using various opportunities present on the site as a demonstrator of existing and future potential possibilities for energy storage or to better control the flexibility of consumption.

Because of the concept applied, this site can perfectly be developed as a renewable energy community in which all users on Transfo will be able to participate. By being able to respond to the consumption and yield of renewable energy, a flexible energy system with a maximum use of renewable energy can be strived for, while requiring a minimum of investment.

In concrete terms, this means:

- Optimal dimensioning of renewable sources and storage systems
- Integration of the DC backbone in the existing network
- Development of monitoring strategies for optimising the interaction between different renewable sources and storage systems in order to maximise the use of renewable energy.

This concept is then further studied within the framework of a sandbox zone. By refining experimentation and further development of these concepts, the electricity grid of the future will be further developed through progressive insight.