

# CO<sub>2</sub> neutral multi energy grid in Green Energy Park in Zellik

**Save the date:**

20 November 2019 | Brussels, Belgium

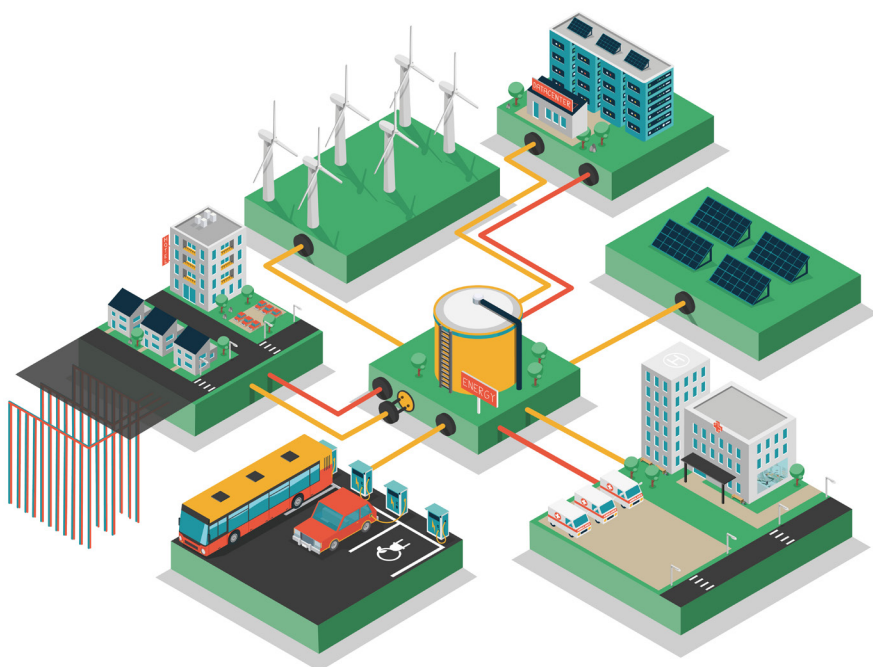
Green Energy Park is the result of the collaboration between the Vrije Universiteit Brussel (VUB - Free University of Brussels), the Universitair Ziekenhuis Brussel (UZ Brussel - University Hospital of Brussels), the Energy Cluster Flux50, the municipality of Asse, the Flemish Government and several companies. The park is a centre of expertise in sustainable energy systems, mobility, smart regions and healthcare technology. It offers facilities for research, development, pilot studies, showcases, education and trainings. An on-site green datacentre offers sufficient capacity to support calculations by research institutes and companies. Green Energy Park aims to stimulate strategic partnerships to develop solutions for the future. One of their research domains is sustainable energy and mobility. The park will be equipped with a low-temperature thermal grid and a large electric grid. All buildings in the park can partake in the “CO<sub>2</sub> neutral smart multi energy grid” by supplying and utilising energy. Excess heat from the datacentre, heat pumps, cogenerations and different renewable energy sources will be added to the grid. Energy will be stored in multiple batteries, electrical cars, heat buffers and underground storage. Due to the park’s location nearby a residential area, the thermal part of the grid will be extended to the residential development, in collaboration with Matexi.

The development of a next generation CO<sub>2</sub> neutral thermal grid is an important solution to realize the energy transition towards a carbon neutral society. For this, the creation of a techno-economic blueprint is desired to establish the potential of the grid in terms of set-up, communication, cybersecurity, business model, legal framework,...



## The multi energy grid in depth

The multi energy grid will consist of a (mainly) low temperature thermal grid and an electric grid. On the business park of Green Energy Park solar and wind energy are generated and will be injected in the electric grid. All companies located at the park are connected and can inject to or consume from the electrical and the thermal grid. The thermal grid will be extended from the business park to the adjacent existing business area and to the nearby new built residential area. Also here, users can inject or consume heat. This creates a bi-directional interaction between the business park and the residential area.





# Innovation challenges

## Techno-economic blueprint for a CO<sub>2</sub> neutral multi energy grid in Green Energy Park (GEP) in Zellik, its adjoining business park and nearby residential area

- Technical set-up of the thermal grid
  - Infrastructure for thermal grids
  - Heat recovery solutions in the datacentre
  - Bi-directional interaction with different end-users (professional and residential)
  - Bi-directional heat pumps (user as suppliers and purchaser), fuel cells, booster pumps
  - Heat storage solutions
- Technical set-up of the park's electric grid
  - Bi-directional interaction between GEP's electric grid and the national electric grid
  - ICT solutions for connection between electric and thermal grid
- Economical set-up of the CO<sub>2</sub> neutral grid to develop well-balanced tariff structures with respect to the different stakeholders\*, considering the bi-directional interaction with different end-users and the national electrical grid
- Communication protocols
  - Managing and steering of the grid
  - Development of self-learning algorithms
  - Cybersecurity solutions
- Set up of a legal and regulatory framework:  
Currently, the regulation of heat production and exchange is limited. A well-balanced framework describing the responsibilities of different stakeholders\*, will promote the development of thermal grids

\*Possible stakeholders: professional and residential end-users, municipalities, provinces, suppliers, construction promoters, grid operators ...

# Do you have a solution that could contribute to a multi energy smart grid?



**REGISTER HERE** for our Living Lab Event with inspiring presentations focusing on a multi energy smart grid, keynote speakers and matchmaking opportunities. Registration will be up until and including the **1<sup>st</sup> of November**.

Suppliers will be informed on their selection on the **6<sup>th</sup> of November** at the latest. Selected suppliers will partake in one-to-one meetings with key decision makers from the Living Lab Owner Green Energy Park and its partners. On top of that suppliers will have the opportunity to pitch their solution on stage for all attendees.

The living lab event will be organized during **G-STIC 2019**, the Global Sustainable Technology & Innovation Conference at Brussels Expo. Four years after the launch of Agenda 2030 and its associated Sustainable Development Goals (SDGs) by the United Nations, there is a consensus among experts that progress is lacking. This is a clear sign. Achieving the SDGs with business-as-usual is just not possible. G-STIC aims to accelerate the transition to a wide-scale deployment of market-ready integrated technological solutions that can have a big impact on the achievement of the SDGs. Bearing this goal in mind, technological clusters that contribute to 6 societal challenges will be identified. These 6 challenges are: safe climate for all, education for all, energy for all, health for all, sustainable ocean resources and water for all. In addition, also 5 cross-cutting themes of crucial importance to the societal challenges will be addressed: circular economy, geospatial data, ICT as enabling technology, gender mainstreaming and youth engagement. This identification process will result in a living library of breakthrough transformative technologies across sectors, illustrated with best practices and inspiring examples. Captains of industry can use this library for exploring new business opportunities.

Suppliers present at the living lab have the opportunity to partake for free in the late afternoon plenary session Living the Change and the networking reception of G-STIC on the 20<sup>th</sup> of November in the evening. An ideal opportunity to connect with an international audience (> 1000 people) coming from all over the world and involved in achieving SDGs on a daily basis.

We will provide **pitch training** for you in preparation for the on-stage pitch, which will help you improve your ability to present your idea.

All questions can be e-mailed to [stefanie.desmet@cleantechflanders.com](mailto:stefanie.desmet@cleantechflanders.com)



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## Event partner



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