

## NEWSLETTER SEPTEMBER 2017

During the past six months a lot has happened in the EnergyLab Nordhavn project. The biggest event has without doubt been the installation of the battery in P-hus Lüders. The battery was inaugurated at an event at By & Havns exhibition, Himmel and hav! in March.

Present at the event was Lord Mayor of Copenhagen Frank Jensen. Frank Jensen pointed out how important collaborations between universities, private companies and authorities are when it comes to finding sustainable solutions. Frank Jensen said very clearly. "Politicians can make decisions and secure public funding but when it comes to creating the innovation we should invest in scientists and companies are crucial".

Among the speakers were also Thea Larsen, chairman of EUDP; Jens Kramer Mikkelsen, CEO in By & Havn; Knud Pedersen, Chairman of the Board in Radius Elnet and Claus Madsen, CEO in ABB.

### Increased international interest in EnergyLab Nordhavn

There is no doubt that sustainable energy is top of the agenda all over the world. In the past year we have experienced a significant increase in interest from international delegations – governments as well as businesses.

Denmark is front runner when it comes to sustainable energy and with the goal of becoming the world's first CO2 neutral capital, Copenhagen gets a lot of attention. One of the purposes of EnergyLab Nordhavn is to showcase the many competencies of Danish companies and organizations.

Smart City projects, smart grid and battery storage appear all over the world. However integrating a battery in the grid in an urban environment in Nordhavn is quite exceptional. What makes EnergyLab Nordhavn truly unique and makes the project stand out is the focus on how to integrate several already existing energy systems, like electric power and heating into one intelligent, flexible and optimized energy system.

### District heating flexibility in Nordhavn

As part of the work package concerning District Heating Infrastructure several tests have been carried out.

During the spring of 2017, two buildings- one residential building, and one office building- in the Nordhavn area was tested in collaboration with DTU and HOFOR A/S. The results from the tests were promising however in different directions. This fall a larger amount of tests will be carried out as the new heating season begins. HOFOR have recruited 15 buildings in the Nordhavn area to participate in the second test, but consider recruiting buildings in other areas in Copenhagen.

By exploiting the short term heat storage in the building's thermal mass, it is possible to reduce the heating supply in buildings for shorter periods to avoid the start-up of oil fueled peak load boilers without affecting the thermal comfort of the building's occupants.



The stars marks the flexible heating clients in Nordhavn

## ENERGYLAB NORDHAVN

The project "EnergyLab Nordhavn – new urban energy infrastructures" will develop and demonstrate future energy solutions. The project utilizes Copenhagen's Nordhavn as a full-scale smart city energy lab and demonstrates how electricity and heating, energy-efficient buildings and electric transport can be integrated into an intelligent, flexible and optimized energy system. The project participants are: DTU, City of Copenhagen, CPH City & Port Development, HOFOR, Radius, ABB, Balslev, Danfoss, CleanCharge, METRO THERM, Glen Dimplex and the PowerLabDK facilities. The project is supported by EUPD (Energy Technology Development and Demonstration Programme) and runs from 2015-2019.

### **EnergyLab Nordhavn part of the UNLEASH Innovation Lab**

On Monday 14 August EnergyLab Nordhavn welcomed more than 100 professionals from all over the world. EnergyLab Nordhavn had been selected as one of the innovative projects addressing some of the global sustainability challenges that the group focusing on Energy should visit. Following presentations on the development of the Nordhavn area (By & Havn), the 2025 Copenhagen Climate Plan (Københavns Kommune), Innovations in the DSO business (Radius) and of course a short introduction to the EnergyLab Nordhavn project it was time for a short tour of the area.



Konditaget Lüders was a big hit with the UNLEASH professionals

### **Use cases for integrated, smart energy solutions**

EnergyLab Nordhavn will demonstrate integrated, smart energy solutions in Nordhavn. An integrated, smart energy solution is characterised by the integration and coordinated operation of more energy sectors (electricity, heat, mobility) and more smart installations. The use case approach has been used to identify and specify potential integrated, smart solutions.

One example of a use case is: Coordinated operation of the three installations: the charging of a fleet of 10 electric vehicles, the hybrid heating (combined district heat / electricity) of domestic hot water in 10 houses and the grid connected battery, optimised with respect to forecasts of both the needs of the customers and the energy system (indicated by the local, dynamic market prices). The flexibilities are provided by the individual time-flexibilities of the EV chargings and the water heatings, as well as the source-flexibility of the water heatings. In total, 20 different use cases have been defined.

### **CPH Climate Conference 2017**

In the end of August Københavns Kommune hosted the annual climate conference, CPH Climate Solutions. Once again EnergyLab Nordhavn was part of the program offering a tour in the living lab in Nordhavn. As part of the climate conference a group of 40 participants visited Nordhavn on Tuesday morning to learn about the full scale living lab- EnergyLab Nordhavn.



During the two hour tour the group listened to presentations from Thomas Nielsen, Director of Communications & Advancement, Copenhagen International School (CIS); Kristian Honoré, energy planner at HOFOR who presented the demonstrations in low-temperature district heating; Rasmus Brandt Pedersen, CSO, CleanCharge discussing electric transportation and Jane Hegner Mortensen, Project Manager, By & Havn who told the story about the development of the Nordhavn area.

Meet and greet in Nordhavn in connection with the CPH Climate Solutions

## Visualizations of smart energy solutions in EnergyLab Nordhavn awarded at Climate-KIC Nordic Ideation Day II 2017

“EnergyLab Nordhavn is a lighthouse project within smart energy” was one of the acclaims when Center for Electric Power and Energy (CEE) in collaboration with Kirt & Thomsen was awarded €15.000 for their contribution ‘Visual communication of smart energy solutions in Nordhavn’ at the Climate-KIC Nordic Ideation Day II 2017 on 22 August.

Smart energy solutions are often complex, integrating various factors such as different energy sectors, infrastructures, components, data exchanges as well as all the different actors, markets and business models.

The purpose of the visualization is therefore to communicate smart energy solutions in a simple way while still illustrating the technical details. The visual presentation will be used to support both the internal and external communication of the smart, integrated energy solutions demonstrated in the EnergyLab Nordhavn project.



Rune Kirt and Per Nørgård accepts the award

## EnergyLab Nordhavn to display Danish energy solutions in new showroom in Nordhavn

On 5 September more than 50 project participants from EnergyLab Nordhavn met in Nordhavn for the third annual seminar. This year the group met in new surroundings at Sundkaj 7 in what will become a new showroom for EnergyLab Nordhavn.

The partnership EnergyLab Nordhavn is behind the initiative to establish a new showroom for intelligent energy solutions for the future sustainable cities. Together with the showroom, the co-working space EnergyHub will be established. It will be open to all companies engaged in sustainable urban development. Nordhavn wants to be the most intelligent and innovative urban area in Denmark.

The activation of a large warehouse together with the companies behind EnergyLab Nordhavn is therefore no coincidence. The partners in EnergyLab Nordhavn represent some of Denmark’s leading companies within the business for utilities, buildings and energy. Together with the showroom, the co-working space EnergyHub will be established. It will be open to all companies engaged in sustainable urban development.



There are plenty of room for both presentations and workshops in the new showroom and EnergyHub in Nordhavn

To find out more about the new EnergyLab Showroom and EnergyHub click [here](#)



### **A meet-up with residents from Frihavnstårnet**

On 3 April representatives from EnergyLab Nordhavn – ABB, Balslev, By & Havn and DTU- met with a group of residents from 'Frihavnstårnet' - one of the selected buildings in the project. In total 13 apartments is part of the demonstration regarding intelligent control of energy.

The residents will contribute with data concerning their energy consumption and will in return experience intelligent control of heating and lighting. Two master students from DTU Elektro has just finalized their master thesis using data from the demonstrations.

Present at the meeting was also Frandsen EL who is responsible for the installations. Going forward the partners in EnergyLab Nordhavn will host informal meetings with residents in the area.

### **Follow us on LinkedIn**

Since the last EnergyLab Nordhavn newsletter we have a new LinkedIn profile where you can follow the latest news. Click [here](#) to visit the page.

## **MORE INFORMATION**

### **Contact:**

Christoffer Greisen, Project Manager  
eln@dtu.dk

Website: [www.energylabnordhavn.dk](http://www.energylabnordhavn.dk)

LinkedIn: <https://dk.linkedin.com/company/energylab-nordhavn>

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