

## **Delivery no.:9.4**

### **Real time Nordhavn visualizations**



*Photo: By & Havn / Ole Malling*

**By & Havn**  
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**Public deliverable**

**Confidential deliverable**

## **Preface**

*EnergyLab Nordhavn – New Urban Energy Infrastructures* is a project that has been using Copenhagen's Nordhavn district as a full-scale smart city energy lab, with the main purpose to do research, development and demonstration of possible energy solutions for the future with maximum use of renewable energy. The goal is to identify the most cost-effective smart energy system, which can contribute to solving the major climate challenges the world is facing.

Budget: The project has a total budget of DKK 143 m (€ 19 m), of this DKK84 m (€ 11 m) funded in two rounds by the Danish Energy Technology Development and Demonstration Programme (EUDP).

## **Forord**

*EnergyLab Nordhavn – New Urban Energy Infrastructures* er et projekt, der foregår i den Københavnske bydel, Nordhavn, der fungerer som et fuldskala storbylaboratorium, hvor der skal undersøges, udvikles og demonstreres mulige løsninger til fremtidens energisystem med et maksimalt brug af energi fra vedvarende kilder. Målet er at finde fremtidens mest omkostningseffektive energisystem, der samtidigt kan bidrage til en løsning på de store klimaudfordringer, verden står overfor nu og i fremtiden.

Budget: Projektets totale budget er DKK 143 mio. (EUR 19 mio.), hvoraf DKK 84 mio. (EUR 11 mio.) er blevet finansieret af Energiteknologisk Udviklings- og Demonstrationsprogram, EUDP.

## **Project Information**

**Deliverable no.: D9.4**

**Deliverable title: Real time Nordhavn visualizations**

**WP title: Visibility and stakeholder engagement**

**Task Leader: Benny Hansen**

**WP Leader: Jane Hegner Mortensen**

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## Table of Contents

### Version Control

Version	Date	Author	Description of Changes
1	2019-11-12	Benny Hansen	

### Quality Assurance

Author	Reviewer	Approver
Benny Hansen	Jane Hegner Mortensen	WPL group

Status of deliverable		
Action	By	Date/Initials
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## 1. Introduction

As part of exposing the result from the EnergyLab Nordhavn project, ABB has in collaboration with By & Havn, installed a screen to show real time data in the showroom. It is not 'Cloud' solution but is based on DTU Garfana servers in Power Lab.

## 2. Method

### Task 9.4 Real time Nordhavn visualizations

The first visualization was set up in the exhibition 'Himmel og Hav' in 2017 in the Nordhavn building, the Silo. This was a very simple visualization, using the projects interactive info webpage:



Illustration by Claus Lunau

In September 2017, focus started on how real time data could be visualized. Three target groups were identified: Regulators/Politicians, Residents and Technical developers. The plan is to present real-time visualizations to the target groups while at the same time presenting the technologies developed in Nordhavn.

In March - April 2018, the project group made a storyboard illustrating some of the use cases.

In the ELN Showroom at Sundkaj 47, a visualization platform has been installed by ABB and is now running the 4th generation called 'Inside Dashboard'. A large 40" tablet has been installed to run the applications at the Showroom.

The Inside Dashboard is now showing visualizations from:

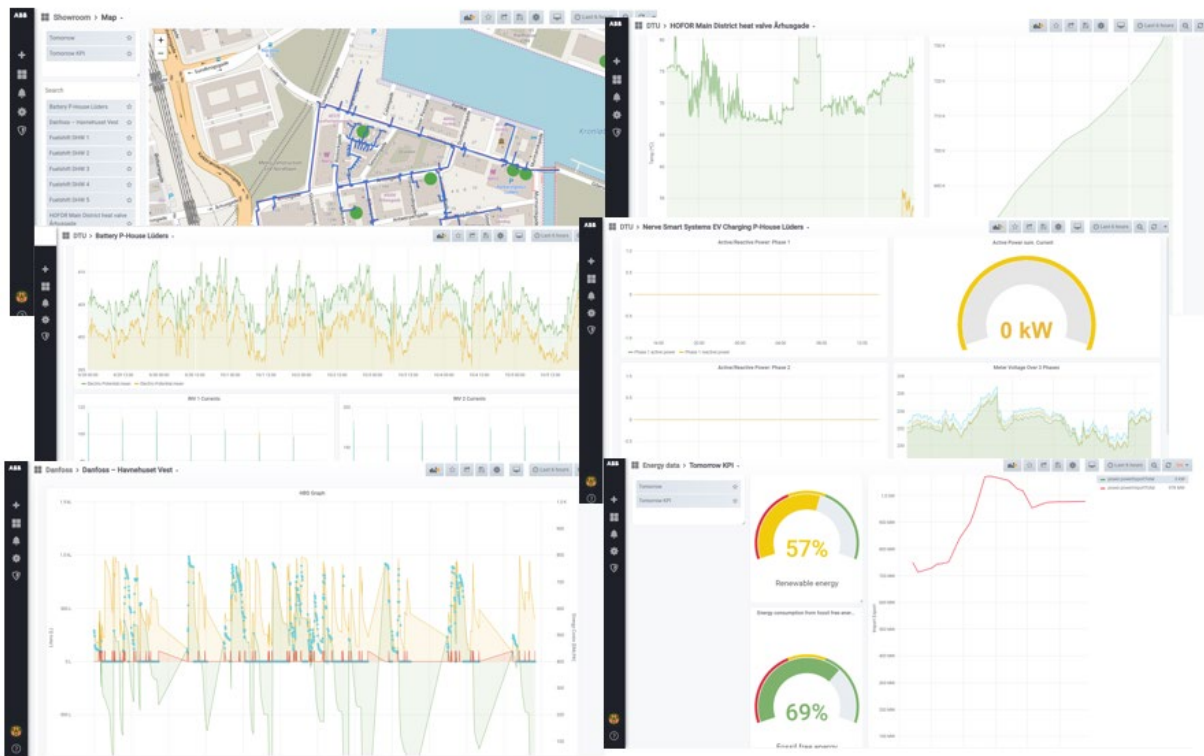
- WP4 Showroom radiators

- WP4 Showroom hot water heat pump from Metroterm
- WP5 HOFOR Main District heat valve for Århusgade district
- WP6 Radius Battery in P-house Lüders
- WP6 Radius/DTU Smart Grid Unit (SGU) at substation Billevej 6, Nordhavn
- WP10 Havnehuset Danfoss Boosterpump
- Tomorrow Electricity map

More will be added as they get finalized within the individual work packages.

It will also be possible to show a project video on the tablet.

For description on how to find the data on the DMS, is available in deliverable WP2.



### Examples on visualizations

A welcome webpage with the EnergyLab Nordhavn project story has been created. Here the story of the project and links to demonstrations and partners are available.