



Prototyping the most energy and cost
efficient data centre in the world:
The Boden Type Data Center

This project has received funding from the European Union's Horizon 2020
research and Innovation programme under grant agreement No 768875



Introduction

The data center industry represents 3-5% of global power use and the fastest growing carbon footprint in ICT

Future applications are expected to drive demand even further

Date centers across the EU have an average PUE (Power Usage Effectiveness*) above 1,5

*PUE = facility power / IT equipment power



Horizon 2020

In 2016 the European Union's research and innovation programme Horizon 2020 announced a project on data center efficiencies addressing the challenges

The project Boden Type Data Center with a budget of around 3 million EUR was rewarded with funding in September 2017





**CONSTANT CHANGE
IN ENERGY NEED**



**ENVIRONMENTAL
IMPACT**

Key challenges



**CLIMATIC
CONDITIONS**



**SAFE
OPERATIONAL
COSTS**

Boden Type DC

The objective of the project is to build **one of the most efficient data center of the world** that we call Boden Type Data Center.



We build **a prototype to prove the concept** in near/real operational environment so that the technology can be replicated elsewhere in the Nordics and the rest of Europe

The location

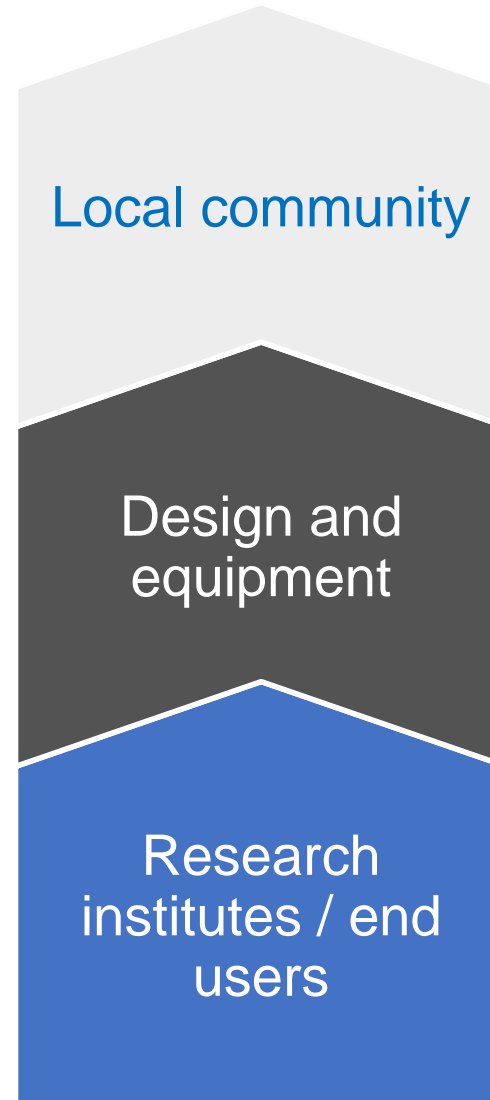
The prototype that we call **Boden Type DC One** is being built in Boden, North of Sweden.

Boden is host to several data center facilities. The cold climate and the stable, high quality power close to its production from 100% renewables offer ideal conditions.



Consortium members & roles

5 partners/4 countries



Dissemination, communication and exploitation of results

Project coordination
Design & construction

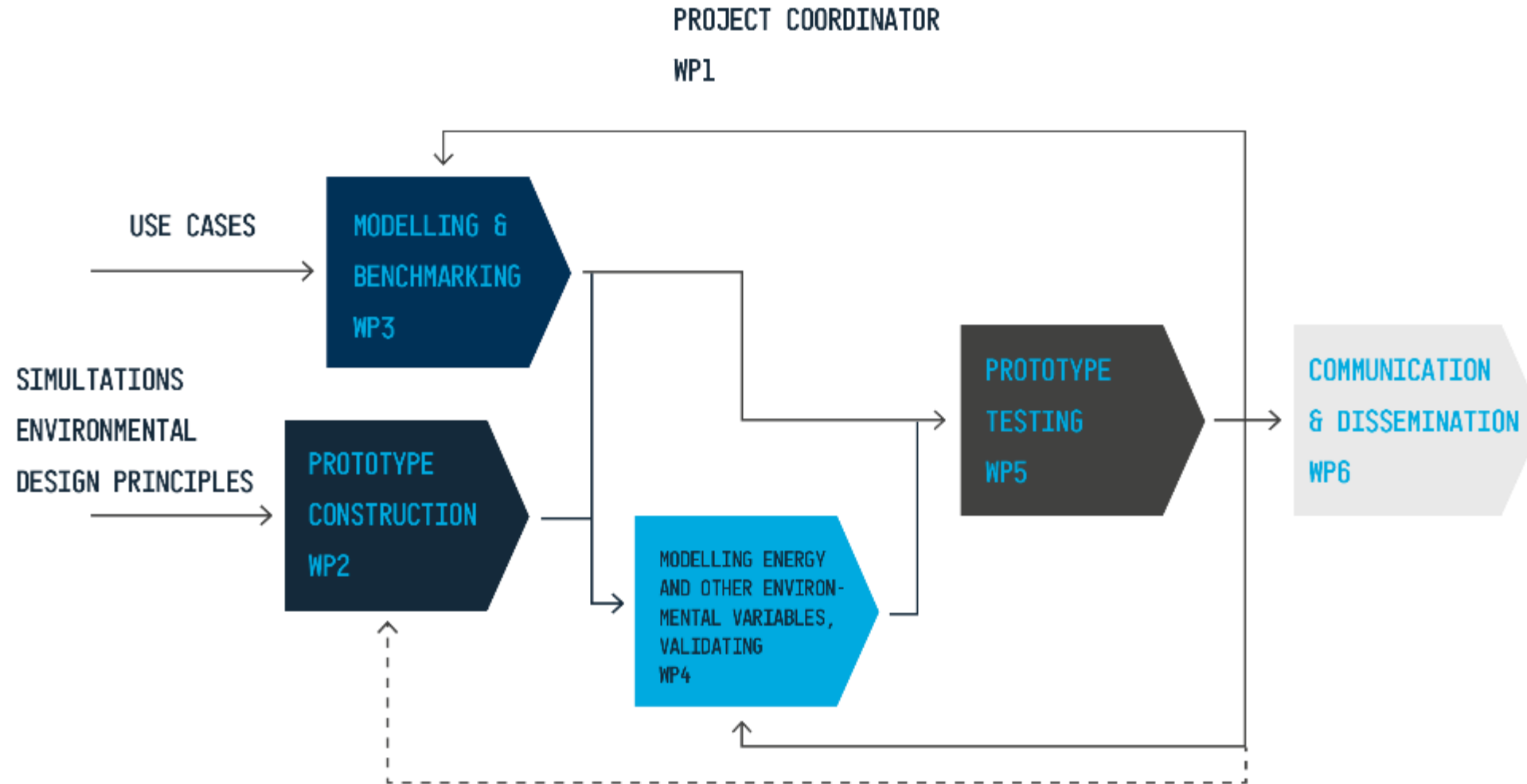
Modelling energy and validation of measurements

Prototype testing, measurements and results

Modelling and benchmarking load patterns



Project work plan



Key features

EFFICIENT
FRESH AIR
COOLING

MODULAR
BUILDING
DESIGN

RENEWABLE
ENERGY

FAVOURABLE
LOCATION

Highlights of Boden Type DC One

- Targeting PUE below 1,1
- Modular design supporting scalability and different service levels
- Using free air and evaporative cooling technologies in order to improve cost and power efficiency
- Load balancing
- Using high quality power with low harmonics minimizing UPS equipment
- 100% renewable power used
- Environmental friendly wooden building structure

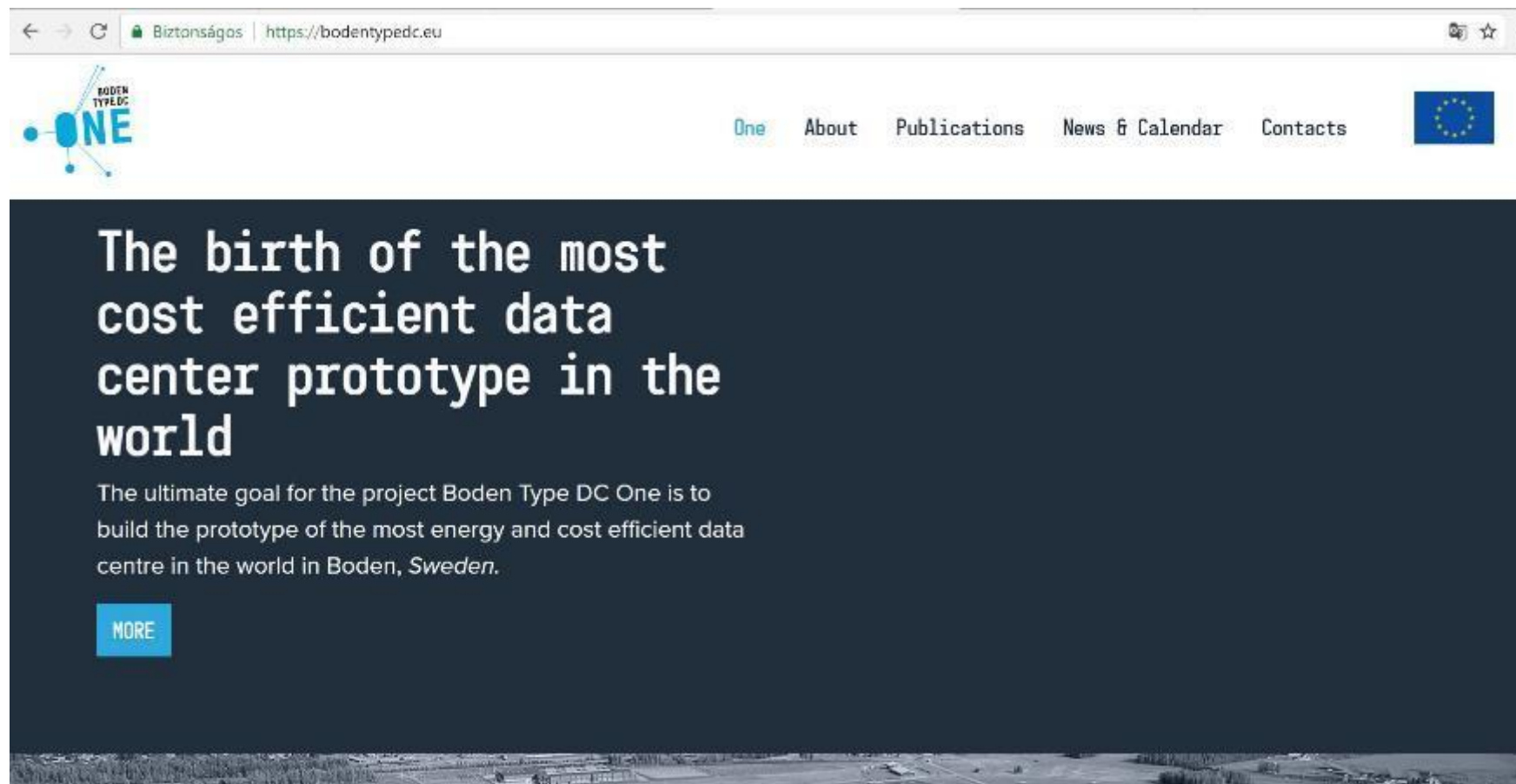
Timeline



Progress and achievements

- Oct 2017 Project Kick-off
- Sep 2018 Concrete foundation and outside shelf of the building is ready
- Dec 2018 Projected start of operations

Visit our website for more information – www.bodentypedc.eu



The screenshot shows a web browser window with the URL <https://bodentypedc.eu>. The page features a navigation menu with links for "One", "About", "Publications", "News & Calendar", and "Contacts", along with the European Union flag. The main content area has a dark background with the following text:

The birth of the most cost efficient data center prototype in the world

The ultimate goal for the project Boden Type DC One is to build the prototype of the most energy and cost efficient data centre in the world in Boden, Sweden.

[MORE](#)



Summary

There is huge demand for data center efficiency improvements from both commercial and environmental perspectives

The Boden Type DC project is creating a data center prototype, proving the concept of highly efficient technologies

Results will be available throughout the validation of the project



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