Limerick · Trondheim · Alba Iulia · Písek · Sestao · Smolyan · Võru

+CityxChange – A Lighthouse Project for Positive Energy Districts

100% Climate Neutrality Conference 2019 CITIES Track| 01.10.2019
Presented by Annemie Wyckmans (NTNU)
Created by Bjørn-Ove Berthelsen (TK) & Dirk Ahlers (NTNU)
http://cityxchange.eu/

Background

Co-creating the project

Consortium building & preparation with 32 partners

Cities

Lighthouse Countries
Follower Countries
Other Partners

Norway
Estonia
Rep of Ireland
Netherlands
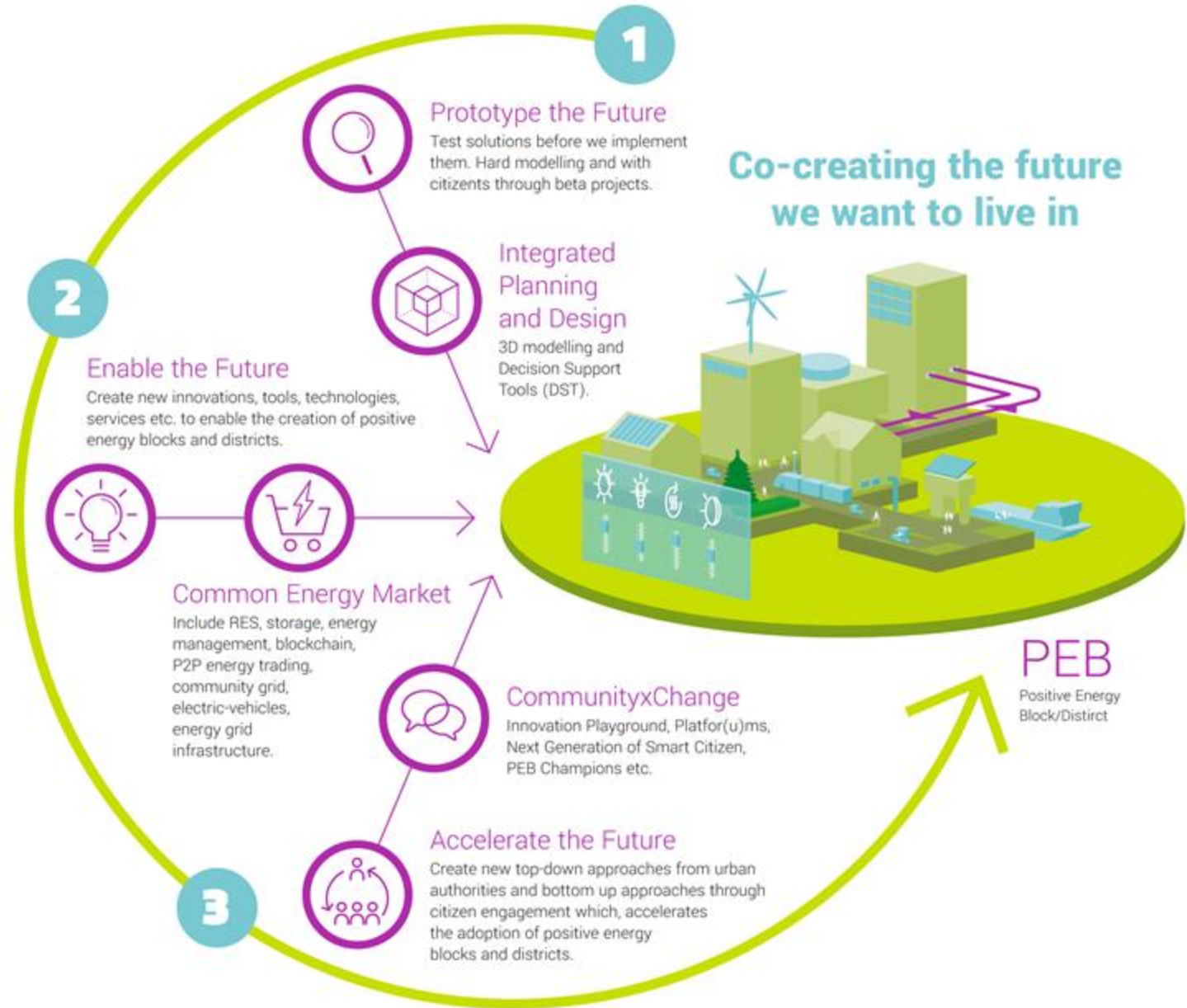Germany
Czech Rep.
Romania
Bulgaria
Spain
Italy
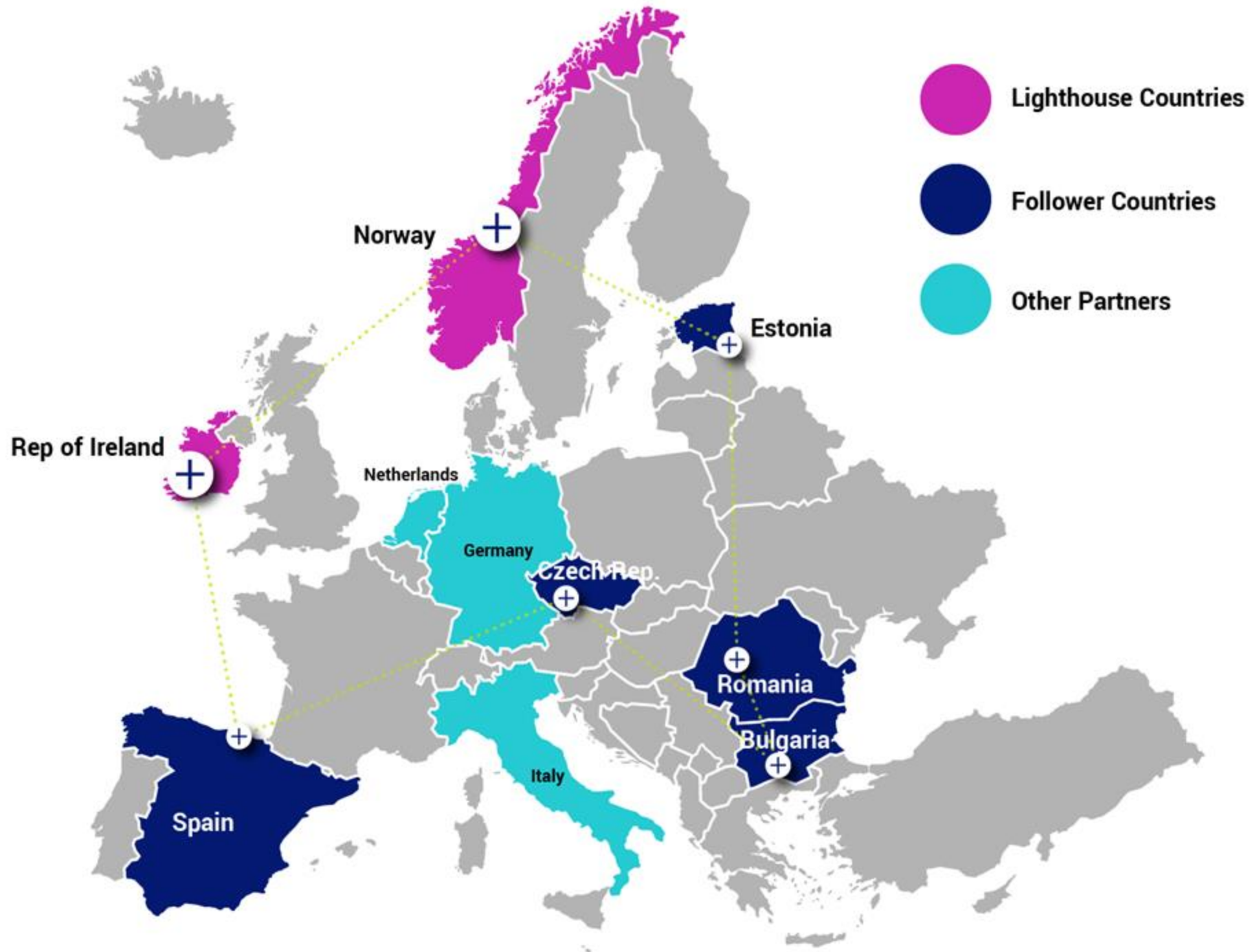
Consortium

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Approach

Project Core

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City-Driven System Transition towards PEBs/PEDs

Energy - innovation

Energy systems Integration

Local Energy Trading Market / Local Flexibility Market
Peer-to-peer energy/energy products trade

Reorganize energy ecosystem
Regulatory mechanisms

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ELECTRIC

Power producer

System operator

Market operator

Grid operator

Power supplier

Costumer

FINANCIAL

ELECTRIC

Power producer

System operator

Market operator

Costumer

FINANCIAL
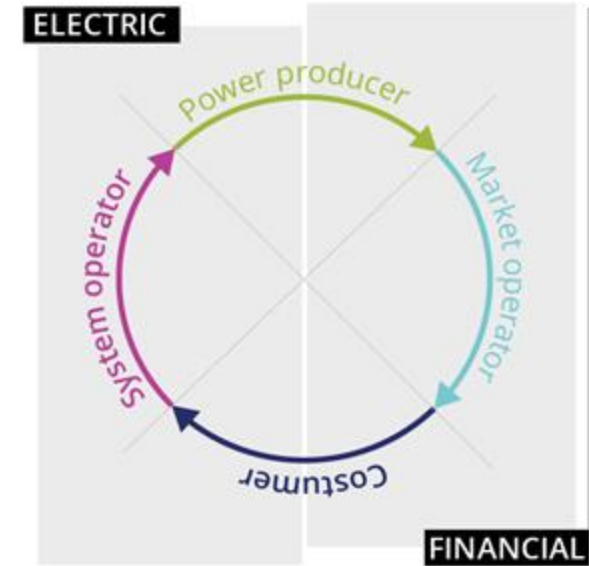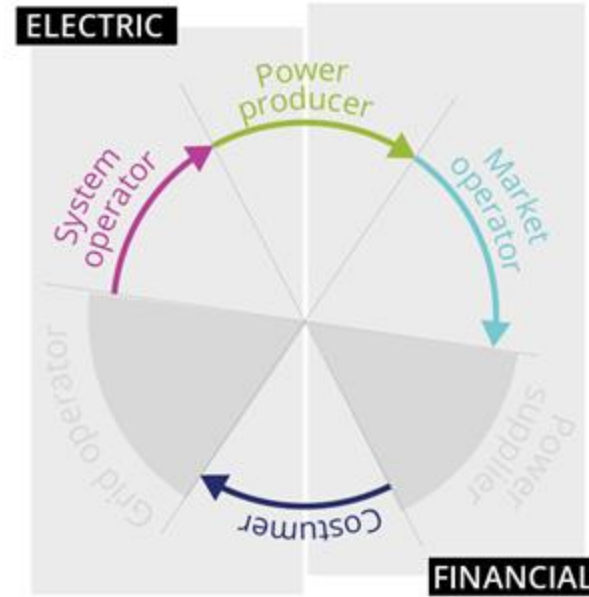
From six to four roles

One player - two roles
-> producer/costumer

Digital data exchange and automatic operation

Market operation - executed by transparent and neutral role(s)

Local system operation includes local grid operation - micro or cit grid

Market operation requires digital interactions between roles

Local market may be connected to global pricing

Demo Projects:
Technology

ENVIRONMENTAL

Model (DP01)
Record data and provide integrated decision support to cities

SPATIAL

DPEB (DP06)
Create DPEBs through improved energy performance and integration with the energy system

TECHNICAL

Microgrids (DP07)
Balance and optimise energy in the PEB through Microgrids

TECHNICAL

EMaaS (DP08)
Integrate seamless e-mobility within the PEB
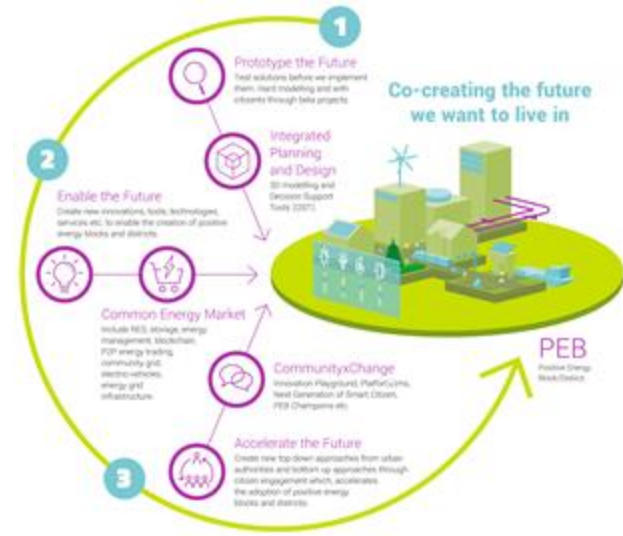
TECHNICAL

Local trading (DP09)
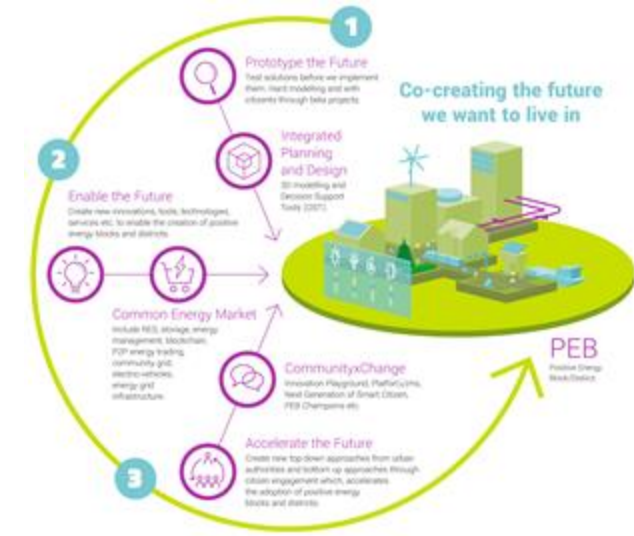Enable Peer-to-Peer trading within the PEB

TECHNICAL

Flexibility market (DP10)
Enable a fair deal to all consumers through a flexibility market

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Demo Projects:
Community Engagement and Scaling

Engage (DP03)
Co-create Positive Energy Blocks

Vision (DP02)
Co-create a Bold City Vision, to Plan, Implement, Replicate and Scale-up to Positive Energy Districts and Cities

Regulatory zone (DP04)
Enable innovation through regulation mechanisms

**Invest (DP11)**
Enable consumers to invest in their buildings, which is critical to the creation of a PEB

Playground (DP05)
Accelerate change and disruptive solutions through innovation playgrounds

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Open Innovation

- Co-creation and open innovation as a main principle
  - Citizen Participation
  - Outreach
  - Open Data and Systems

- "Open by Default"
- Building the project on transparency and openness
- Inter- and extra-project collaboration SCC1
- Open Research Data Pilot and Open Access
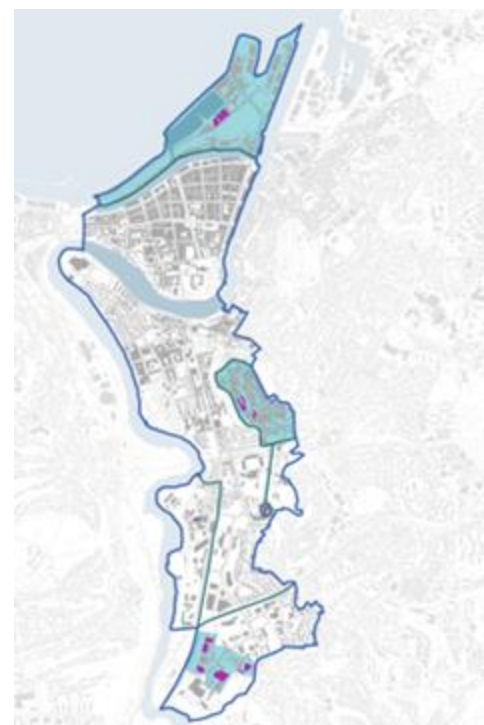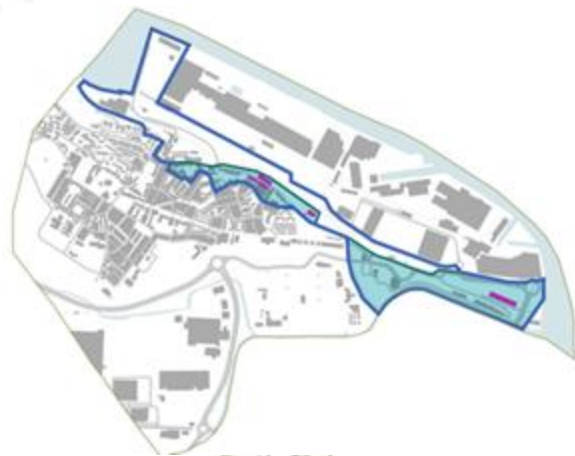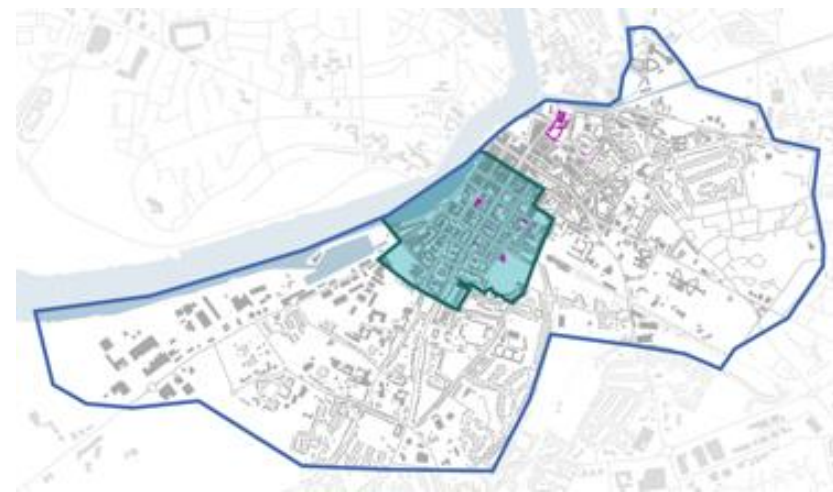
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Starting from hubs
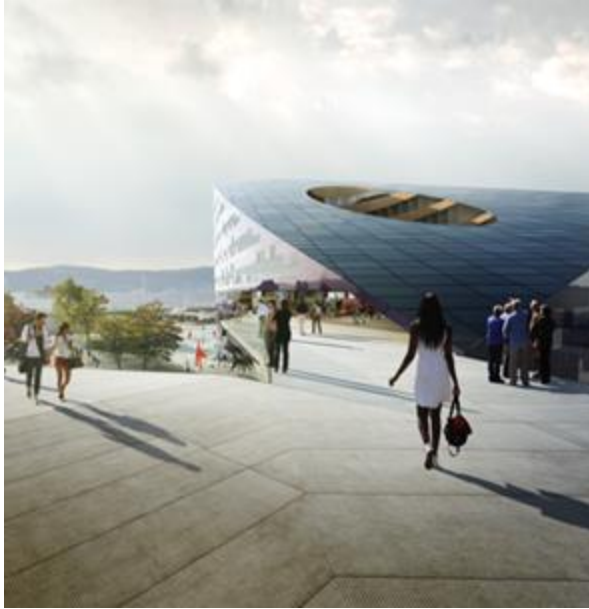
Powerhouse Brattøra
Trondheim
[www.powerhouse.no]

Lysgården Sluppen,
Trondheim
[www.lysgarden.no]

Calle Txabarri, Sestao
[www.sestaoberri.eus]

Gardens International, Limerick
[www.limerick.ie]

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City perspective and impact

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Why the City of Trondheim engages

- Citizen at the centre, open innovation
- Urban prototyping, experimenting, testing for new ways of working
- New jobs, businesses and business models; attract more investments
- Climate, energy, and local air quality
- New ICT-based services to improve urban quality
- Benchmarking and strengthen city position
- Competence/Experience for sustainable urban development
- Solutions and cooperation processes adapted to city's identity
- Strategic municipal vision for 2050, co-created with local actors

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Key points from a city perspective

- Cities at the core - city driven projects
- Anchoring at CEO level (political)
- City coordinator, project lead + strong competence in project development, energy, mobility, business development, ICT, citizen involvement, communication + adm/support staff
- Work across silos
- City as a lab

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25+5
SDG Cities
Leadership Platform

TRD3.0

Societal learning and
UniversityCity -
Trd3.0

SMARTCITYTRONDHEIM

"Smart" sustainable
urban development &
democracy

Sentralen
for Co-Creation and Relational Welfare

Relational welfare,
co-creation, and
Municipality 3.0

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Achievements so far

First 10 months

- Deeper understanding and planning of project and demos
- Started one of the first large-scale projects on Positive Energy Districts
- Core Framework and Methodology
  - Regulatory issues on trading
  - Bold City Vision
  - KPI Framework
  - market models
  - eMaaS
- Collaboration, interaction, replication

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Q&A

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