ATELIER experience

Rudy Rooth

Municipality of Amsterdam

AmsTErdam BiLbao cItizen drivEn smaRt cities

atelier
Positive Energy Districts

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.864374

What to expect?

- General information on ATELIER
- Description of the demonstrators
- Experience so far
- ATELIER city oriented activities
  - City visions
  - Innovation Ateliers
  - Replicability
  - Citizen engagement

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ATELIER Goals

- ATELIER is a smart city project that demonstrates Positive Energy Districts (PEDs) within 8 European cities with sustainability and carbon neutrality as guiding ambitions.
- The project will:
  - Showcase innovative solutions that integrate buildings with smart mobility and energy technologies
  - Create a surplus of energy and balance the local energy system.
  - Help the fellow cities Bratislava, Budapest, Copenhagen, Krakow, Matosinhos and Riga to replicate and adapt successful solutions
  - Establish local PED Innovation Ateliers to co-produce locally embedded, smart urban solutions
- ATELIER has the ambition to pave the way for “energy positive cities” in Europe.

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ATELIER General data

- Demo locations:
  - Amsterdam Buiksloterham
  - Bilbao Zorrotzaurre
- 6 Fellow Cities, Bratislava, Riga, Copenhagen, Budapest, Krakow, Matosinhos
- Consortium: 30 Partners from 11 countries
- Duration: 5 Year, December 1, 2019 – November 30, 2024
- 19,5 million Euro EU grant
- Coordinator: Municipality of Amsterdam

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Amsterdam demo ingredients

- Positive energy buildings
- PV plant
- Smart mobility
- Smart micro-grids
- Local energy communities
- Sewage energy recovery

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Bilbao's demo at a glance

- Bilbao's metropolitan area houses around 1,000,000 inhabitants
- The city of Bilbao has approximately 350,000 inhabitants and occupies 41km^2
- The island of Zorrotzaurre is an old industrial brownfield with as little as 500 inhabitants that occupies a little less than 1km^2
- This are is being recovered and will become *the* key space for the expansion of Bilbao and its connection to the rest of the metropolitan area

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PED Area Zorrotzaurre

- Three demos were selected in order to ensure a broad footprint
- Each demo includes different kind of buildings:
  - Old and new
  - Public and private
  - Residences and offices
- Bilbao's PEDs will generate electricity via PV panels in the roofs and heat and cooling via geothermal power
- Zero-emission mobility will be fostered by electric vehicle chargers
- PEDs will be equipped with smart street furniture (interactive bus shelters, smart poles, smart storage…)
- Smart metering systems will be tested in residential buildings
- An Energy Management System will analyse the generated energy

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ATELIER WP5 ingredients

- Geothermal energy
- Positive energy blocks
- E-mobility hub
- Smart storage,
- Local renewable energy production
- Development of a smart grid and demand/response offers

- Resilient
- Carbon-neutral
- Pedestrian focus
- Long-term goals
- Urban test lab
- Participative planning

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ATELIER Experience, the changing environment

- Emerging COVID
- Demo location Amsterdam Buiksloterham
  - Economic uncertainty affecting the sales of real estate and investor appetite
  - Construction site Republica still faces some uncertainties, but construction is now ongoing, see https://youtu.be/kjWJFTVRFw8
- Demo location Bilbao Zorrotzaurre
  - Budget cutbacks in the municipality causing review of planned investments
- 6 Fellow Cities, Bratislava, Riga, Copenhagen, Budapest, Krakow, Matosinhos
  - No direct effect on plans foreseen

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ATELIER Experience, adaptations to the demo's

- Demo location Amsterdam Buiksloterham
  - The Republica development split apartments (going from 46 to 55), sold part of the apartments to investors instead of directly to individuals and changed construction planning to have more time for securing the hotel investment part
- Demo location Bilbao Zorrotzaurre
  - Municipal buildings need to be replaced with other ones, additional PV is being installed, part of the geothermal loop will be postponed

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ATELIER City Vision 2050, Main Objectives

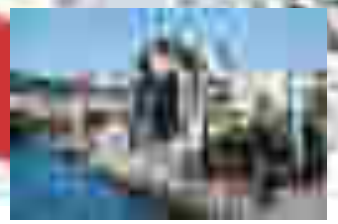
- Bold City Vision for each demonstrator & fellow city
- Update current action plans (SEAP & SECAP)


Copenhagen (Denmark)


Riga (Latvia)


Amsterdam (Holland)


Matosinhos (Portugal)


Bilbao (Spain)


Krakow (Poland)


Bratislava (Slovakia)


Budapest (Hungary)

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The objective

Develop holistic approach to build a **Bold City Vision for 2050** in each demonstrator and fellow city.

The approach

Based on *Cities4ZERO* methodology (Urrutia et al, 2020)

Step-by-step methodology that might support and help cities through the process of **co-developing** the most appropriate strategies, plans and projects as well as looking for **commitment of key local stakeholders** for an **effective transition**; all from an **integrated planning approach**.

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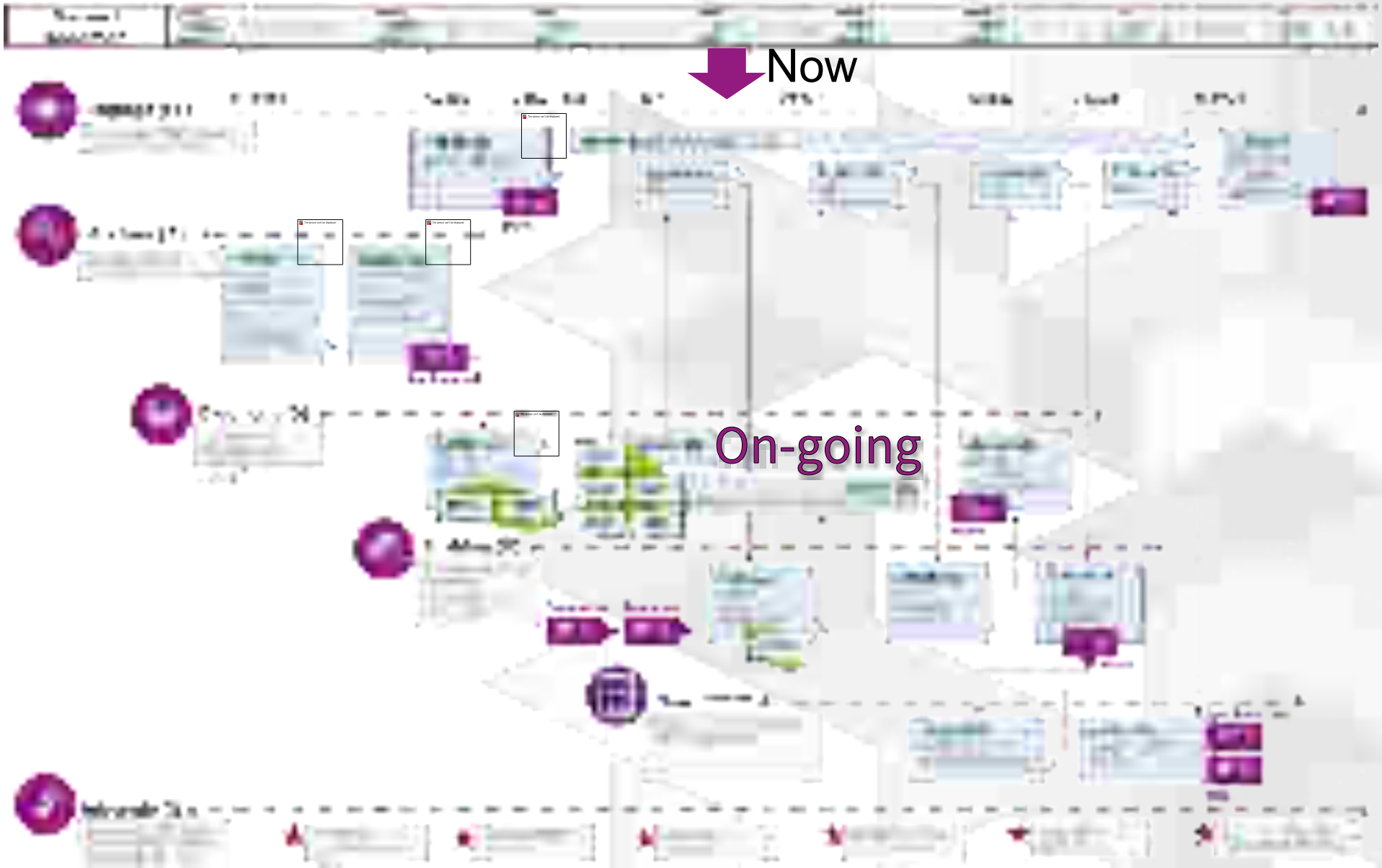
Achievements



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The main challenges

- Each city has their own characteristics: a flexible general framework is provided and adapted to specific local context.
- Proper engagement as a key for an effective process: Smart City Planning Groups with local stakeholders have been created in early stages of the process.
- Energy modelling requires huge amount and robust data: data quality guidelines have been created.
- Starting point and objectives of each city are different: lighthouse cities play a different role as front runners:
  - Bilbao: through developing the whole process for city vision creation.
  - Amsterdam, with the city vision already created: What happens next?

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ATELIER Innovation
PED Innovation Atelier (IA)

Involve the local innovation eco-system in tailoring and implementing the smart urban solutions in the PEDs. Support the establishing of PED Innovation ATELIERS in each LH and FC, including four innovation tracks. Capture best practices and lessons learned. Develop an EU wide replication concept for Innovation Ateliers.

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Establishing BIA

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Establishing Amsterdam IA

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ATELIER PED Replication & Upscaling

Objectives:

WP6 aims to create the necessary framework to foster early replication of ATELIER PED concept in Fellow Cities(FC) and to ensure that the PED concept in Lighthouse cities(LH) is replicated/up-scaled within their cities. WP6 approach is established by:

- A standard definition of PED for ATELIER
- Guiding the adaptation of the validated solutions in the LCs to other scenarios (cultural, social, economical and legal)
- Knowledge sharing from LCs to FCs. Regulatory and financial barriers overcoming.

Outcomes: Execution projects in fellow cities, and replication and upscaling plans of PED concept in all cities.

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ATELIER
PED Replication & Upscaling

atelier Positive Energy Districts

Achievements:

Matoshinos
Bratislava
Budapest
Krakow
Riga
Copenhagen

Technology, spatial, regulatory, financial, legal, social and economic barriers for PED implementation are analysed

City challenges and objectives on climate protection and the energy transition has been identified, as well as the PED implementation impacts that the cities would like to reach

PED area chosen and the evaluation of the baseline and technical solutions has started

Feed PED Design studies & PED Replication methodology

WP6 activities are supported by capacity building activities

Peer-to-peer sessions (FC Exchange knowledge among them about one previous energy Project)

City tours to be organised in the future

Training sessions: Technical partners (CAR, TEC, TNO, AMS, etc.), Bilbao and Amsterdam capacitate FC to overcome barriers

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ATELIER
PED Replication & Upscaling

Challenges found so far	Activities to overcome them
Not a standard definition for PED concept	Follow up on EU initiatives. Be flexible enough on the definition and establish the minimum requirements
Data collection for energy baseline of the selected areas	Help cities to estimate the demand from modelling tools , national statistics, etc.
City tours, staff exchange, and physical meetings can help on FC capacity building	Organize agile and interactive online meetings. Postpone physical meetings until covid situation improves

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ATELIER citizen engagement goals

- Facilitating participation in the deployment of PED services and technologies
  - How residents envision their PEDs
  - Questions of usability, control and governance
- Developing general insights on effective and transformative citizen participation and stakeholder engagement
  - Energy citizenship
  - Energy communities
- **Opportunity to study PEDs as *districts*: buildings + communities, in their urban context**

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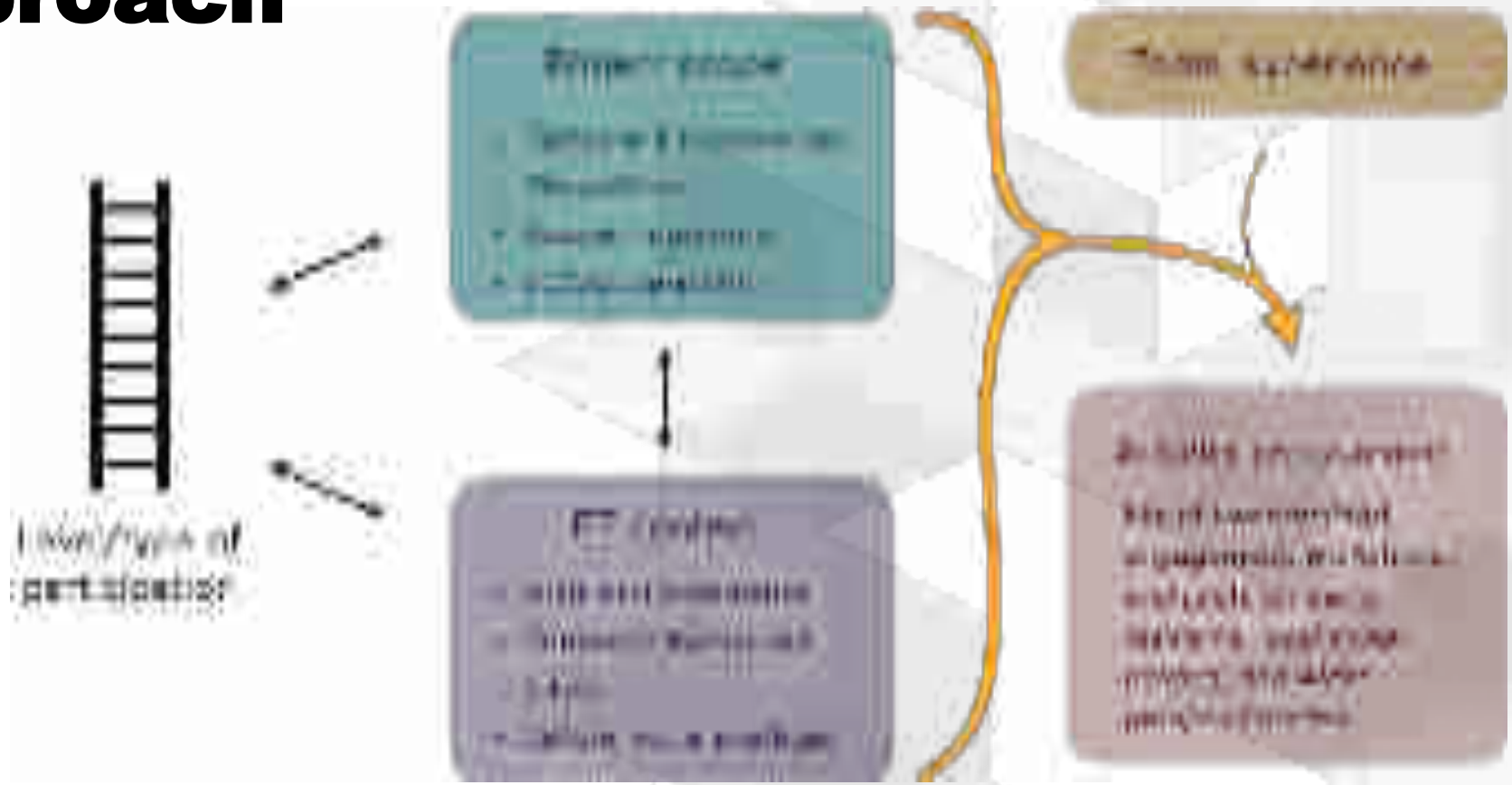
Citizen engagement approach



- How can citizen participation and stakeholder engagement in a smart city / PED context be shaped so that these processes add to citizens' and stakeholders' empowerment as energy citizens and communities?

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Example activities for engagement plan

Amsterdam

- ‘Walking’ as a research tool
- An ‘energy festival’
- Artistic intervention
- Co-creation sessions on energy data commons and the local energy market

Bilbao

- Low-level engagement
  - ✓ Artistic creations
  - ✓ Communication and dissemination activities related with Energy Citizenship
- Medium-level engagement
  - ✓ Seminars, workshops, forums, events, etc.
  - ✓ Enterviews with neighbours, associations, or ATELIER related stakeholders
- High-level engagement – cocreation process
  - ✓ Citizen science activities for the co-design and co-implementation of ATELIER solutions
  - ✓ Competitions and/or hackathons (facilitated by Bilbao EKINTZA)

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Citizen engagement achievements, hurdles, plans

Achievements

- Social analysis and engagement plan
- Theoretical framework of engagement (levels)

Hurdles

- Access to „future“ residents

Plans

- Implement programme
  - Boost ATELIER activity and visibility
  - Consolidate hypotheses (research questions)
  - Set up direct conversations with particular target groups, taking stock of the intensity of engagement that fits them (community building
- Continuous communication, codesign

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For more information, look at

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