

THE ONE BILLION EURO CHALLENGE

HOW TO PAY FOR CLIMATE-NEUTRAL AND SMART
CITIES

OCTOBER 11, 15:00-16:30 CEST



EXTENDED PROGRAMME
11-22 OCTOBER 2021
TOWARDS 2030: RESHAPING THE EUROPEAN ENERGY SYSTEM
#EUSEW2021

Smart Cities Marketplace



THE ONE BILLION CHALLENGE: How to pay for climate-neutral and smart cities



EUSEW Extended programme, October 11 – 15.00-16.30 CEST



Housekeeping



Ask questions in the tab "Questions"



Ask for help through the "Questions" also



This event is recorded



We invite you to join in polls



You cannot unmute yourself



Raise your hand to request to be called



Agenda

- **Introduction by Moderator Georg Houben**
- **Speaker presentations**
 - **Maria Kamargianni: Climate Neutral Mobility**
 - **Sergio Olivero: Climate Neutral Buildings**
 - **Magnus Andersson: Climate Neutral Heating & Cooling**
 - **Jessica Stromback: Climate Neutral Energy**
- **Discussion and questions from the audience**



Introduction

Georg Houben

***European Commission, DG Energy, Unit B1,
Coordinator for the Smart Cities Marketplace
and contact point for Smart Cities & Communities***





Why Climate-Neutral and Smart Cities and why now?

- **Approx. 75% of the EU's population lives in cities, of which approx. 55% in Small & Medium Sized Cities.**
- **Approx. 85% of the EU's GDP is generated there.**
- **Cities deliver on jobs, growth, resilience, investments, innovation and CO₂ reduction, to name a few ...**
- **... and cities are at the forefront of the COVID-19 crisis!**



The EU's support to cities

Total of
€1.8 trillion of
investment

- **European Green Deal** delivering – inter alia – a massive **renovation wave, cleaner transport and logistics** as well as a number of measures for the digital transition in cities!
- **Horizon Europe: Mission on Climate-Neutral and Smart Cities**
- **InvestEU**
- **Next Generation EU** with **€750 billion** targeted at **COVID-19 recovery, supporting the delivery of the European Green Deal**
- **Recovery fund**



Lighthouse Projects – an indispensable asset

- **8 editions** of H2020 Lighthouse project calls
- **18 Lighthouse projects**
- **48 Lighthouse cities**
- **76 Fellow & observer cities**
- **550 thoroughly tested smart city solutions implemented in more than 180 sites across Europe**
- **About € 430 million co-funded**



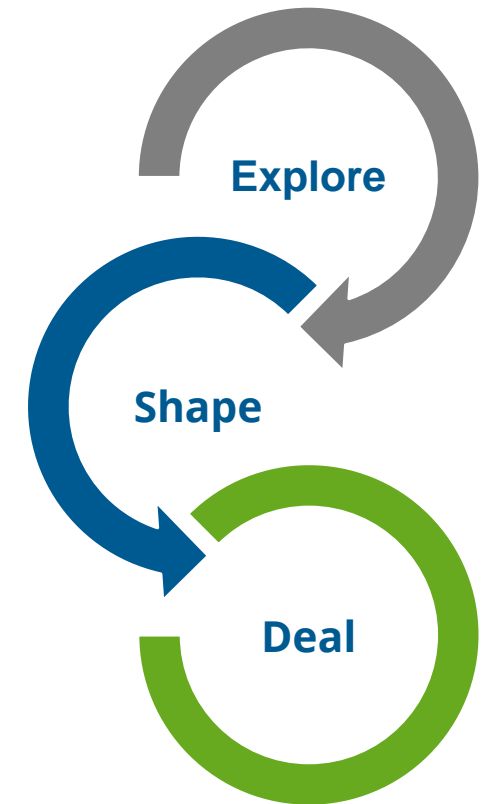
Getting it done! – Deployment, replication & upscaling The Smart Cities Marketplace's Matchmaking

Three phases

- **Explore.** See and learn what's next.
- **Shape.** Shape project and action plans.
- **Deal!** Create relations and opportunities for financing.

Approx. **130 projects** with an aggregated total budget of approx. **EUR 600 million** have been matched with investors' interests, so far!

More info: <https://smart-cities-marketplace.ec.europa.eu/matchmaking>





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Climate-Neutral Mobility

Prof. Maria Kamargianni

Professor of Transport Systems Innovation & Sustainability, Head of MaaS Lab

UCL Energy Institute, University College London





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Climate-Neutral Buildings

Speaker:

Sergio Olivero

***Leader of the "Deep Retrofitting Initiative" of the
Smart Cities Marketplace***

Energy Center of the Politecnico di Torino



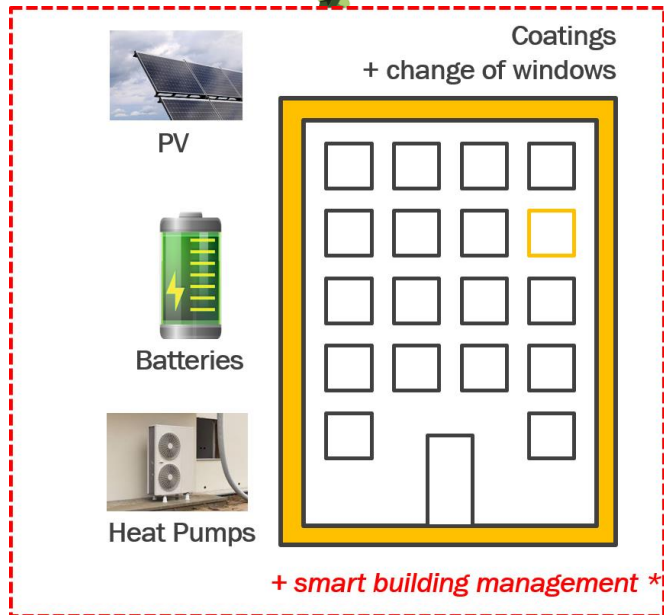


Italy as a “live” innovation lab

- In Italy today there’s **a lot of money** available (fiscal bonuses, incentives, grants) **for Energy Transition**.
- **Building renovation** (especially for *Multi-Family Houses* - MFH) and **Renewable Energy Communities (REC)** are at the center of this revolution.
- **Making thermal load electric** (i.e. PV associated with Heat Pumps and storage, with an improved thermal envelope) can **reduce fossil fuels up to 90%**
- As a result, **thermal bills** (heating and cooling) can be reduced **up to 70%**
- A typical MFH can save up to **80 tons of CO2/year** (and the price of CO2 is soaring)
- In Italy today there are two strategic needs: **Clustering** and **Governance**



ENERVEIA



ENERGHEIA: 100 Buildings for innovation

- Plan for the smart retrofitting of **100 Multi-Family Houses** (MFH) by 2024 [**100 M€**]
- Eligible to 110% tax credit swap
- Low-risk investment & increase of asset value
- Up to 70% reduction of heating costs** starting from the first year
- Retrofitted buildings become *Smart Buildings* (BMS, sensors, eCar charging points, prosumer)
- Certifiable CO2 emissions reduction via BMS**
- MFHs can act as Renewable Energy Communities** and get additional incentives to cut electric bill (up to 30%)
- Coherent with the EU's *Renovation Wave*: focus on mobilisation of investments in building renovation



ATENES-AUC

ATENES
AUC ENERGIA EQUA E SOSTENIBILE

*No-profit association for
sustainable and fair energy
transition through collective self-
consumption*

Atenes Auc is a no-profit association co-founded by **ACEA Pinerolese Energia** (Energy Utility) **Tecnozenith** (ESCO and construction company) and the **Renewable Energy Community "Energy City Hall" of the Municipality of Magliano Alpi** (the first REC of Italy) and is going to operate to foster **Energy Transition in urban areas**.

Focus on **Multi Family Houses (MFH)** also referred to as *Condominiums*) powered by energy systems based on **collective self-consumption**.

As most buildings in Italian cities are residential MFH, collective self-consumption and related incentives -as well as the opportunity to set up communities of flat-owners- can work as catalysts for the urban renovation process.





ATENES-AUC - Objectives

Charging **flat-owners, tenants** and **citizens** with a pivotal role in the **upgrading of the residential building stock**, promoting their awareness and active role.

Collect data and information and promote **data-based decision support systems**, with the major support of **Building Management Systems (BMS)**, **ICT** and **IoT**.

Promoting retrofitting of buildings, reduction of climate-change emissions and further steps in the energy transition of urban environments, in compliance with the “**Manifesto of the Energy Communities**” promoted by the Energy Center of the Politecnico di Torino.

Innovative business models aiming at valuable economic, social and environmental solutions.

Promoting **Renewable Energy Communities (REC)** and **collective self-consumers (AUC)** in compliance with the Italian legislation ruling the transposition of **RED-II Directive**.



Contact



Politecnico
di Torino



ENERGY
CENTER

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Head of Business&Finance Innovation

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President of the Scientific Committee



President of the Scientific Committee



Member of the Scientific Committee





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Climate-Neutral Heating and Cooling

Speaker:

Magnus Andersson

Financing Expert at the Celsius initiative

Partner at IMCG - Impact Management Consulting Group





Unlocking Financing for Climate Neutral heating & Cooling

- Challenges and recommendations



 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 774199



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 86404



EXCITING TIMES

TECHNOLOGY DEVELOPMENT

- Part of the climate neutral energy system- Integration with other energy vectors
- New innovations within the sector: 6th generation of Heating & Cooling.

NEW BUSINESS OPPORTUNITIES

- Part of future business as sustainable Bio-CCS projects, etc

HOWEVER HEATING & COOLING SYSTEMS ARE PROVEN

- Technology & system
- Business models

ABUNDANCE OF SUSTAINABLE CAPITAL





CHALLENGES

EVEN IF THE TECHNOLOGY ARE PROVEN, A LOT OF OTHER AREAS ARE UNCERTAIN.

- Ownership traditions – public respectively private
- Business model is changing : Centralized to less decentralized
- Market development predictions, subsidies.
- Permits, Acceptance, etc



Projects are still unique, which makes it costly, time consuming, and risky to develop



To the wider investor community the understanding of heating and cooling investments is limited



RECOMMENDATIONS



Recommendations

@ Investors Bring in people from the industry in the due diligence process: avoid overestimating risk and make sure you understand the business model

@ Project owners Align the project ideas to the expectations of the investors: address the return, risk, liquidity and sustainability of your investment

...in sum investors and project owner Standardisation for project assessment - would increase market readiness of projects and reduce due diligence cost



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Climate-Neutral Energy

Jessica Stromback
Chief Executive Officer
Joule Assets



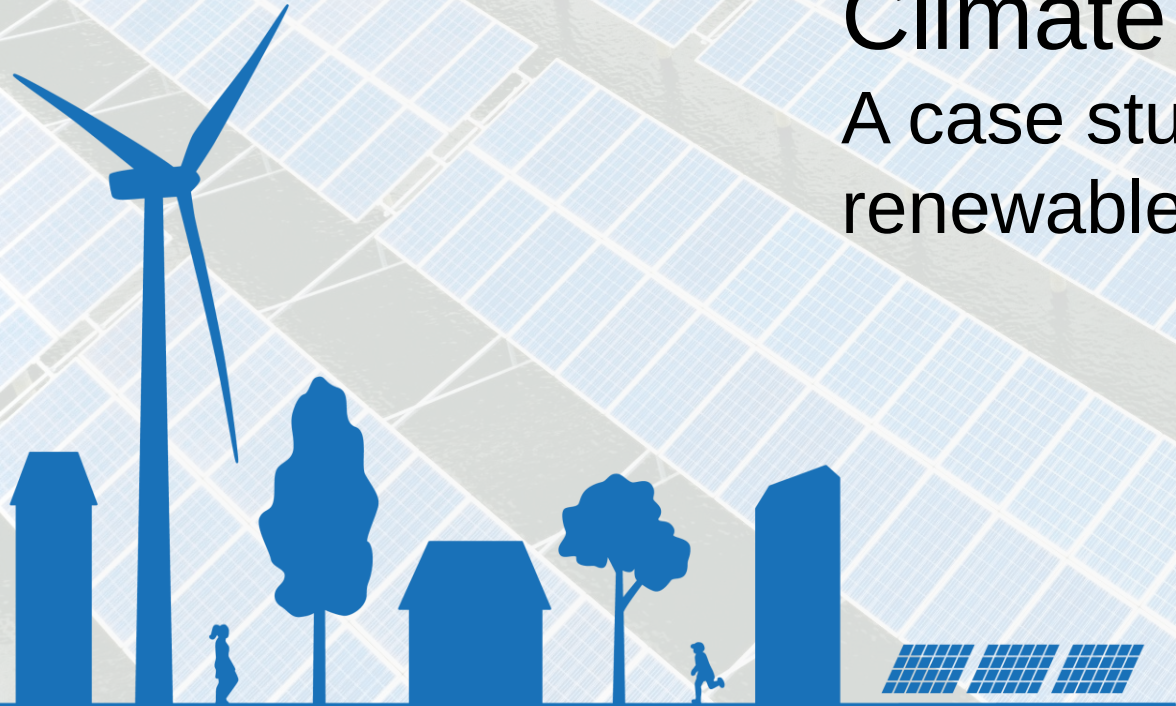


JOULE
ASSETS

Smart Cities

Climate Neutral energy:

A case study of at scale uptake of renewable solutions for cities in the US



Who **We** Are in the USA

Creating the sustainable energy future, today

What Problem Does CCA Solve?

The uptake of renewable energy is too slow to fight climate change and meet NY's climate action goals. Joule spurred change toward Community Choice Aggregation in NY

What Do We Do Today?

Joule and other CCA administrators enables at-scale uptake of clean energy solutions.

How does Community Choice Aggregation work?

Through Community Choice Aggregation, municipal leaders have the authority to move their residents onto clean energy solutions, all at one time. A CCA Administrator:

1. engages with the Municipality who passes the Community Choice Aggregation law
2. contracts the resources **in the place of** the utility of last resort.
3. runs and manages the program

How counterparties **earn**

Creating the sustainable energy future, today

1.

Our difference:

Uptake of renewables within a municipal opt-in campaign: **1% -5%**

Joule acceptance rates of renewables within a municipality opt-out programs: **85%-90%**

2.

How we earn:

- The administrator is paid by the energy providers a fee per MWh of energy contracted, delivered and managed
- The residents gain **10% off** solar credits
- Also includes low income residents

3.

What we earn today:

Community Solar Offering:

- Upfront average today customer acquisition fee
- Ongoing 25 years, kWh management fee

Electricity supply:

- Ongoing for 2 years

Joule's regulatory innovations' positive impact in New York

In 2015 Joule successfully introduced NY State CCA regulation. Since then, in NY State:



148 municipalities representing **3.2 million people** have passed local laws to enable CCA. Including **1.2 million** Low to Medium income residents



Over **770,000 Tons** of carbon dioxide emissions, avoided



3 million MWh of renewable energy supply were provided to over 51 municipalities



Over **117,000 hours** of public education provided



THANK YOU!



Jessica Stromback,
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Poll 1

What sector do you see as most important to achieve Climate Neutral Cities

- *Mobility*
- *Buildings*
- *Heating & Cooling*
- *Energy*
- *We need all domains to work together!*



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Discussion

What cooperation models do we need to build the huge financing operations needed?

- What's the role of blended finance?
- How can cities develop attractive financial schemes?
- Can local green bonds be a solution?
- How can the experiences from different European Initiatives, projects and cities help guide the way?



Ask questions in the tab "Questions"