

celsius
Summit



December 10

– Mission Possible –

Policies for the Urban Heat Transition

Today's programme



9:30	Opening Session Moderator: Emilia Pisani, Communications Officer at Johanneberg Science Park Welcome - Paul Voss, Managing Director of Euroheat & Power Local and regional planning for district heating and cooling Best examples of local, regional and national planning which benefit clean and efficient heating - The Dutch gas-free programme: Joram Snijders, Senior Policy Officer, Dutch Ministry of the Interior and Kingdom Relations - Strategic Heating and Cooling planning in Slovenia: Damir Staničić, Researcher at Jožef Stefan Institute - Integrated energy and climate planning in Karlovac: Tomislav Novosel, Project Manager REGEA - Heat-zoning and decarbonisation of buildings: Susanna Erker, spatial and energy planner at the City of Vienna Discussion / Q & A Pushing the Accelerator – Lessons Learned from the Forerunner Groups - Getting started: Sophie Tempelton, Islington council - Waste Heat Recovery: John O'Shea, Energy Systems Analyst at Codema - LTDH: Paulius Martinkus, Vilnius šilumos tinklai Discussion / Q & A
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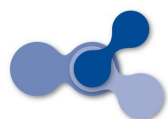
11:00	Coffee Break		
11:15	Hands-on workshops		
	Celsius City manifesto Moderator: Sofia Lettenbichler , Policy & Projects Manager at Euroheat & Power	Moving forward in South East Europe Moderator: Tomislav Novosel , Project Manager REGEA Note: this workshop will be per-invite & held in Croatian	The Smart City Roadmap Masterclass Moderator: Jorge Rodrigues de Almeida , Climate and Energy Professional, RDA
12:15	Conclusions		
	Summary of workshops - Group moderators Overall Conclusions: Get involved! - REGEA: Julije Domac , Director or REGEA - The Celsius hub - new project partnerships: Mats Berg , CEO at Johanneberg Science Park		
12:30 – 15:30	Networking afternoon: grab a coffee and have a chat with the other attendees!		
	Combined with the last Euroheat & Power “Mix, Mingle & Meet” session of the year		

Local and regional planning for district heating and cooling



Moderator:

Emilia Pisani



**Johanneberg
Science Park**



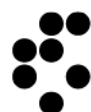
Joram Snijders



Ministry of the Interior and
Kingdom Relations



Damir Staničić



**Jožef Stefan
Institute**



Tomislav Novosel



REGIONALNA ENERGETSKA AGENCIJA
NORTH-WEST CROATIA
SJEVEROZAPADNE HRVATSKE
REGIONAL ENERGY AGENCY



Susanna Erker



**City of
Vienna**



Joram Snijders

Senior Policy Officer

Ministry of the Interior and Kingdom Relations
of The Netherlands

Sustainability in the built environment



Ministry of the Interior and
Kingdom Relations



Sustainability in the built environment

Lessons learned and experiences from the Netherlands

Joram Snijders

Ministry of the Interior and Kingdom Relations

Joram.Snijders@minbzk.nl





1. Dutch building stock

- In total 8.5 million buildings
- Approximately 1.6 million buildings before 1940
- Enormous variety in energy performance
- Dependence on natural gas and boiler heating systems
 - 88% of Dutch households have individual heating system
 - 12% district heating or other
- Need for insulation, heat pumps, sustainable district heating and renewable energy (e.g. solar)





Dutch Climate Agreement

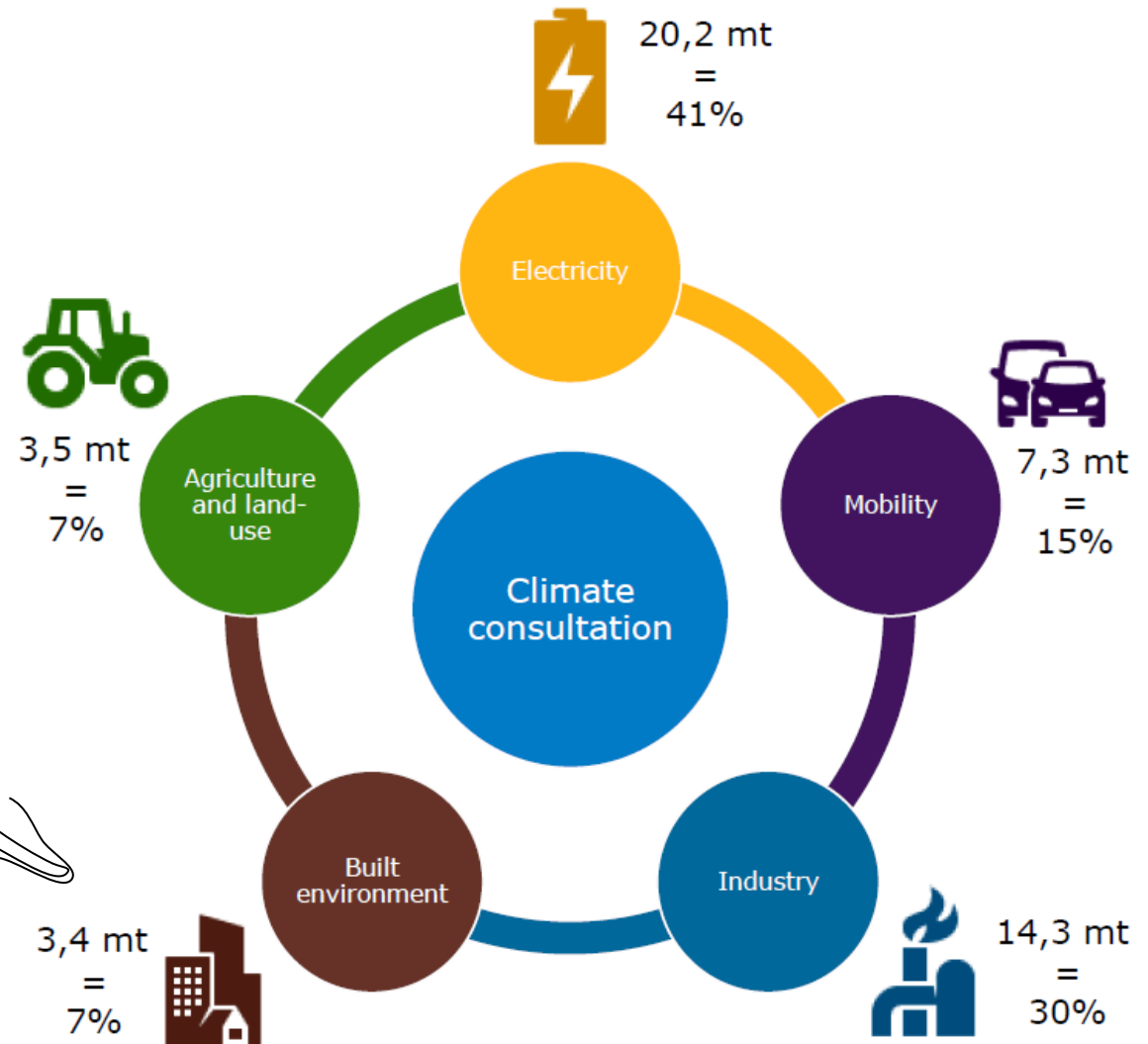
Role of municipalities and provinces

Dutch Climate Agreement over 100 parties involved in negotiations.

Main challenges: affordability, speeding up the process, public support and participation.

Municipalities in charge of planning and coordination. Provinces: spatial planning and regional cooperation.

- › Regional Energy Strategies
- › Heat Transition Vision and plans
- › District oriented approach

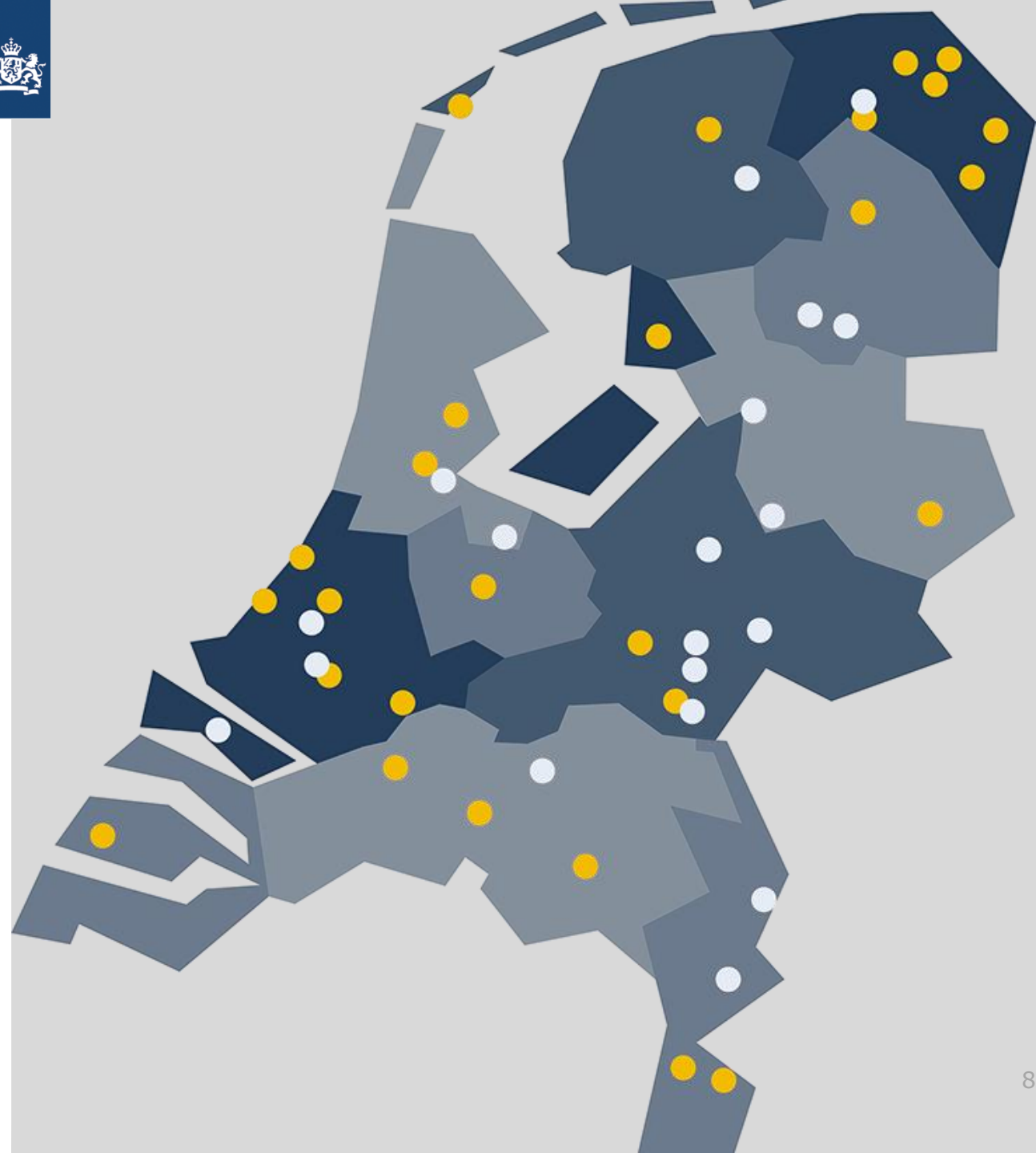




District-oriented approach

- 27 pilot neighbourhoods in 2019
- 19 pilot neighbourhoods in 2020
- Municipalities are in the lead, participation of inhabitants, planning, coordination of investments
- National government facilitates

We want to **learn**, share **knowledge** and **experience** with different heating and insulation techniques in different types of buildings and neighbourhoods in close collaboration with the inhabitants
→ **affordability, technical support, socio-economic issues, public space**





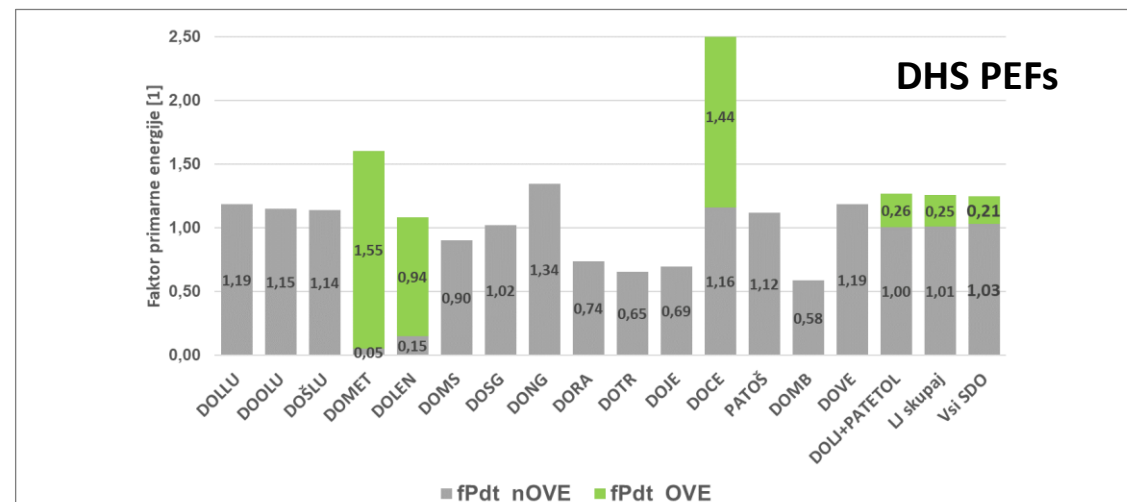
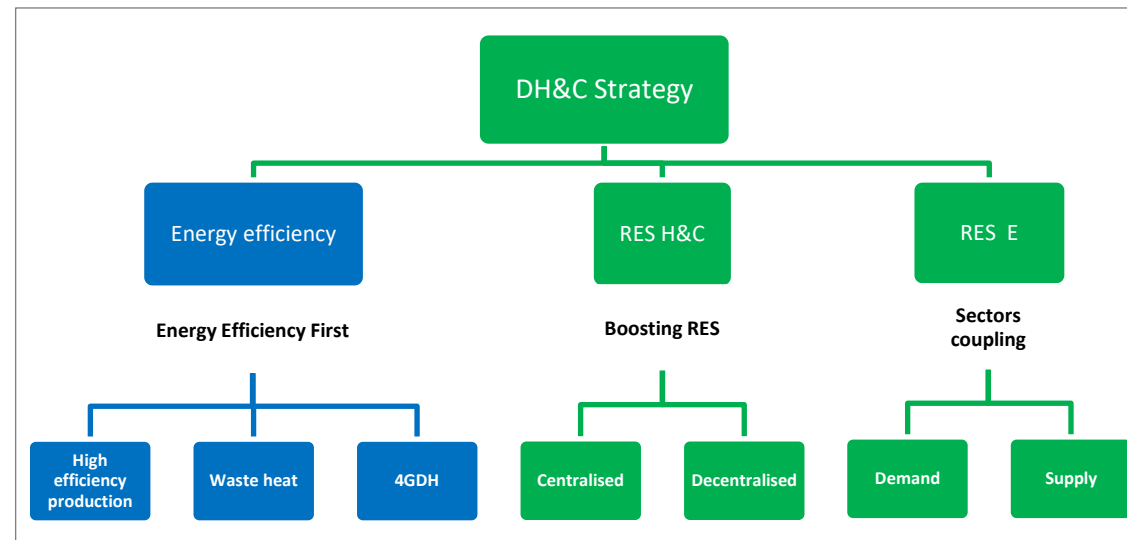
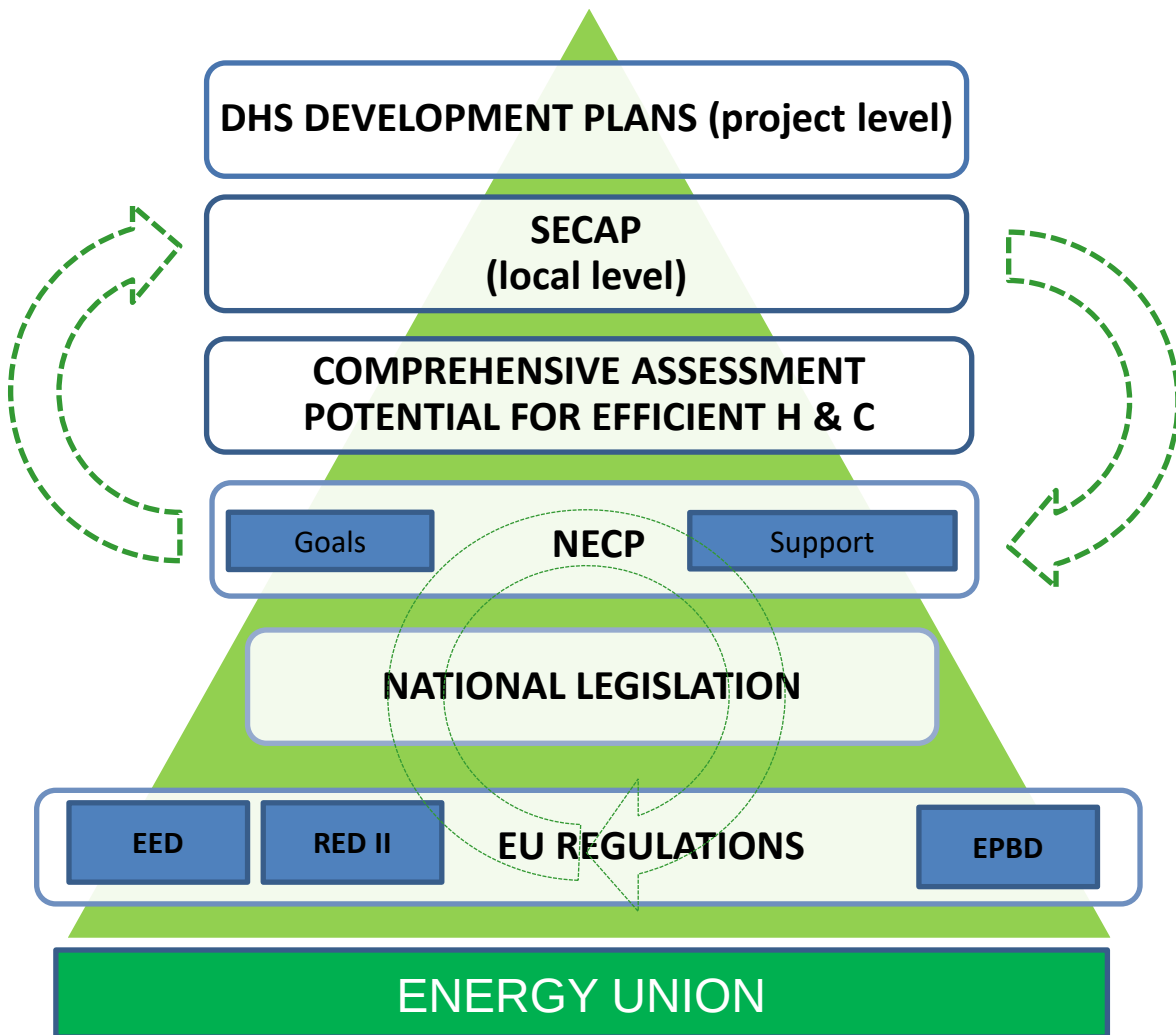
Damir Staničič

Researcher at the
Jožef Stefan Institute

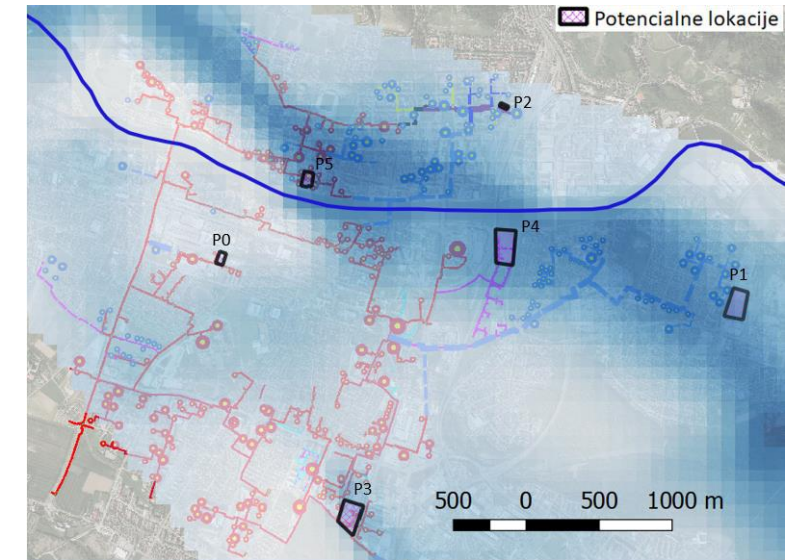
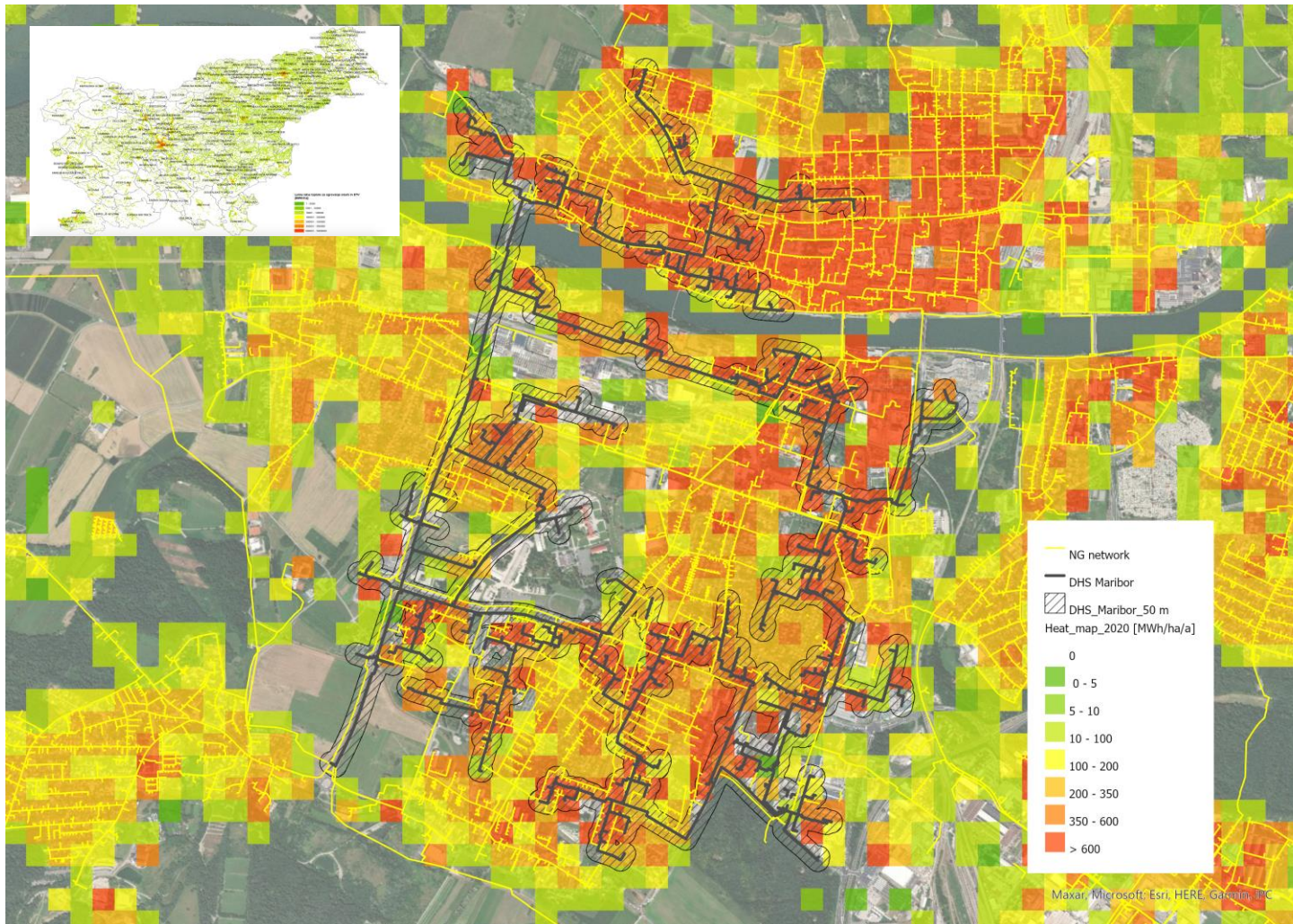
Strategic Heating and Cooling planning in Slovenia



The heat is on!



Mapping, modelling, planning!

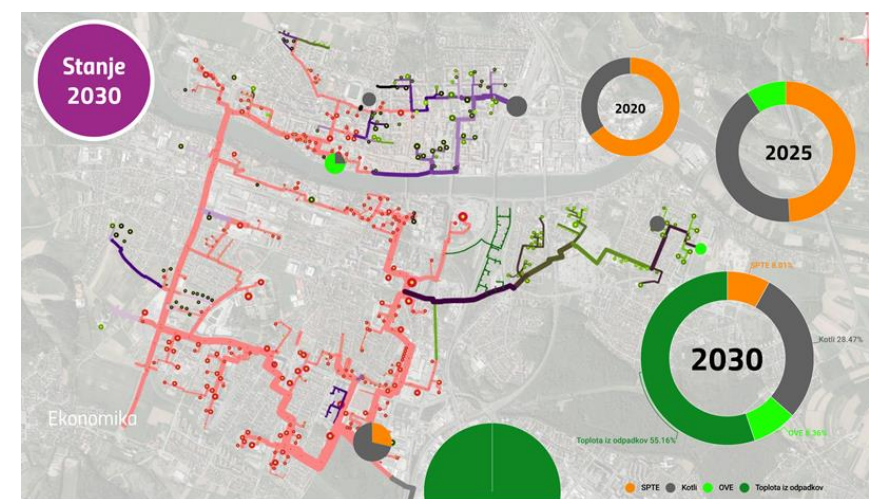
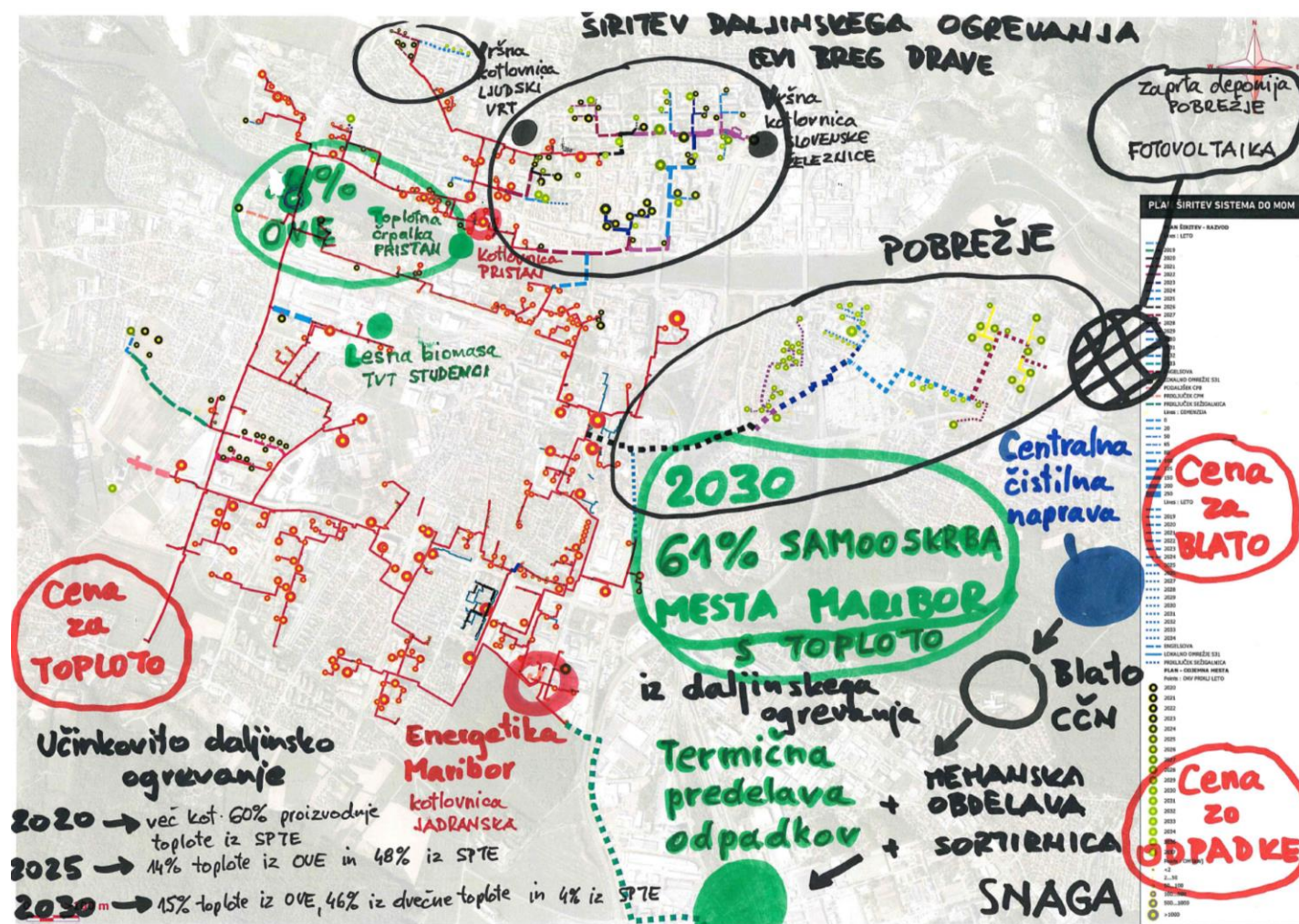


DH Heat Pumps (shallow geothermal energy, hydrothermal energy)



PM10 emissions (individual biomass boilers)

Act now!



REPUBLIKA SLOVENIJA
MINISTRSTVO ZA OKOLJE IN PROSTOR



LIFE IP CARE4CLIMATE (LIFE17 IPC/SI/000007) je integralni projekt, sofinanciran s sredstvi evropskega programa LIFE, sredstev Sklada za podnebne spremembe in sredstvi partnerjev projekta.



Tomislav Novosel

Project Manager at
North West Croatia
Regional Energy Agency (REGEA)

Energy and climate planning in the city of Karlovac, Croatia



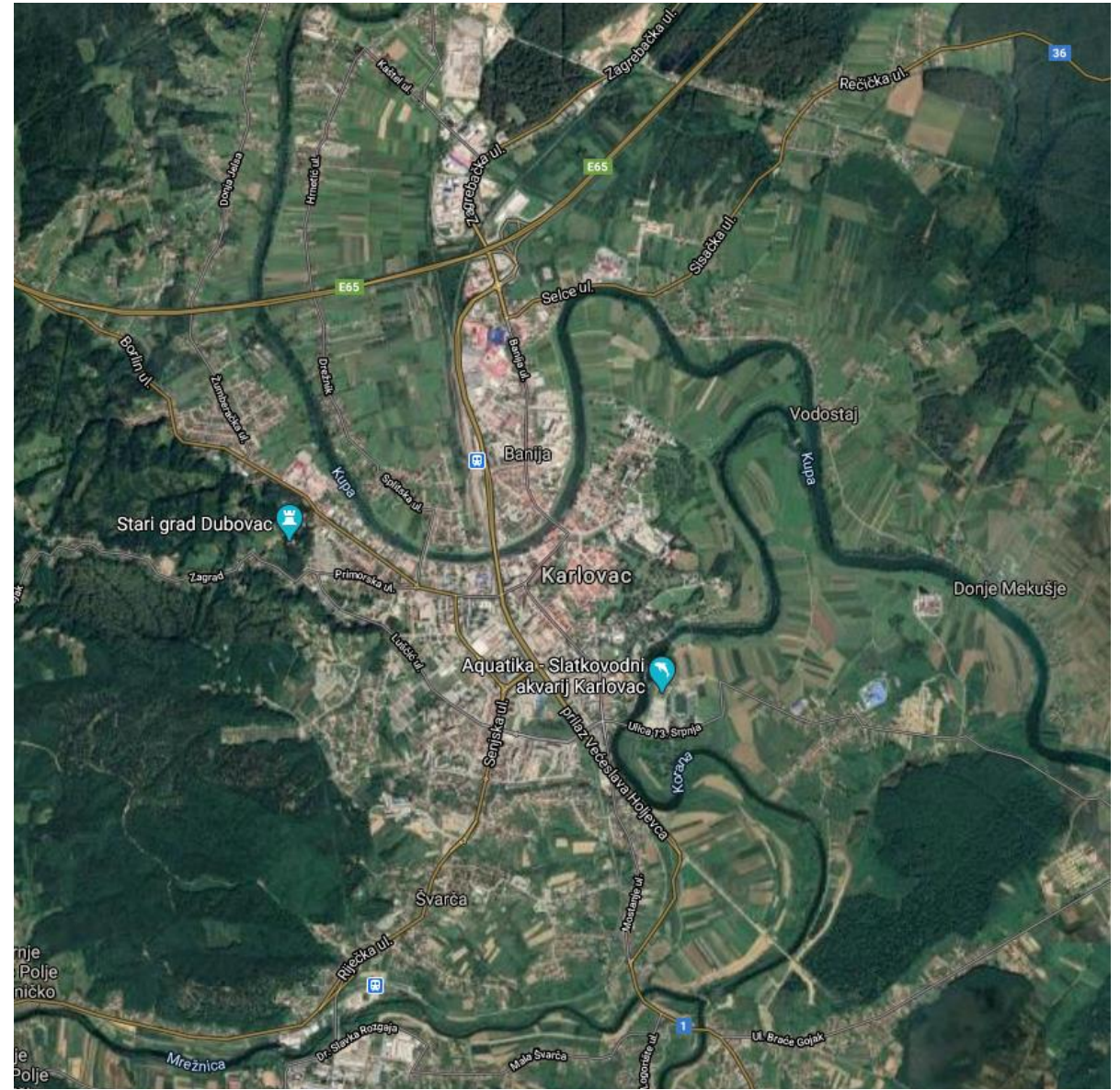


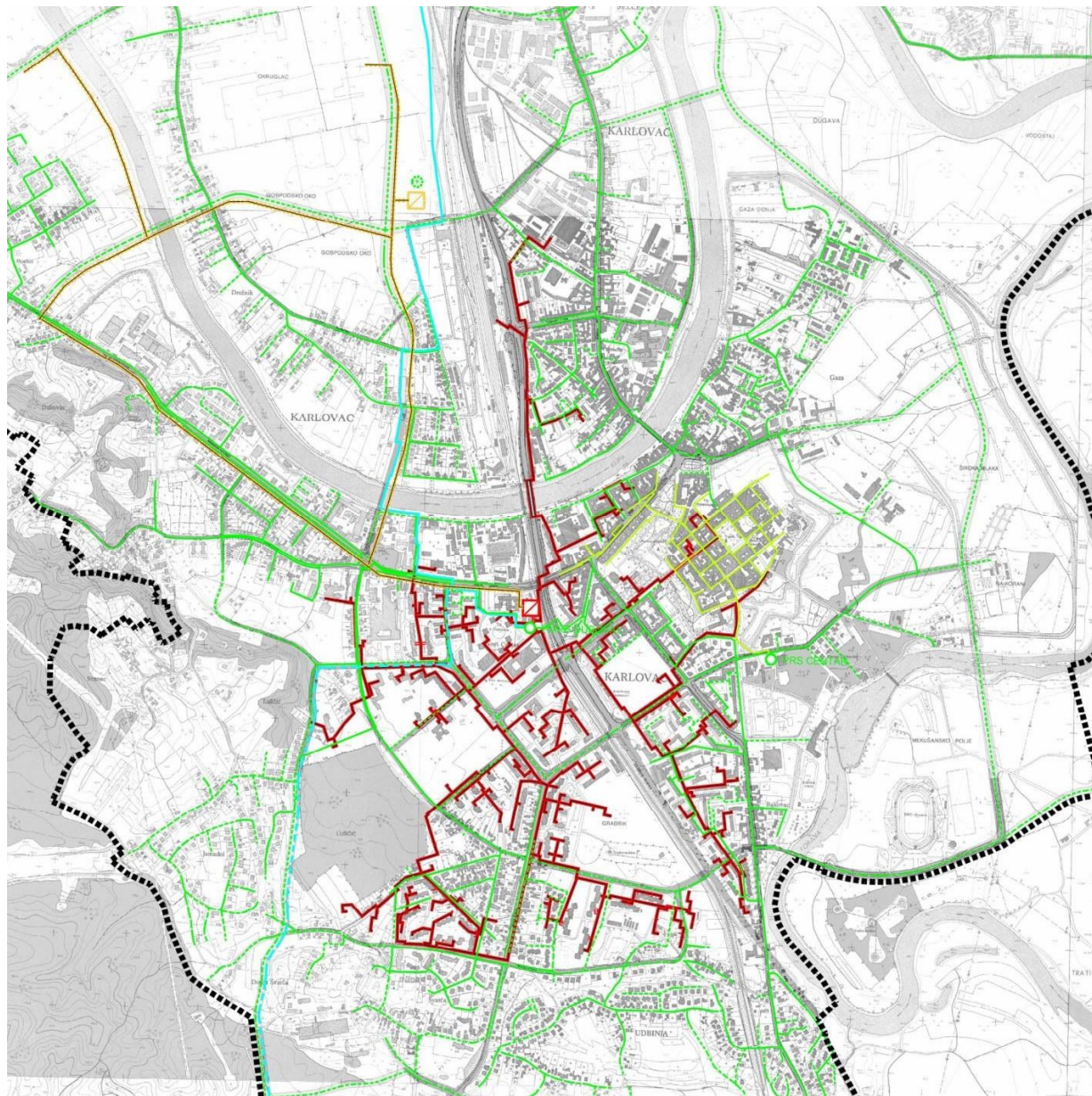
Integration of energy and climate planning in Karlovac

tnovosel@regea.org

REGEA







PP KŽ

PPUG KA

GUP KA

SECAP

E

Climate change mitigation

C

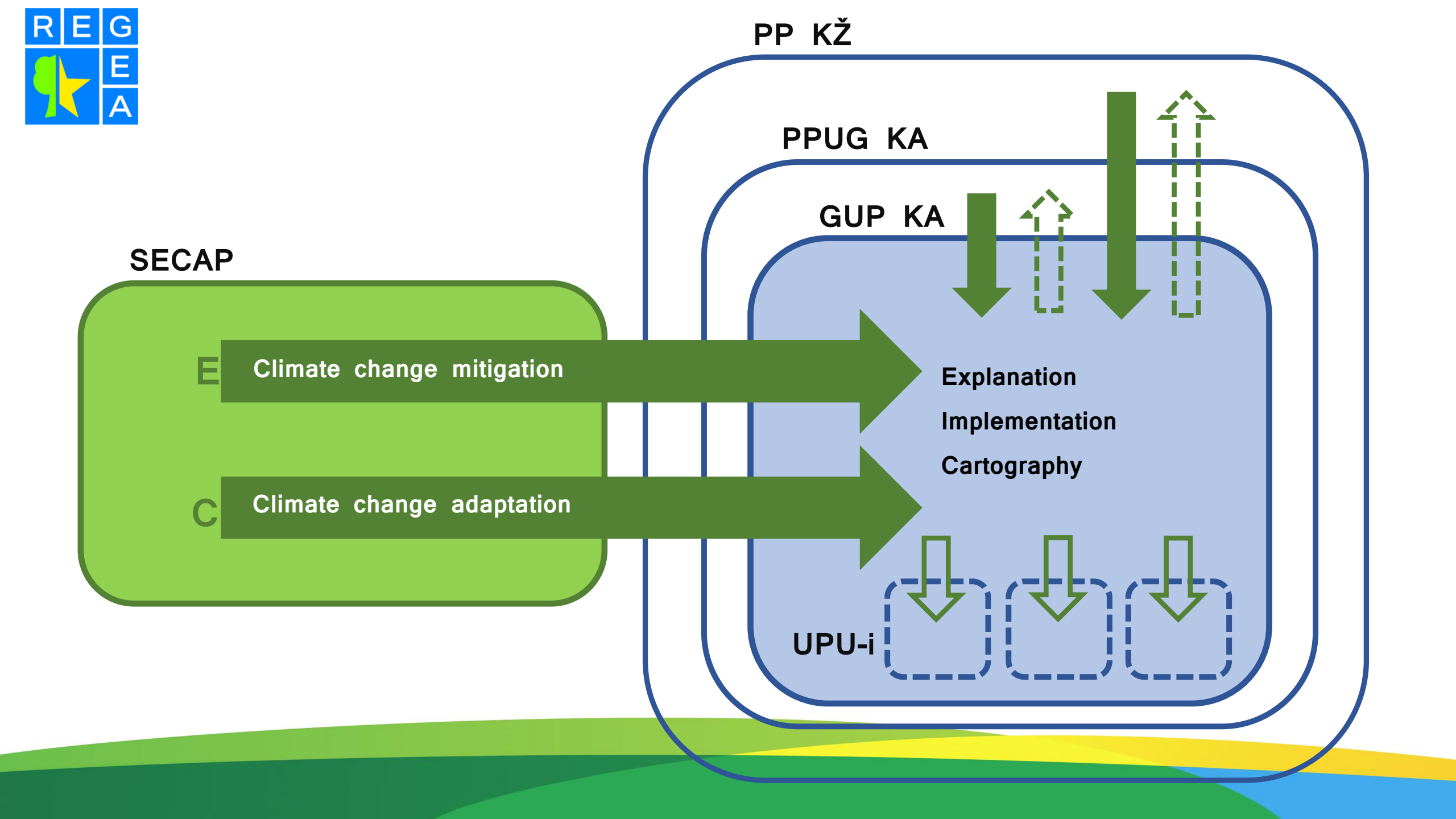
Climate change adaptation

Explanation

Implementation

Cartography

UPU-i



Thank you for your attention!

Tomislav Novosel

tnovosel@regea.org



Susanna Erker

Spatial Energy Planning Expert
City of Vienna

Transitioning the heating system in Vienna



**City of
Vienna**

Transitioning the heating system in Vienna

Susanna Erker,
Energy Planning in Vienna



New Coalition Agreement

- **Vienna's deadline for decarbonisation is 2040!**
- Within the next 2 years we need to develop a **“transitioning concept”** for the gradual conversion of fossil heating systems in existing buildings to district heating and renewable forms of heating by 2040
- **Heating, cooling and hot water preparation** will be part of this concept



Vienna

1.9 million people (2019)

2 million by 2027

415 km² area

50% green areas

Smart City Vienna Framework Strategy

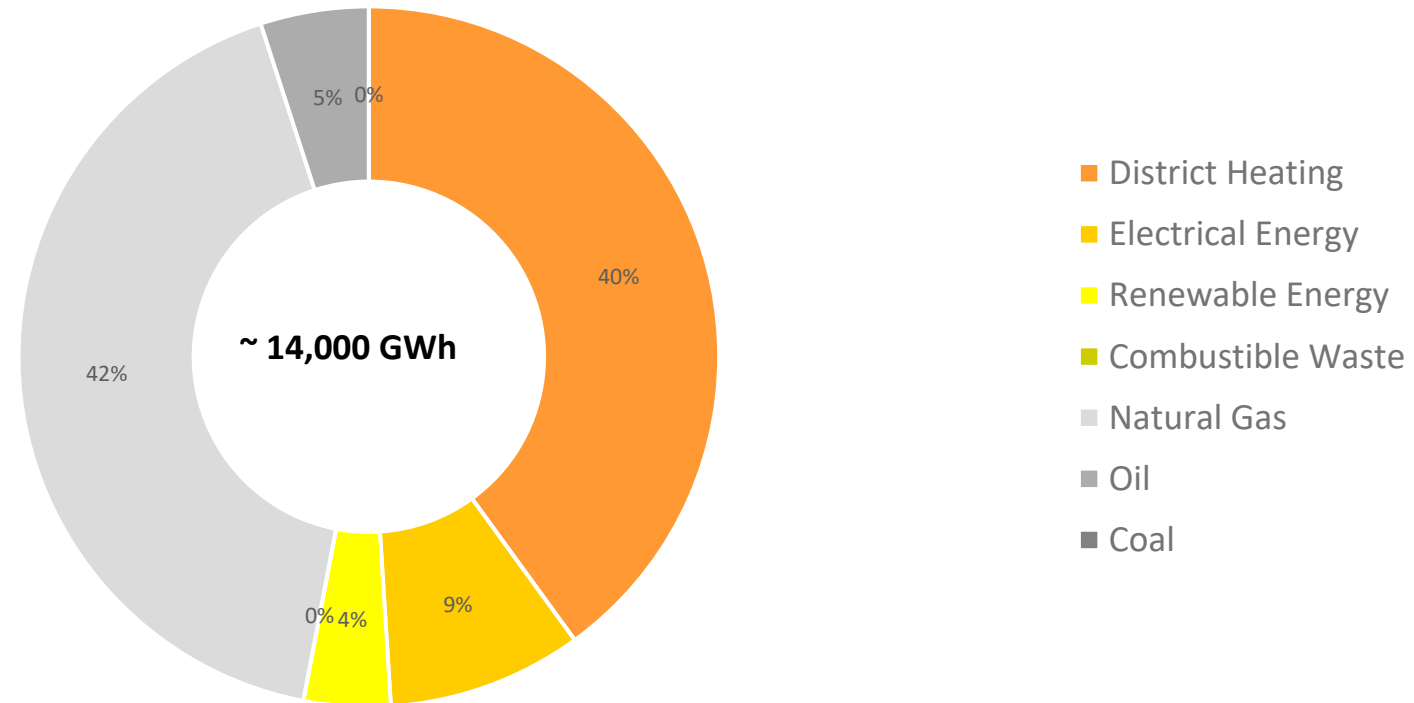
Pathways to decarbonise our heating and cooling systems

We need to...

- understand **new buildings** as part of the energy system
- integrate **waste heat and renewable energy** into the **district heating** systems
- use **electricity and green gas** for heating and cooling

→ **Starting point for Decarb City Pipes**

Share of energy sources for heating, hot water preparation and air condition (2017)

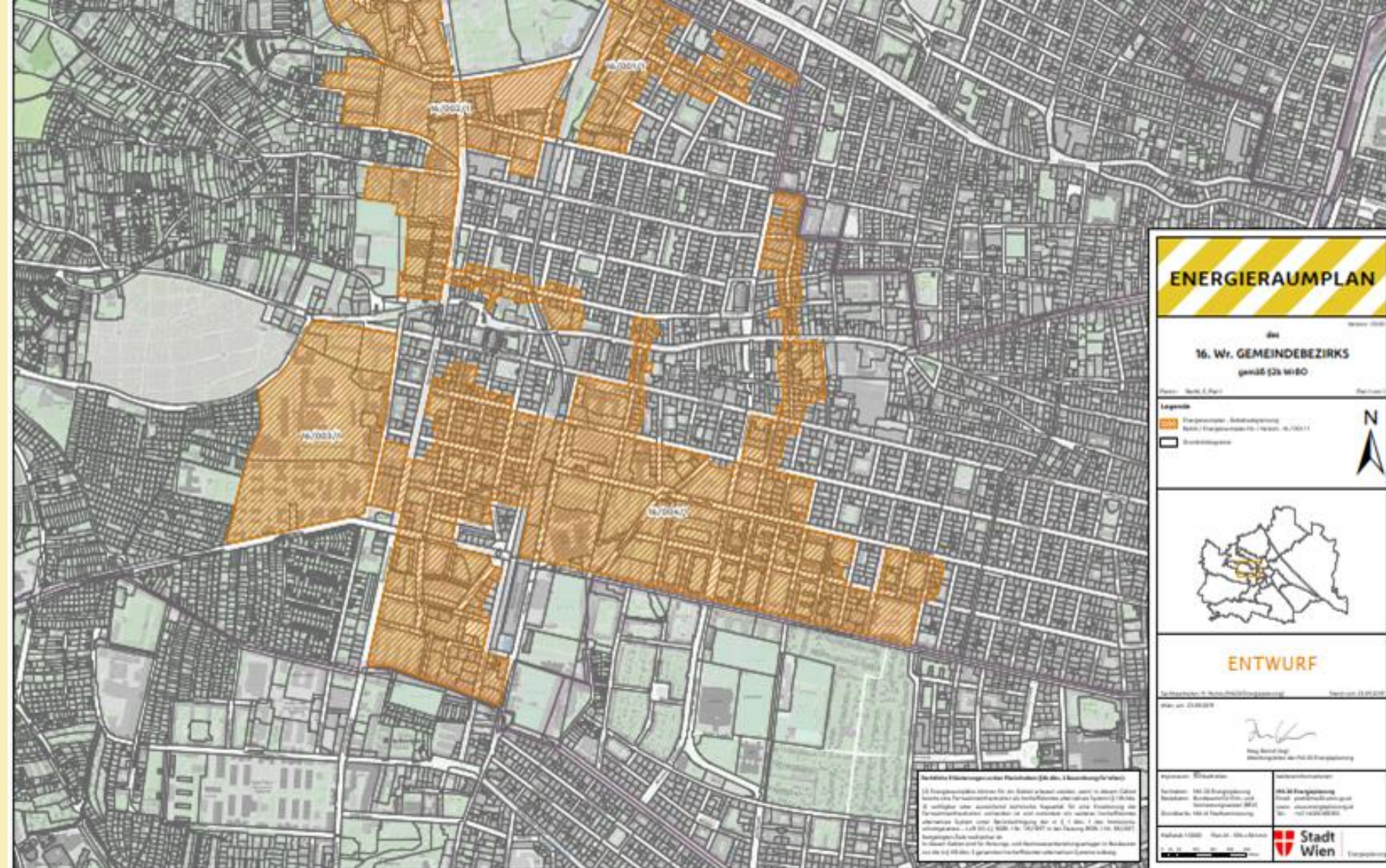


According to the Energy Report of the City of Vienna (2019)

Solutions for new buildings

Energy Zoning

- new buildings within designated areas must use **highly efficient, alternative systems** for heating and hot water preparation (DH and renewable solutions)
- avoid expensive parallel energy infrastructures
- 60-80% of new buildings will be affected by this regulation





Let's decarbonise!





The Celsius Forerunner Groups – Pushing the Accelerator



Moderator:
Emilia Pisani



Sophie Templeton



John O'Shea



Paulius Martinkus





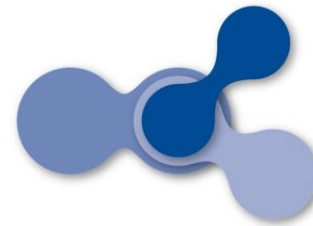
Emilia Pisani

Communications Officer

Celsius Initiative for Johanneberg Science Park

Moderator:

Policies for the Urban Heat Transition



**Johanneberg
Science Park**

celsius

Our purpose



Accelerate the **energy transition** through the deployment of **smart and sustainable heating and cooling solutions in cities.**





Celsius: a demand-driven collaboration hub



- Support **innovation, replication and scaling** of pilots and demonstrators.
- Continuous **knowledge sharing** through the newsletter, webinars, workshops and the Celsius Toolbox.
- Influencing European **policy**.
- **Hands-on support for cities** through the forerunner groups.

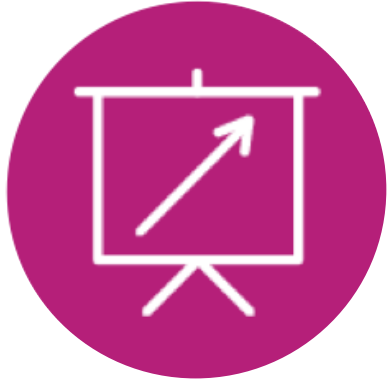
A sounding board for cities



Look at the big picture
to identify and
address the
challenging pieces.

- ✓ Co-creation process with and for cities based on peer to peer support
- ✓ Support cities plan and implement sustainable heating and cooling solutions
- ✓ Include systemic approach

Different groups – different focus



Getting Started



Residual Heat

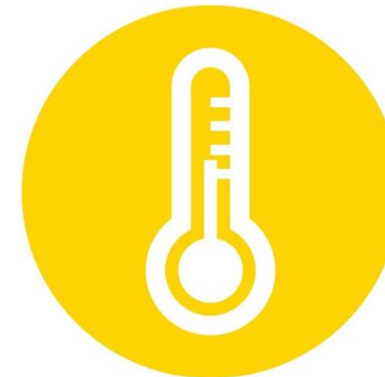


Cooling

Fossil Free



Low Temperature



For cities – with cities



- ✓ Supporting one spearhead city at a time
- ✓ Addressing key challenges
- ✓ Expert advice
- ✓ Exchange and inspire
- ✓ Avoid costly mistakes



Sophie Templeton

Energy Projects Engineer
Islington Council

Getting Started



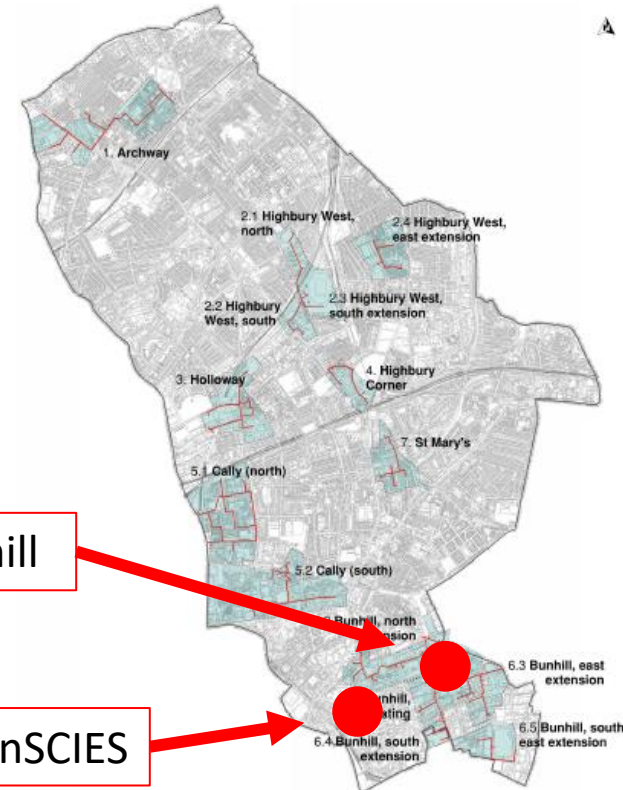
ISLINGTON

London Borough of Islington



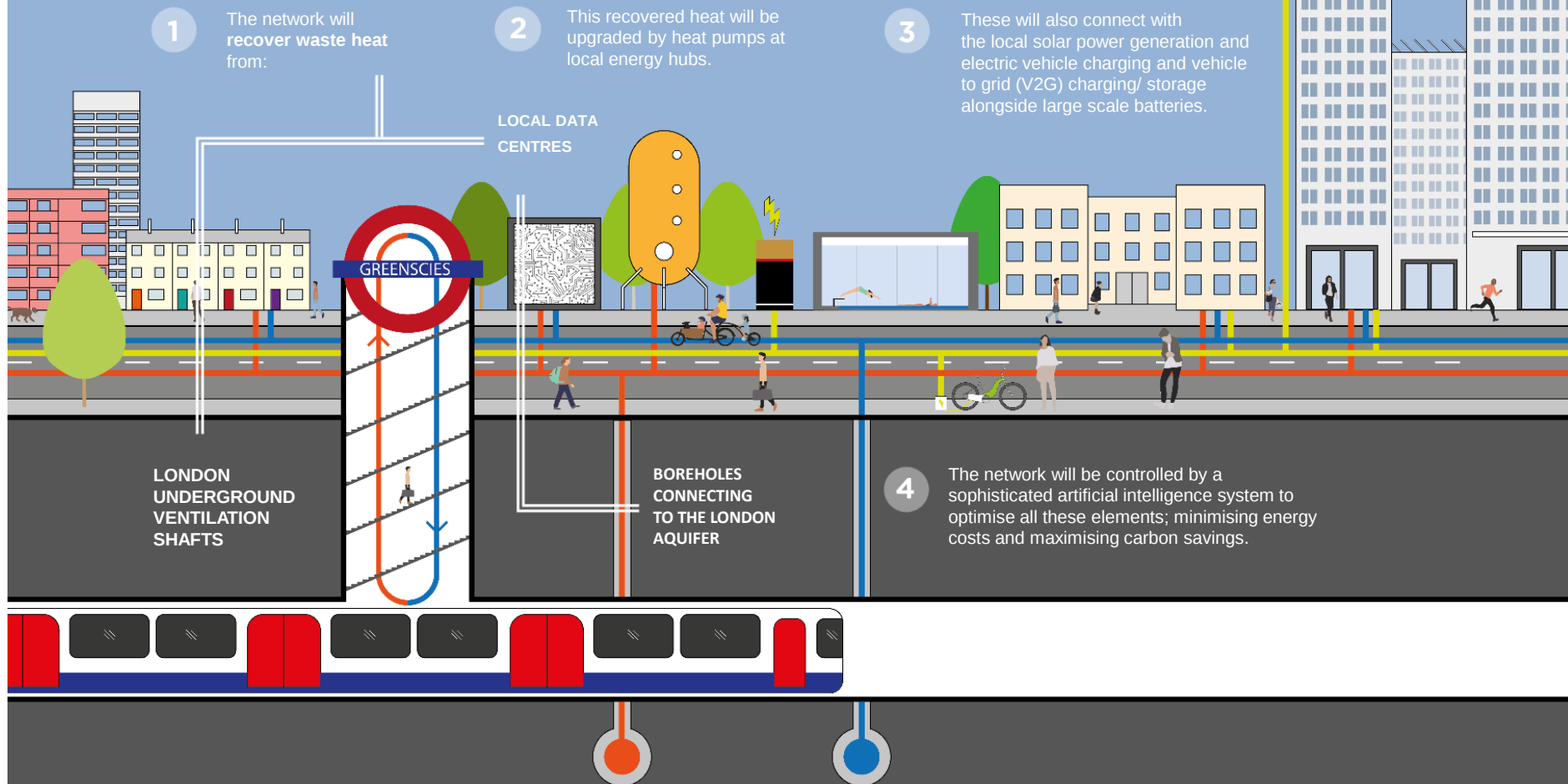
Bunhill

GreenSCIES



GreenSCIES network

How will GreenSCIES work?





Getting Started Group – Key Benefits





John O'Shea

Energy Systems Analyst at Codema,
Dublin's Energy Agency

Urban Waste Heat Recuperation



The background is a stylized illustration of a city and its surrounding landscape. It features various icons representing different energy sources and uses: solar panels, wind turbines, a factory, a house, a school, a hospital, a car, a truck, a boat, and a city skyline. A network of colored lines (green, yellow, and red) connects these various points, symbolizing the flow of energy. The lines are color-coded according to a legend on the right side of the slide.

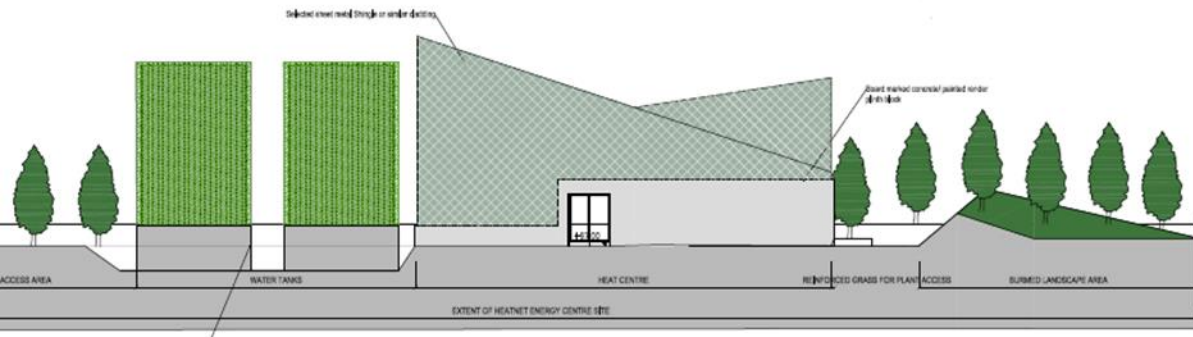
Lessons Learned from the Waste Heat Recovery Forerunner Group

JOHN O' SHEA
Energy Systems Analyst - Codema

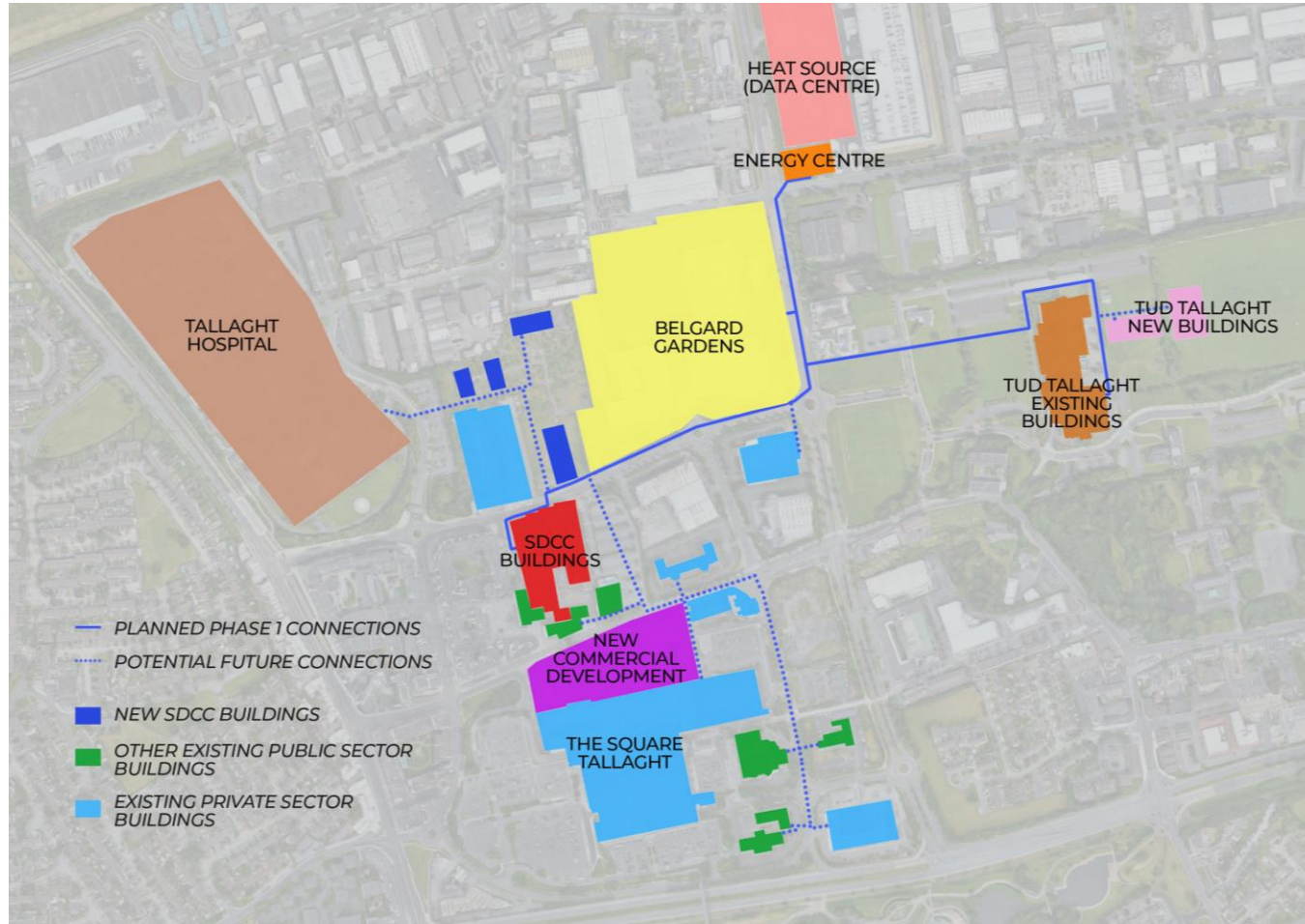
— Electricity
— Green Gas
— Heat

Tallaght District Heating Scheme

Heat Source: Data Centre Waste Heat



TDHS Project Overview



- First **not-for-profit public utility** in the country
- First to use **data centre waste heat** which **currently has no value**
- Output based procurement approach
- CO₂ savings of **~1,400 tCO₂** per year for proposed Ph. 1 and fossil fuel reduced by **100%**
- Cleaner air – **no particulates**
- **Provides cooling** to data centre as a by-product
- Integrates electricity and heat networks – allows **balancing of the grid, greater utilization of renewable electricity**
- Utilizes **off-peak electricity**

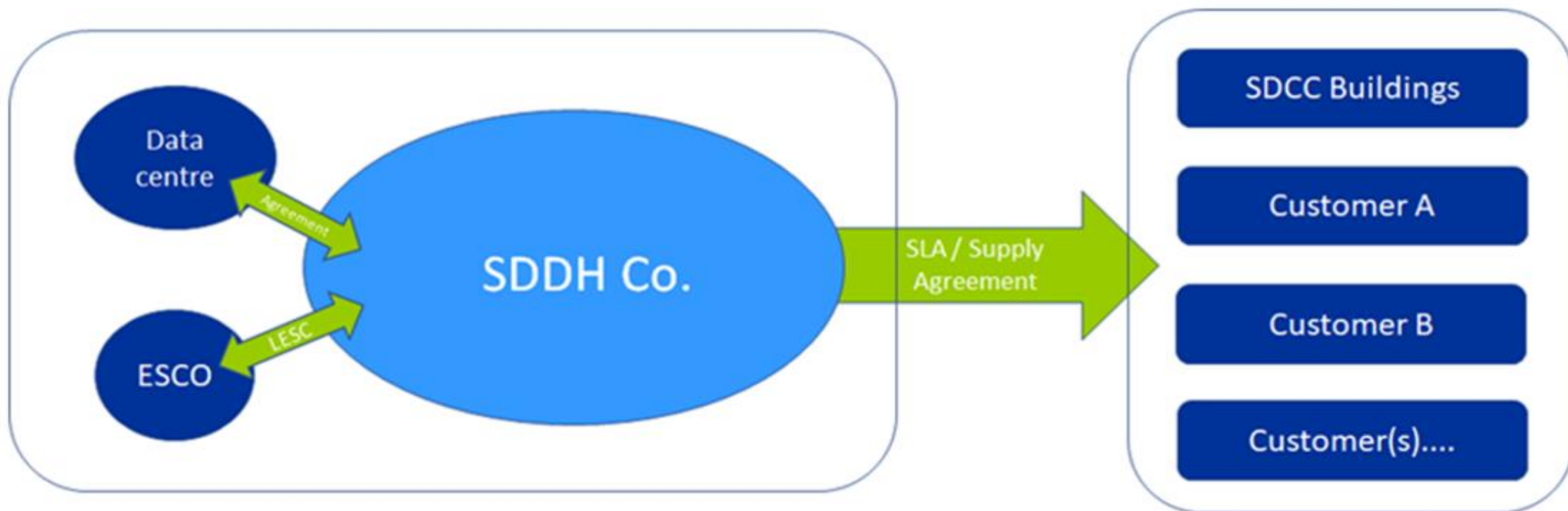
City-led, Industry-augmented Groups

Cities shape the discussions based on their needs – presents planned approach & any specific questions:

- Pricing Structures
- Negotiating Contracts
- Network Expansion



Contractual relationship between stakeholders



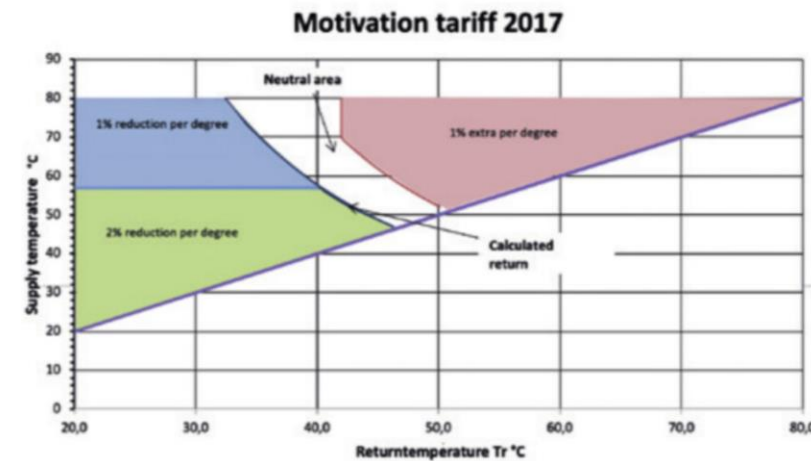
TDHS Procurement & Pricing – Handling Risk for DH Co.

- Output led approach to procurement – set out client requirements to be met (CO₂/MWh, RE/MWh etc.)
- Competitive dialogue procurement used – facilitate greater interaction with bidders to inform designs
- ESCo's bid in with a heat supply price
- SDDH Co. commits a % of the capital up front (supported with capital funding from CAF and HeatNet) – remainder supplied by ESCo
- A portion of the capital expenditure by ESCo is paid back as a fixed monthly payment over the duration of the contract
- O&M has both fixed and variable elements
- Technical risk was assigned to the ESCo but DH Co. retain control/ownership of the asset



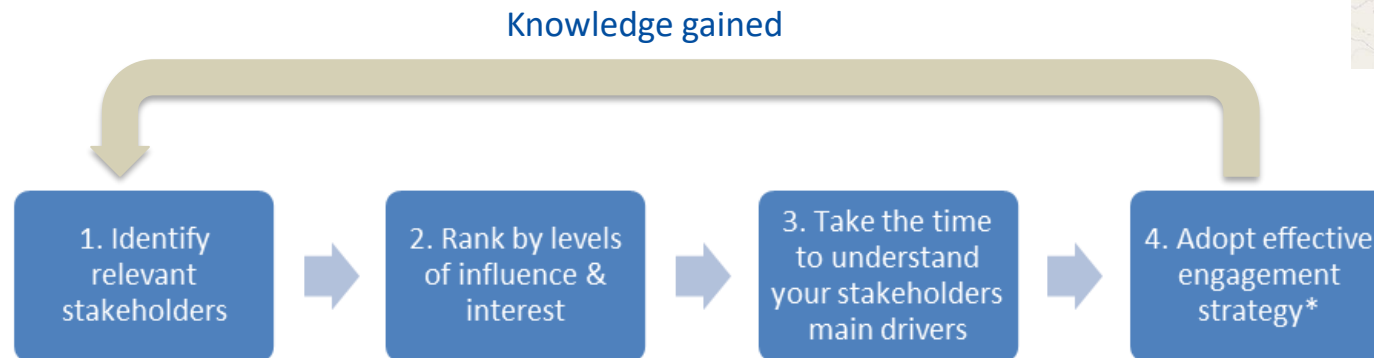
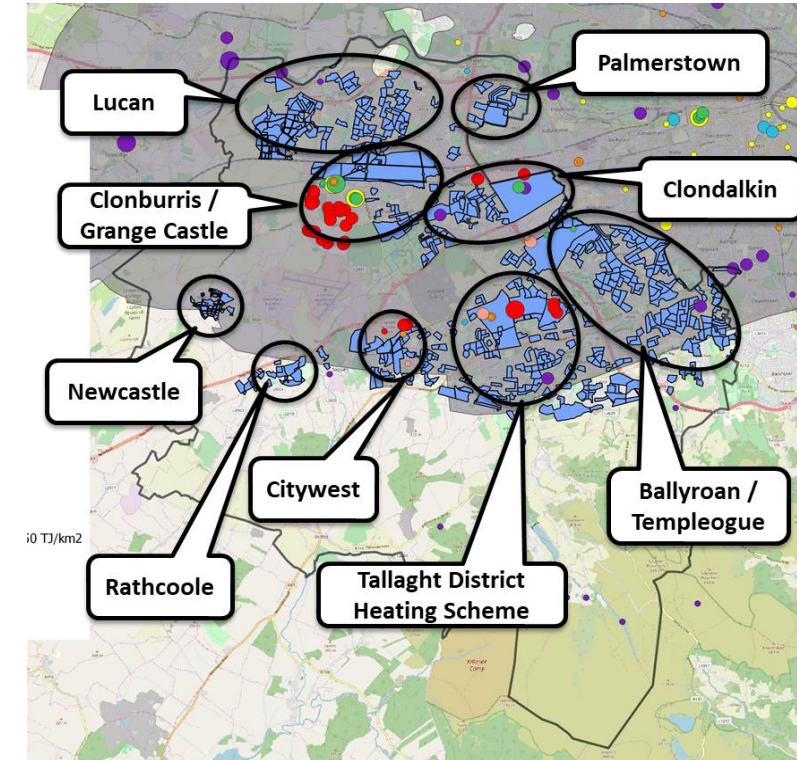
Customer Heat Price

- Heat prices are currently being developed with customers
- Heat price for customer needs to be competitive with the counterfactual
- Will likely have adjustment based on the return temperature
- Connection fees may be included up front or spread over the supply contract using more of a HaaS model (or a mixture of both) – will depend on preference – Fair & viable - **no more expensive based on LCC**
- Potential to use building thermal mass for load shifting/storage – potential increase in demand but reduction in peaks (benefit for DH Co.)
- Full price **transparency** – published on website
- **Contract length (open vs. longer term) certainty and stability for customer and new DH Co.**



Network Expansion

- Having customers – Importance of engagement and **transparency**
- Heat planning & zoning – Future-proofing for connection
- Streamline process for building M&E designers – PEF & CO2 factors for building reg compliance, specs for secondary system design (temps, pressures, capacity)
- EScO contract allows for extensions – SDDH Co. reserve the right to go to market



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Paulius Martinkus

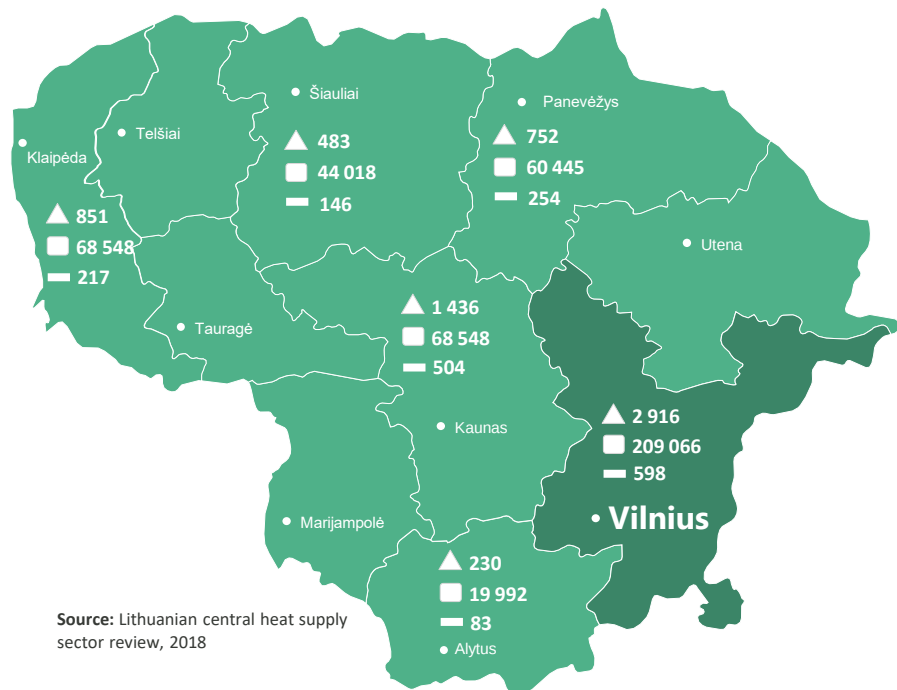
Chief Strategy and
Business Development Officer at
Vilnius šilumos tinklai

Low Temperature District Heating



Vilniaus šilumos tinklai

The company is the largest supplier of heat and hot water in Lithuania



- ▲ Heat supply, (GWh)
- Total number of clients
- Length of heat networks, km

● 26%
7 218 Connected buildings, units

● 33%
2 752 Annual heat supply, GWh

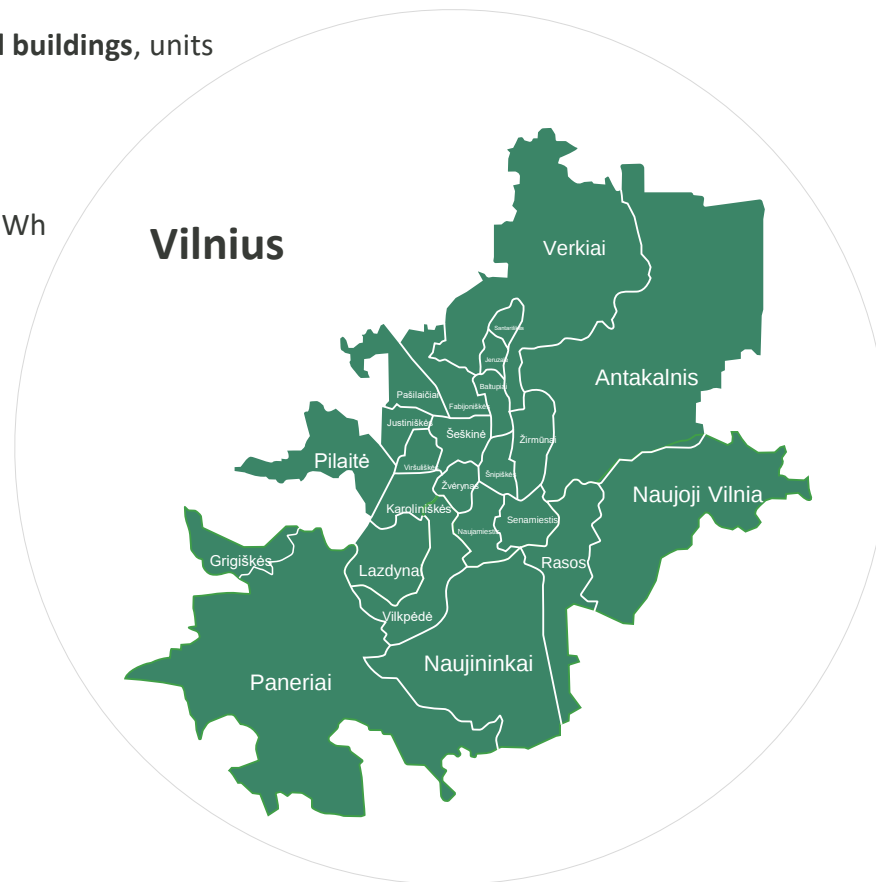
● 26%
1 751 Heat production (by own sources), GWh

● 31%
212 781 Number of clients

● 50%
258 000 Hot water meters, units

54% Heat produced from RES

● 25%
741 Length of the network, km



● VŠT part in total structure of all heating companies in Lithuania

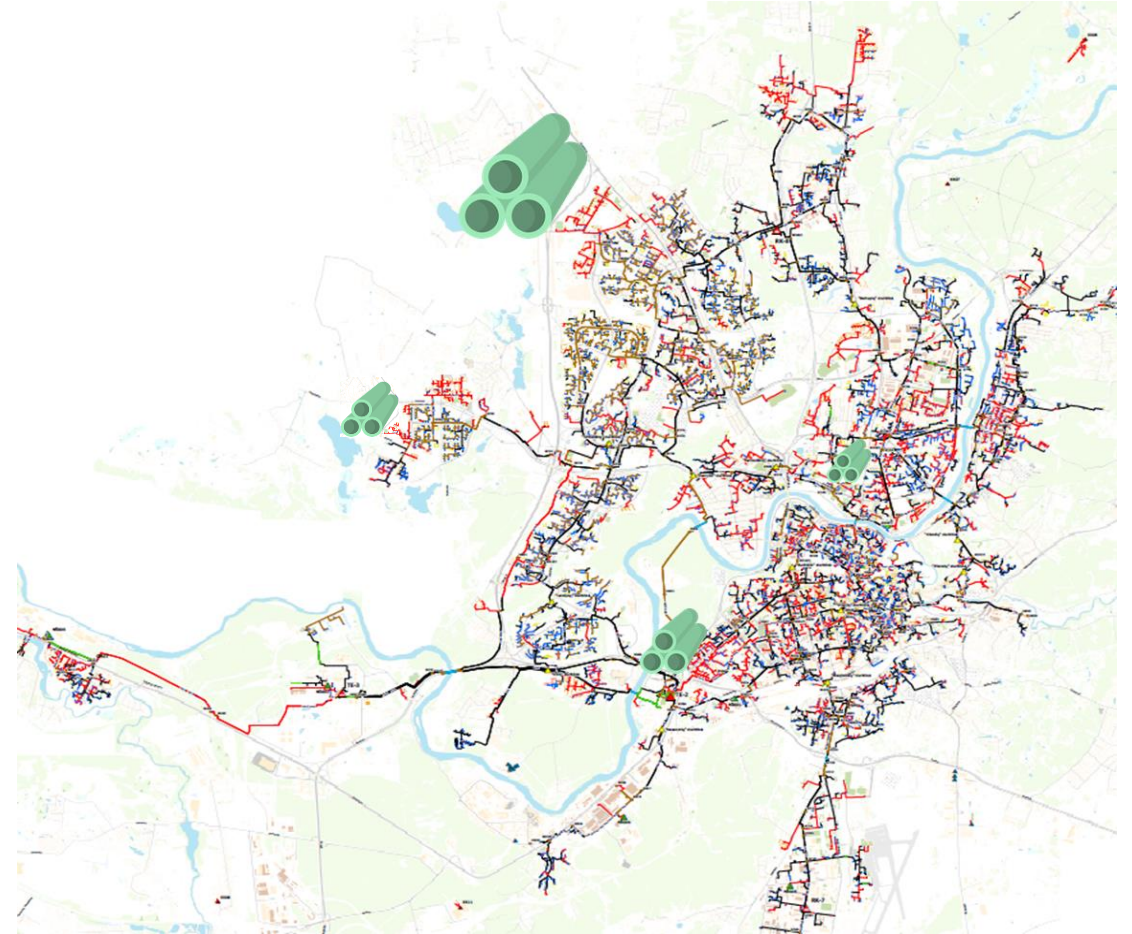
LOW TEMPERATURE DISTRICT HEATING CREATES NEW OPPORTUNITIES

Benefits of LTDH

Stakeholder engagement

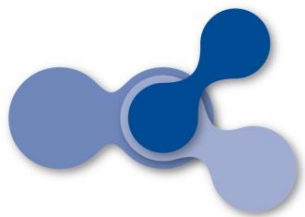
Technical set-up

Finance



BENEFITS OF PARTICIPATION

- Discussions with peers around Europe
- Access to experts
- Get feedback and improve



Johanneberg
Science Park



EUROHEAT
& POWER

Thank you!



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City of
Vienna



Jožef Stefan
Institute



ISLINGTON



Vilniaus šilumos tinklai

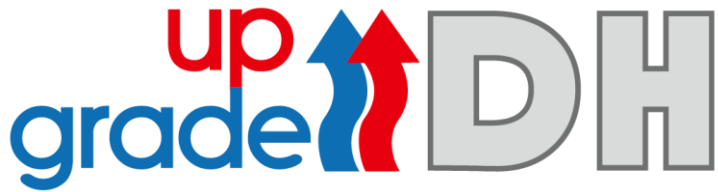
codema
Dublin's Energy Agency



Ministry of the Interior and
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In collaboration with



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EUROHEAT
& POWER



Ayuntamiento
de Logroño



Climate-KIC

Climate-KIC is supported by the
EIT, a body of the European Union



Swedish
Energy Agency



City of
Gothenburg



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Strasbourg.eu
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Covenant of Mayors
for Climate & Energy
EUROPE



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Hengelo



UMEÅ ENERGI



AKCIJU SABIEDRĪBA

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Climate-KIC is supported by the
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