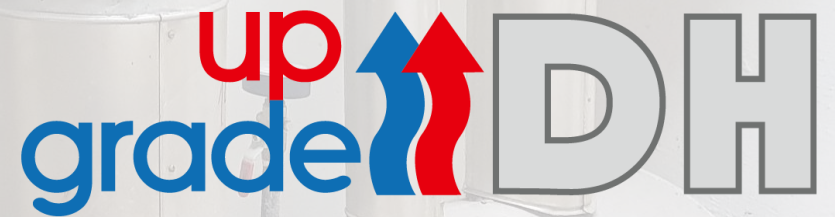


Retrofitting DHC

How to develop a successful action plan



Tuesday February 23 – 09:30 CET



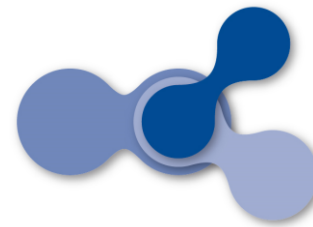


Emilia Pisani

Communications Officer

Celsius Initiative for Johanneberg Science Park

Introducing the Celsius Initiative



**Johanneberg
Science Park**

celsius



Funded by the European Union's
Horizon 2020 Programme





The Celsius Initiative

- a European project that lives on -



Funded by the European Union's
Horizon 2020 Programme



Our purpose



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



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Celsius: a demand-driven collaboration hub



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



A sounding board for cities



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

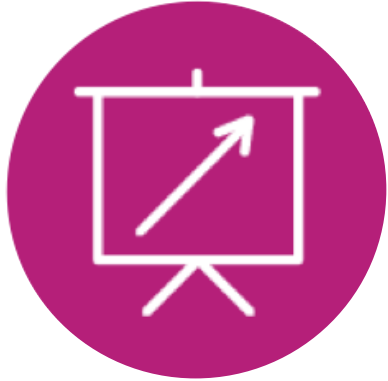
- ✓ Co-creation process with and for cities based on peer to peer support
- ✓ Support cities plan and implement sustainable heating and cooling solutions
- ✓ Include systemic approach



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Different groups – different focus



Getting Started



Residual Heat

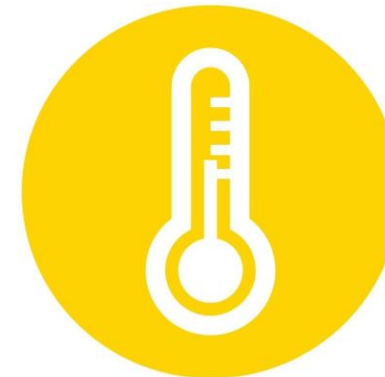


Cooling

Fossil Free



Low Temperature



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Multi-governance approach to developing successful action plans



Moderator:

Giulia Forgnone



Werner R. Lutsch



Jure Čižman



Jacqui Cullen

Strasbourg.eu
eurométropole



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Giulia Forgnone

Policy Officer at
Euroheat & Power

Developing action plans favourable for retrofitting district heating



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Horizon 2020 Programme



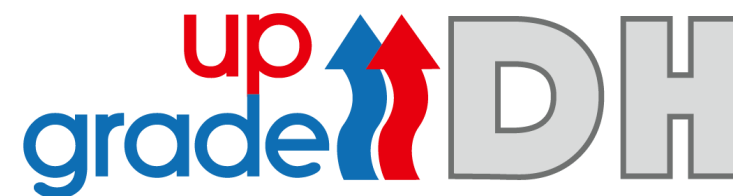


Werner R. Lutsch

Managing Director/CEO

AGFW | The Energy Efficiency Association
for Heating, Cooling and CHP

National action plans for retrofitting inefficient networks



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Retrofitting DHC – How to develop a successful action plan

Werner R. Lutsch,
Managing Director and CEO

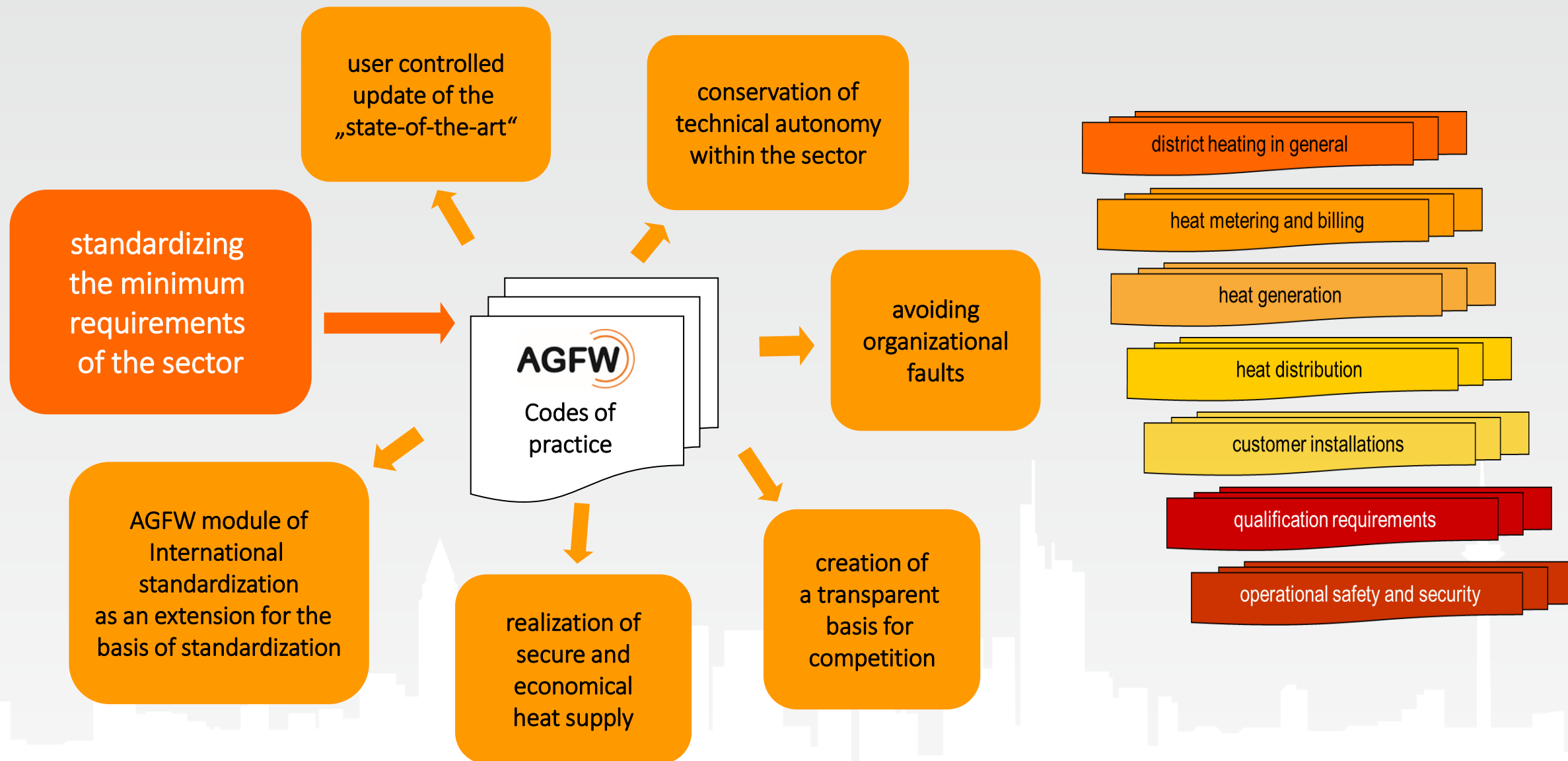
23. February 2021



- **AGFW** is the independent and impartial association in Germany promoting energy efficiency, (district) heating, cooling and CHP - Combined Heat and Power - at national and international levels
- **AGFW** comprises more than 550 regional und municipal district energy suppliers, consultants and industrial operators of this industry including component and system manufacturers, manufacturing and assembling companies and testing institutes within Germany and Europe
- **AGFW** represents over 95 % of the heat load connected to German district heating systems – the largest scale in Western Europe.
- **AGFW** means over 50 years of experience in this field. Established 1971 we have a long and distinguished track record of delivering energy efficiency solutions to our members and to the society
- **Our target** - the technical self-administration of the sector as the foundation and basics of lobbying activities.
- **Our focus** - the fundamental aspects of the technical and economic development of the entire heat and cold process chain: generation – storage – distribution – customer. It examines the possibilities of a cost-efficient, environmentally friendly and secure generation and distribution of district heating and cooling in all capacity classes.

In order to “decarbonize” the energy system in the shortest possible time, it is essential to implement **practicable and available solutions** now. To “decarbonize” the heating sector, specifically, it is key for this transition to be systematically defined, so that all those relevant stakeholders at the EU, national and local level, are involved in a harmonized way - making recommendations to national governments and local authorities ...

- The highest barrier for practicable solutions at the moment is the national and European policy
- There are **to many laws, rules and regulations, changing all the time**, coming from different sides and blocking the companies in doing something or building something
- We see too many lawyers, politicians and those just talking and not enough technicians and engineers - because retrofitting and developing district heating is an **up to 90 % technical business** - and
- ... therefore we need technical “Codes and Standards of Practice for the district heating process chain” as “state-of-the-art technology”



Existing incentives & subsidy programmes

- **Policy Framework**
 - Energy Efficiency strategy 2050
 - Climate protection programme 2030
 - Act on reduction and termination of coal fired power generation (Kohleausstiegsgesetz)
- **Energy in buildings Act (Gebäudeenergiegesetz)**
- **CHP Act (KWKG)**
 - sub-programme on “Innovative CHP” (iKWK)
 - sub-programme on “heat/cold storage”
 - sub-programme on “heat/ cold grids”
- **Market Incentive Programme**
- **DH Networks 4.0 (Wärmernetze 4.0)**
- **BEW (program for efficient district heating networks)**
- ... but we/you have to take of the Training Wheels and get started ...



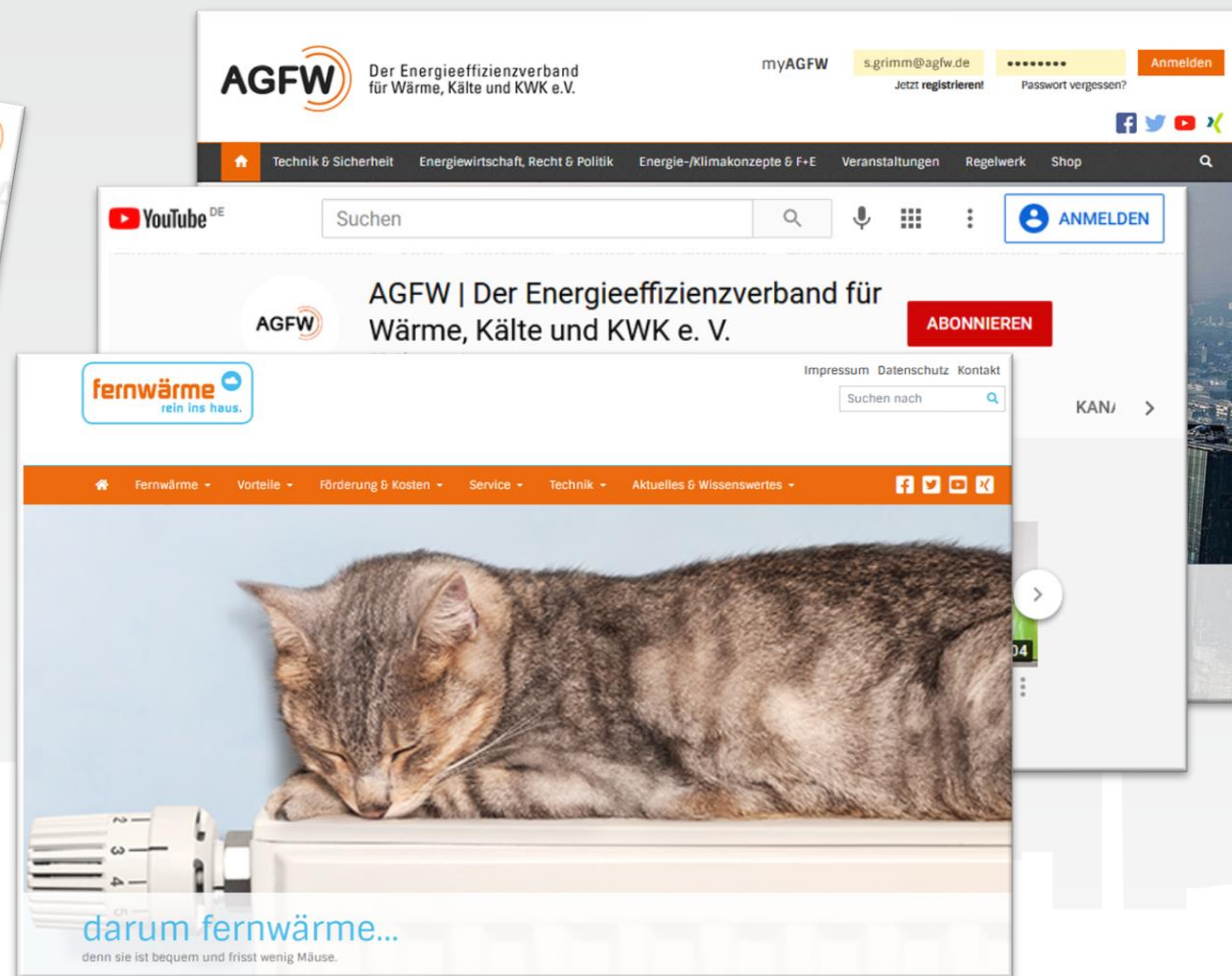
Policy Makers:

- AGFW Department of Energy industry and politics
- Specialist events on political topics with members of the German Bundestag
- Statements on current political discussions
- Proposals, backed up by studies, to achieve policy goals



General Public:

- Website and social media for general public, researcher and the DH industry



my best choice district heating ...

because it's clean and helps,
to save CO₂ for a better environment.

Thank you for your
kind attention!

www.smart-heat-grid.de

district heating 
smart heat for my home.



Werner R. Lutsch,
Managing Director
and CEO

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Mail: w.lutsch@agfw.de



Jure Čižman

Senior Advisor
Jožef Stefan Institute

Improving the performance of DH in Central and Eastern Europe



**Jožef Stefan
Institute**



Funded by the European Union's
Horizon 2020 Programme



**Swedish
Energy Agency**



Improving the performance of District Heating Systems in Central and Eastern Europe

Retrofitting DHC – How to develop a successful action plan
CELSIUS Initiative Webinar - 23 February 2021

Jure Čižman, Jožef Stefan Institute



KeepWarm project is funded by the EU's Horizon 2020 research and innovation programme under grant agreement N°784966, and lasts from April 2018 to December 2020.

This project receives co-funding from the German Federal Ministry of Economic Cooperation and Development.



REPUBLIKA SLOVENIJA
MINISTRSTVO ZA OKOLJE IN PROSTOR



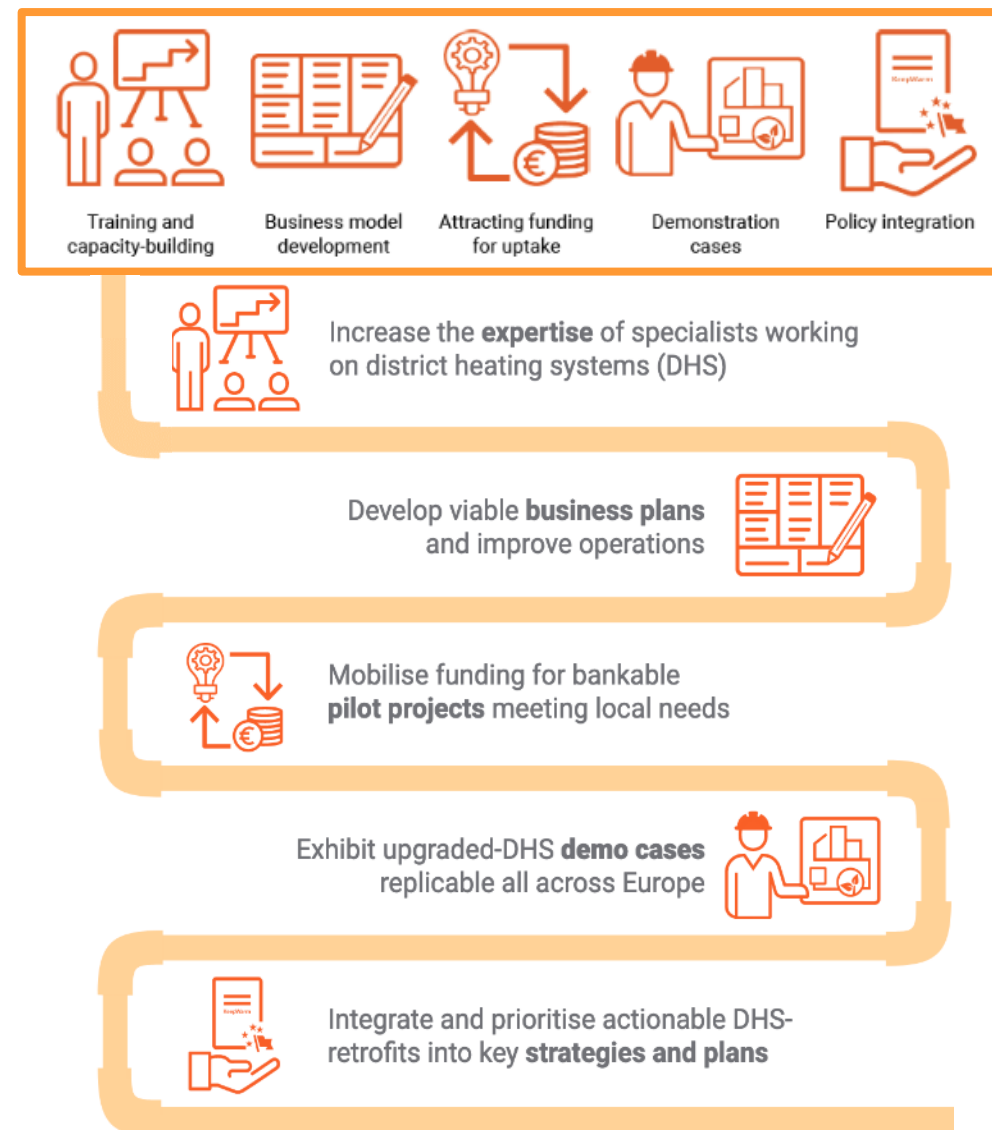
Institut "Jožef Stefan" Ljubljana, Slovenija
Center za energetska učinkovitost

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.

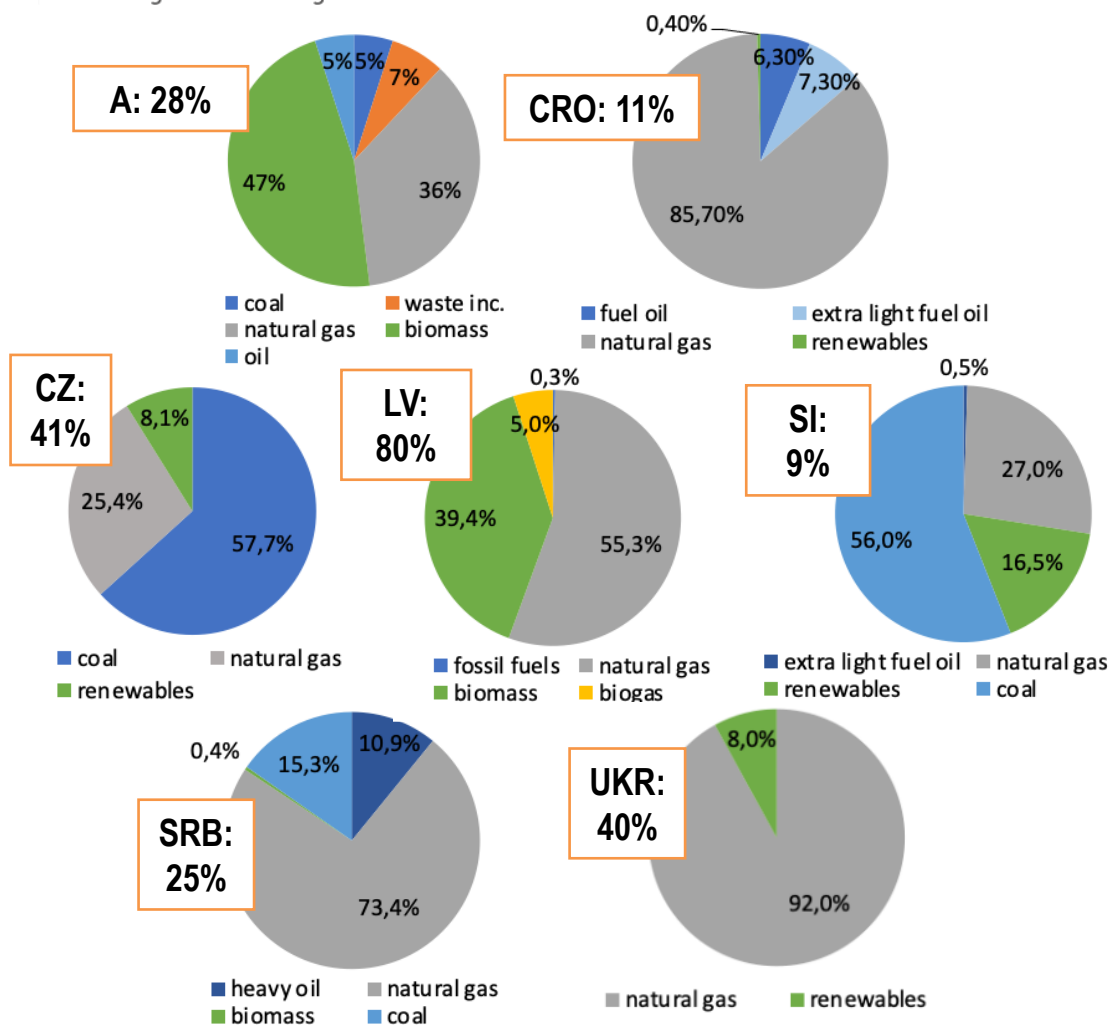
PARTNERSHIP – CHALLENGES – APPROACH



DHS challenges: Low heat production – High transmission losses – Oversizing – Dominance of fossil fuels – Poor maintenance – Inadequate management – Lack of investments – Weak policy support – How to attract/keep customers (competitive heat market)

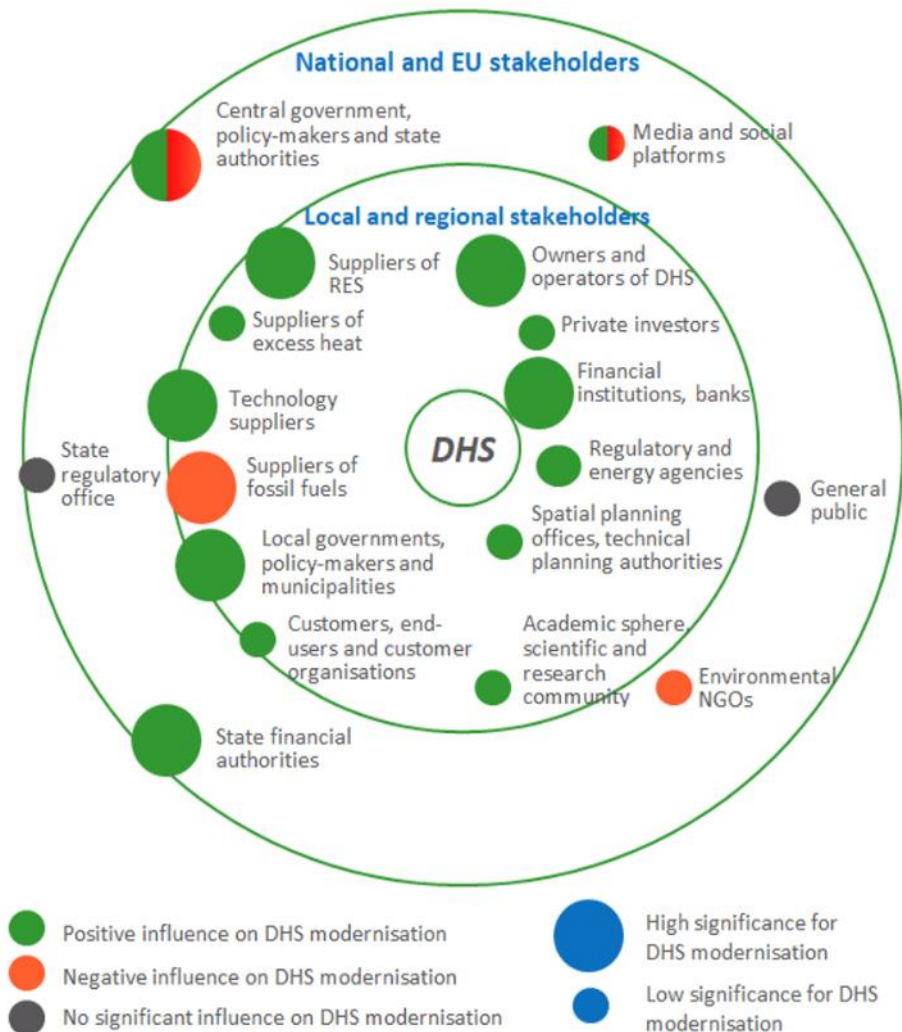


DHS STATE OF ART & MAIN BARRIERS FOR RETROFITTING



	A	CRO	CZ	LV	SI	SRB	UKR
Technical capacity to develop and implement projects	☐	☐	☐	☐	☐	☐	☐
Financial and economic barriers	☐	☐	☐	☐	☐	☐	☐
Administrative barriers		☐	☐				
Customers (prices/costs, /dis/connections)		☐			☐	☐	☐
Political/policy influence	☐	☐	☐	☐	☐		☐
Public, communication and relationships (opinion, awareness)		☐				☐	☐
DHS management and organisation (strategy, mission, planning)	☐	☐			☐		

IMPACT OF STAKEHOLDERS AND THEIR INVOLVEMENT IN STRATEGIC PLANNING



1. Preparation

- Identify key stakeholders
- Identify data and information sources
- Involve relevant policy makers / authorities at all levels of strategic planning

2. Techno-economic evaluation

- Establish a sound basis for decision making (spatial data related to energy supply / demand / infrastructure)
- Evaluate energy related planning approaches
- Cost and benefit analysis

3. Evaluation of existing policies

- Policy assessment
- Evaluate existing policies
- Identify barriers and opportunities

4. Policy (re-)design

- Define objectives, targets, milestones
- Determine the set of policies
- Evaluate financial aspects (investments, funding)

5. Implementation, monitoring and evaluation

- Make strategy public and promoted
- Lead the implementation
- Monitor, evaluate

Involvement of stakeholders

<https://keepwarmeurope.eu/learning-centre/policy-recommendations/>

DHS retrofitting Action plans (D5.2)

proposed specific measures >>>

areas of recommendations:

- (1) Visions, strategies and plans
- (2) Supporting measures and technical guidance
- (3) Planning and regulation
- (4) Financing

Example (Slovenia):

Slovene Heating and cooling strategy & action plan (includes DHC systems as key heat/cold supply infrastructure)



CARE
4 CLIMATE

For more information, visit
www.KeepWarmEurope.eu

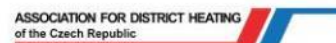
or contact
jure.cizman@ijs.si



THANK YOU!
QUESTIONS WELCOME!



University of Zagreb
Faculty of Mechanical Engineering
and Naval Architecture



This project is funded by the EU's Horizon 2020 research and innovation programme under grant agreement N°784966, and lasts from April 2018 – December 2020.

This project receives co-funding from the German Federal Ministry of Economic Cooperation and Development.





Jacqui Cullen

Project Manager for DHC
Eurometropolis of Strasbourg

2050 Roadmap Strasbourg's Vision



Funded by the European Union's
Horizon 2020 Programme



Retrofitting DHC : how to develop a successful action plan

23/02/2021





Oceanic/Semi-continental climate

Heating Degree Days
(base 17°C) : 2330

New temperature record reached in June 2019 : 38,8°C

City population : 280 000
Eurométropole pop. : 488 000

2017

Energy demand : 12,5 TWh/year

Heat demand : 4,3 TWh/year

Cooling demand : 0,2 TWh/year

SECAP 2030

40% renewable energy

Required by
national energy
regulations



Energy Masterplan 2050

100% renewable energy

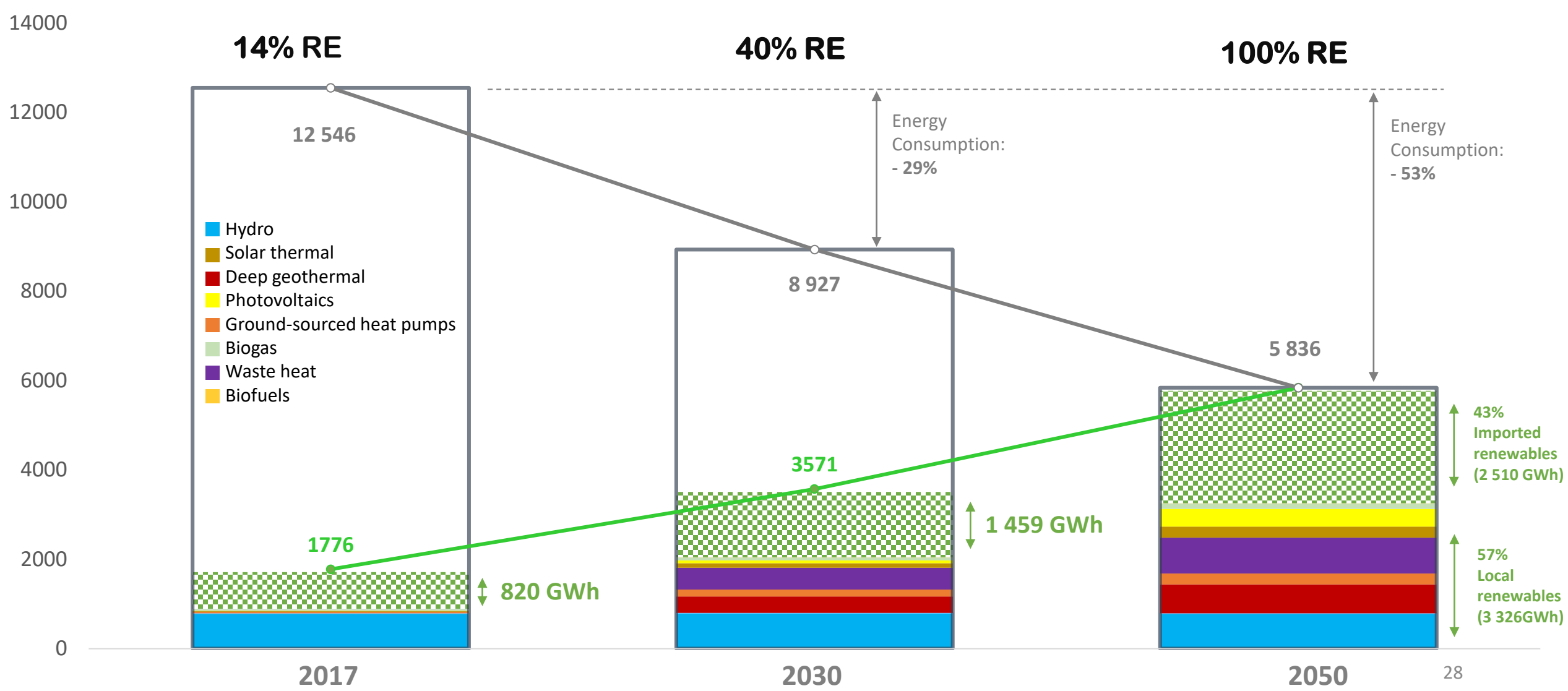
With a **strong political commitment**: in October 2017, objective approved by an unanimous vote by Eurometropole's Council

Voluntary
strategy and
plan

charte aménagement durable
Orientations d'Aménagement et de Programmation
géothermie feuille de route mobilité décarbonnée
différents scénarii Plan Climat
hydraulique transition énergétique diagnostic
modèle urbain collectivité exemplaire fixer les étapes
transition Caisse des dépôts baisse des consommations avenir durable
efficacité stratégie air énergie climat sobriété
réseaux de distribution territoire à énergie positive mobilisation
intracasting efficacité innovation solaire biomasse
Schéma Directeur des Energies
solidarité urban-rural énergies de récupération horizon volontariste
100 % renouvelables en 2050
économie verte projections 2025-2030-2050 stratégique
rénovation politiques volontaristes Cit'Ergie
transversale participation citoyenne Adeus
maîtrise des besoins énergies renouvelables Plan Local d'Urbanisme
planification vision globale Ademe
objectifs partagés et clarifiés outil prospectif
performance climatique mix énergétique
autonomie énergétique

2050 Roadmap Strasbourg's vision

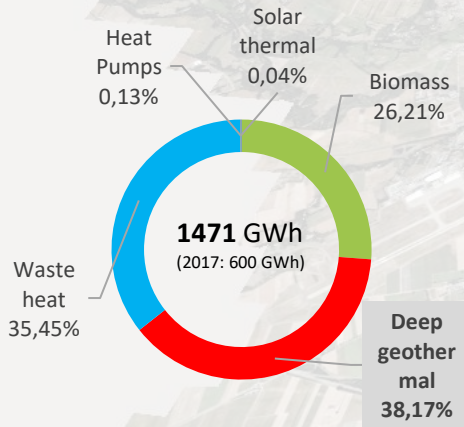
Energy Masterplan 2050 100% renewable energy





District Heating 2050

Eurométropole de Strasbourg



Clear Energy Goals for DH in 2050 (energy distribution x 3, 100%ENR)

- Existing DH
- Future DH and study zones (non-exhaustive)
- Future feeder

Goals / challenges

- Reduce operating temps (140°/100° to around 105°/80°, reducing pressure) / **adapting pipe sizes in high density areas with many other utilities**
- Continue to retrofit pipes and equipment / **ensure compatability with future extensions and t°**
- Continue to integrate RE in the mix / **different operating temps, calenders and contracts from multiple sources**
- Interconnect existing and future networks / **concessions with various timelines and operators**

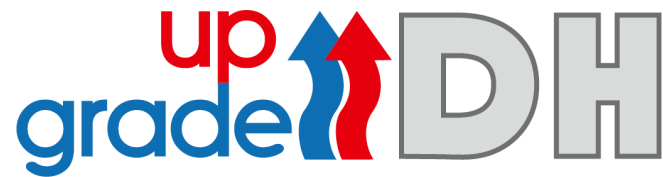
Next step :
**District Heating and Energy
Networks Master Plan (2022-
2030)**

Strongly encouraged by the
national energy agency to be
eligible for funding



Thank you!

www.celsiuscity.eu - [@celsiuscity](https://twitter.com/celsiuscity)



Funded by the European Union's
Horizon 2020 Programme

