

The Forerunner Groups

Building the future together



Our purpose



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



Funded by the European Union's
Horizon 2020 Programme





Celsius: a demand-driven collaboration hub



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





The Celsius Forerunner Groups



Bringing together
city representatives and experts
to help cities overcome their
heating and cooling challenges.



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



For cities – with cities



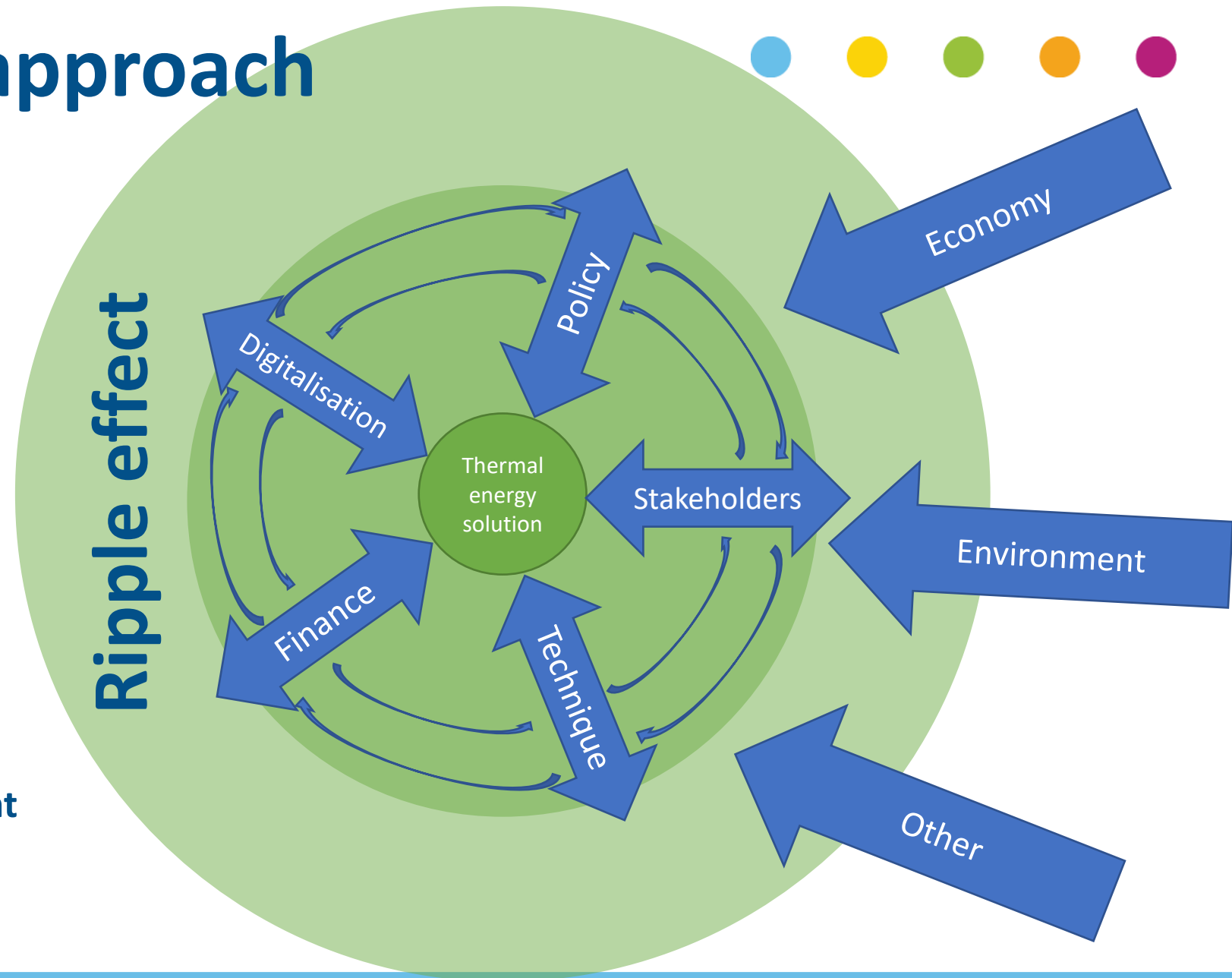
- ✓ Supporting one spearhead city at a time
- ✓ Addressing key challenges
- ✓ Expert advice
- ✓ Exchange and inspire
- ✓ Avoid costly mistakes
- ✓ Don't re-invent the wheel!



Using a systemic approach

Crosscutting support

- ✓ **Sustainable business models**
 - ✓ Financing
 - ✓ Pricing
 - ✓ Replication and scaling
 - ✓ Organisational models
- ✓ **Policy & regulations**
 - ✓ Reduce energy poverty
 - ✓ Environmental impact
- ✓ **Integrated city planning**
 - ✓ Robust energy systems
 - ✓ Renewable energy sources
- ✓ **Stakeholder and citizen engagement**
 - ✓ Creating synergies
 - ✓ Knowledge sharing
 - ✓ Capacity building



Different roles – different benefits



Forerunner cities

Spearhead cities

Benefits

- Inspiration
- Expertise & knowledge sharing
- Networking
- Right to select spearhead
- Possibility to spearhead

- Same as forerunner cities
- Detailed support in project planning & implementation

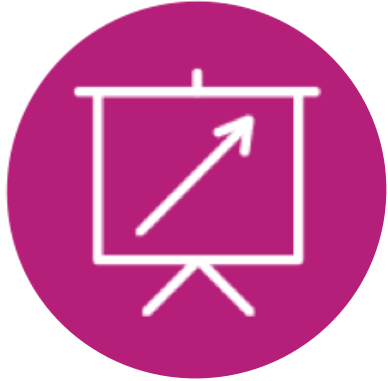
"Costs"

- Interview
- Participate in meetings
- Contribute to problem solving
- Connect to other projects
(~3 hrs / month)

- Same as forerunner cities
- Transparency
- Flexibility
- Problem sharing
(~5 hrs / month)



Different groups – different focus



Getting Started



Residual Heat

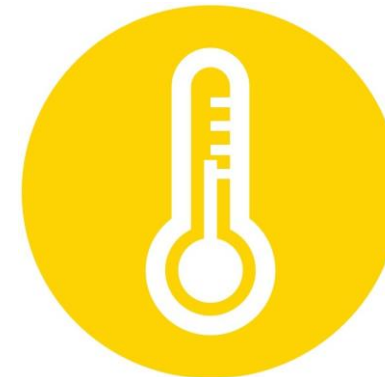


Cooling

Fossil Free



Low Temperature



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General Sessions

Forerunner Cities:

Strasbourg (France), Innsbruck (Austria), Madrid (Spain), Dublin (Ireland), REGEA (Croatia), Reijka (Croatia), Vukovar (Croatia), Belgrade (Serbia), Copenhagen (Denmark), Hengelo (Netherlands), Logroño (Spain), Lund (Sweden), Medfield (Massachusetts, USA), Riga (Latvia), Umeå (Sweden) & Vilnius (Lithuania)

Date & Time	Meeting Focus / Discussion Points
Thur 04/02 14:00 CET	Kick-off meeting
Thur 04/03 14:00 CET	Stakeholder Engagement - Keeping potential clients engaged (ie Strasbourg)
Thur 01/04 14:00 CET	Funding vs. Financing - The difference between funding and financing and their benefits - Horizon Europe and framework programmes funding - Smart Cities Marketplace financing possibilities
Tue 18/05 14:00 CET	C02 Policies and Multi-governance alignment
Thur 10/06 14:00 CET	Sector Integration - Biomass CCS - Flexibility





Getting Started

- **Purpose:** helping cities getting new heating and cooling systems off the ground.
- **Spearhead City:** N/A
- **Forerunner Cities:** Logroño (Spain), Dublin (Ireland) & Medfield (Massachusetts, USA)
- **Base experts:** Henrik Bristav (RISE), Lars Larsson (Celsius), Sofia Lettenbichler (EuroHeat & Power)

Date & Time	Meeting Focus / Discussion Points
Thur 11/03 14:00 CET	Addressing the competition The competition Understanding the roles of ESCOs
Thur 08/04 14:00 CET	Policies and Regulations - Certificates - Effective governance structures - Zoning /heat planning
Thur 06/05 14:00 CET	Technological developments 4 th & 5 th generations Renewables - Geothermal DH (technical and financial considerations) - Solar Choosing the right heat pump
Thur 03/06 14:00 CET	Conclusions and selecting next spearhead city





Fossil Free

Purpose: removing fossil-fuels as energy sources in district energy networks.

Spearhead City: Belgrade (Serbia)

Forerunner Cities: REGEA (Croatia), Rijeka (Croatia), Innsbruck (Austria) & Vukovar (Croatia)

Base experts: Henrik Bristav (RISE), Lars Larsson (Celsius) & Aksana Krasatsenka (Euroheat & Power)

Date & Time Meeting Focus / Discussion Points

Tue 16/03 13:00 CET	Waste heat recuperation - CHP plants - Waste-to-energy solutions - Mapping possible heat sources
Tue 13/04 13:00 CET	Integrating Renewables - Solar - Geothermal
Tue 11/05 13:00 CET	Storage - Pipes - Short-term - Seasonal
Tue 08/06 13:00 CET	Conclusions and selecting next spearhead city





Waste Heat

Purpose: facilitating waste heat recuperation from urban environments.

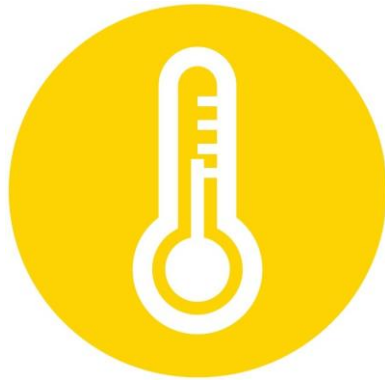
Spearhead City: Strasbourg (France)

Forerunner Cities: Islington Borough (UK), Vilnius (Lithuania), Dublin (Ireland), Hengelo (Netherlands), Riga (Latvia) & Madrid (Spain)

Base experts: Henrik Bristav (RISE), Lars Larsson (Celsius) & Pauline Lucas (Euroheat & Power)

Date & Time	Meeting Focus / Discussion Points
Tue 16/02 10:00 CET	Pricing & contracting with waste heat owners. - Pricing - Contracts - Payback period - a major barrier and how to overcome it. Business models between waste heat suppliers and the energy company
Thur 18/03 14:00 CET	Technological challenges - Multisource network ▪ How to address production downtime ▪ Wastewater treatment heat recovery Including absorption chillers
Thur 29/04 14:00 CET	Financing - Including financing plans from the beginning.
Thur 20/05 14:00 CET	Conclusions and selecting next spearhead city





LTDH

Purpose: supporting cities with mature district energy networks transition to 4th and 5th generation systems.

Spearhead City: N/A

Forerunner Cities: Umeå (Sweden), Lund (Sweden), Riga (Latvia), Vilnius (Lithuania), Copenhagen (Denmark), Innsbruck (Austria), Medfield (Massachusetts, USA) & Dublin (Ireland)

Base experts: Henrik Bristav (RISE), Lars Larsson (Celsius) & Gabriele Pesce (Euroheat & Power)

Date & Time	Meeting Focus / Discussion Points
Thur 25/02 14:00 CET	Policy, regulation & planning - Taxonomy consequences for DH vs LTDH - City planning with LTDH - Environmental performance assessment
Thur 25/03 14:00 CET	Digitalisation & Technological developments - 5th generation - Technical solutions (ex: Storage, Small scale solutions, Solar & Heat pumps) - Technical transition from high temp to low temp – rethinking the system. ▪ Production: challenges faced by heat producers ▪ Making the system as efficient as possible
Thur 22/04 14:00 CET	Pricing - Economics of when to connect LTDH & risk mitigation - DH business models supporting innovation. - Customer buy-in motivating the real estate developers
Thur 27/05 14:00 CET	Conclusions and selecting next spearhead city





Cooling

Purpose: deploying efficient and sustainable cooling systems.

Spearhead City: Vilnius (Lithuania)

Forerunner Cities: Strasbourg (France) & Innsbruck (Austria)

Base experts: Henrik Bristav (RISE), Lars Larsson (Celsius), Giulia Forgnone (Euroheat & Power) & Eloi Piel (Euroheat & Power)

Date & Time	Meeting Focus / Discussion Points
Tue 02/03 14:00 CET	Starting a DC system - Lessons learned and best practices - Things to consider - Temperature schedule for the network
Tue 30/03 14:00 CET	Technical set-up - Technical level ▪ Having separate systems for DH & DC ▪ 4th & 5th generation energy networks - Infrastructural development (pipes, substations, etc...) - Cooling storage - Temperature guarantees
Tue 27/04 14:00 CET	Pricing - Finding the right business plan - Addressing the demand - Customers as shareholders - National & international regulations
Tue 25/05 14:00 CET	Conclusions and selecting next spearhead city



Dynamics

➤ Discussion meetings: 2 hrs every month

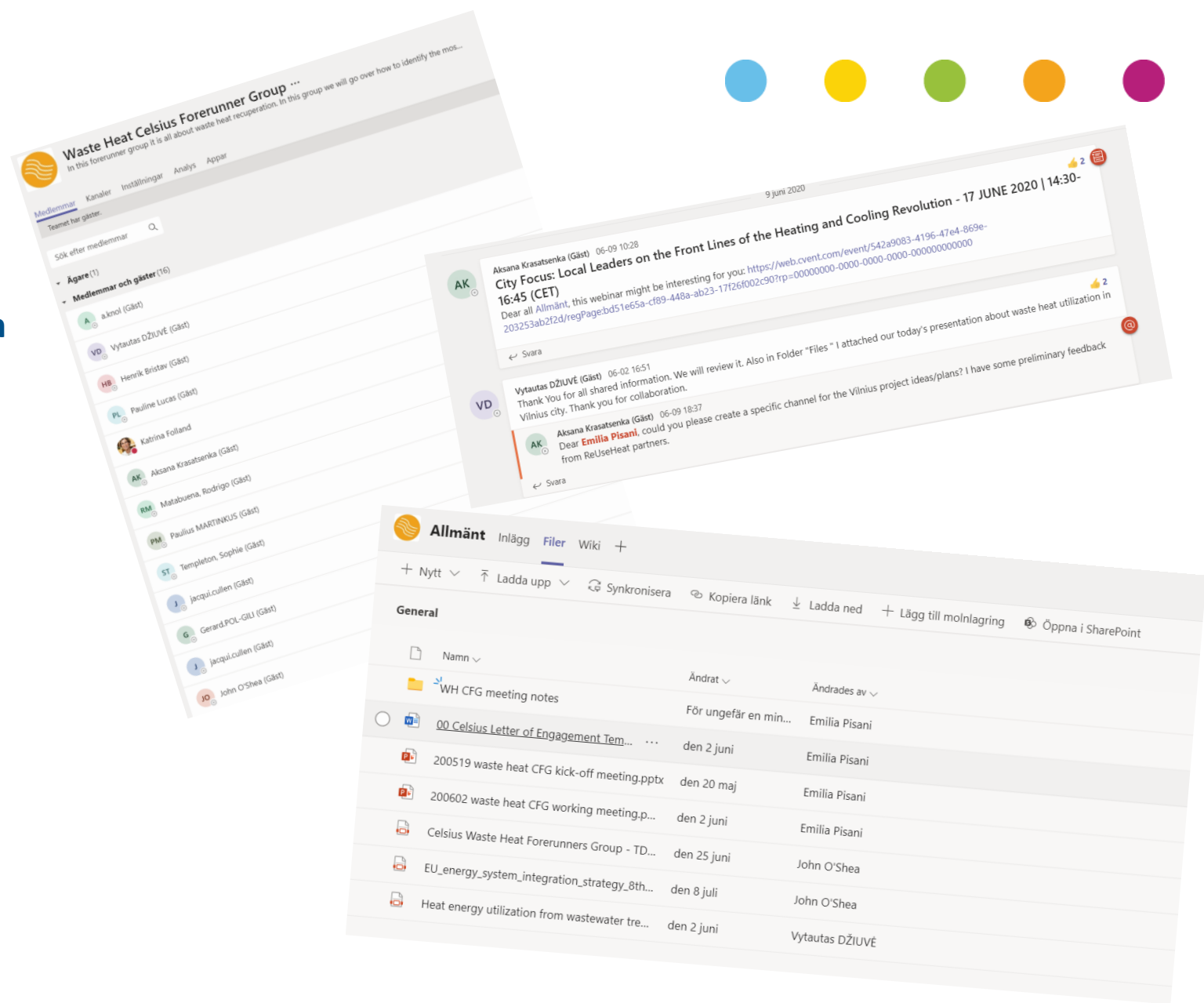
- ✓ Different topics
- ✓ Different experts

➤ Teams

- ✓ Meeting agenda and notes
- ✓ Share files
- ✓ Follow-up discussions

➤ Events

- ✓ Celsius webinars
- ✓ Network events
- ✓ Celsius Summit



2021: Improve, evaluate and repeat!



- ✓ Knowledge sharing based on the demand and needs expressed by the cities.
- ✓ Cities are co-creators and decide on the support they require.
- ✓ Collaboration with experts from industry, research, projects and supportive organisations.
- ✓ Matchmaking with other cities facing similar challenges.



Join us!



celsius

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



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