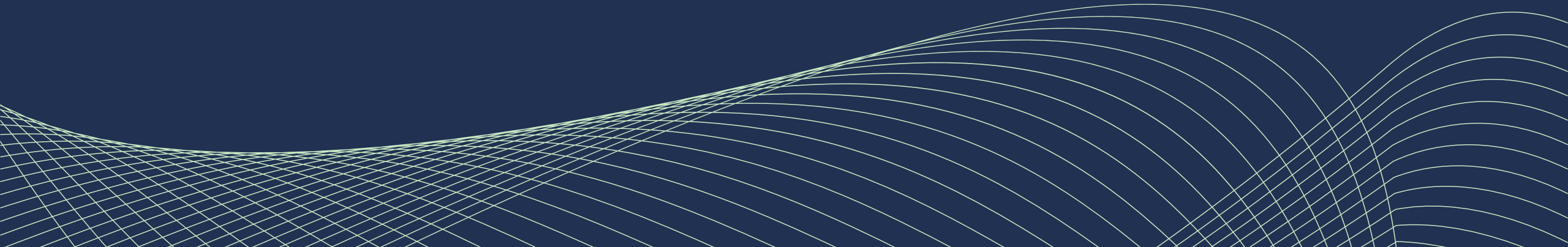


First presentation
Climate Change Advisory
Council

November 16, 2023



01

TEN21- who are we?

02

Previous experiences in district energy – some examples

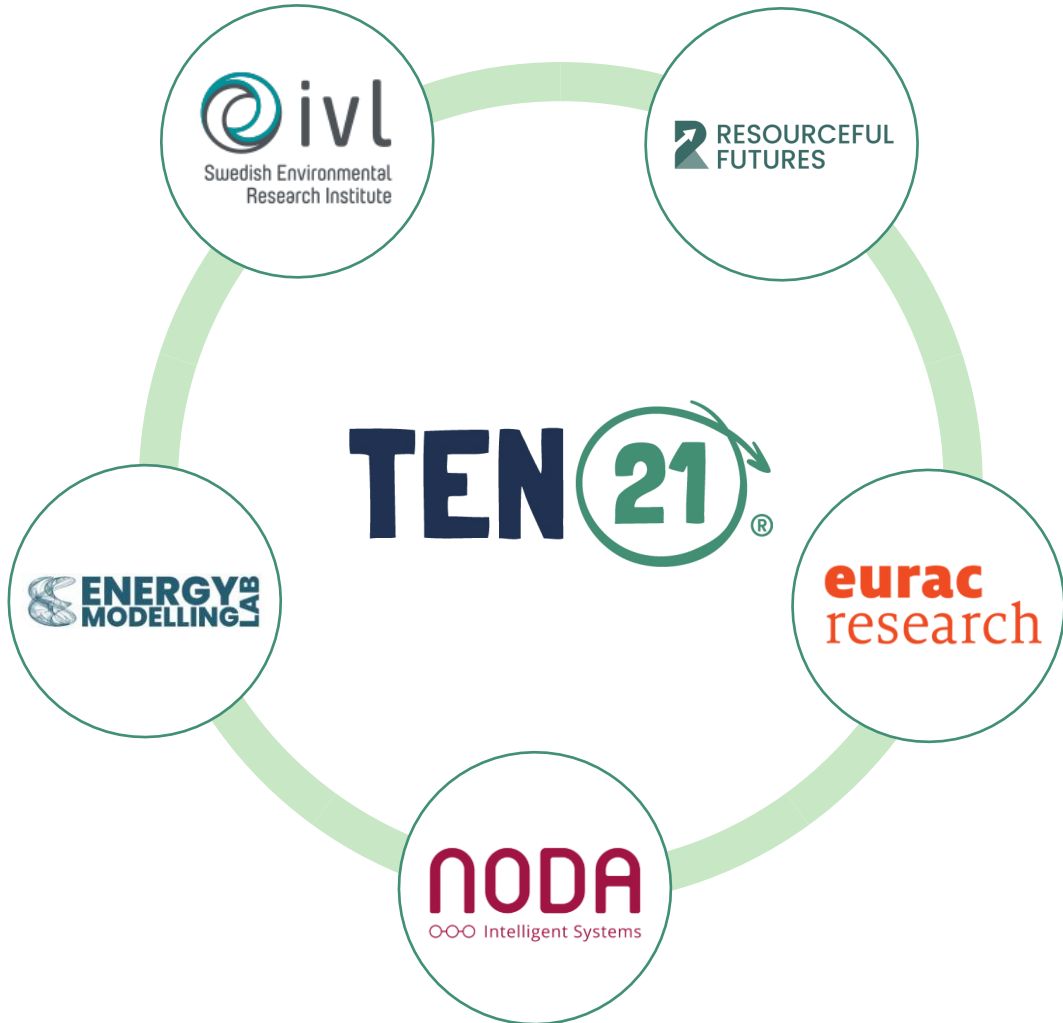
03

Project plan– an overview of foreseen activities with some extra insights on efficient policy development



1 TEN21- a collaboration platform

1. TEN21- a collaboration platform



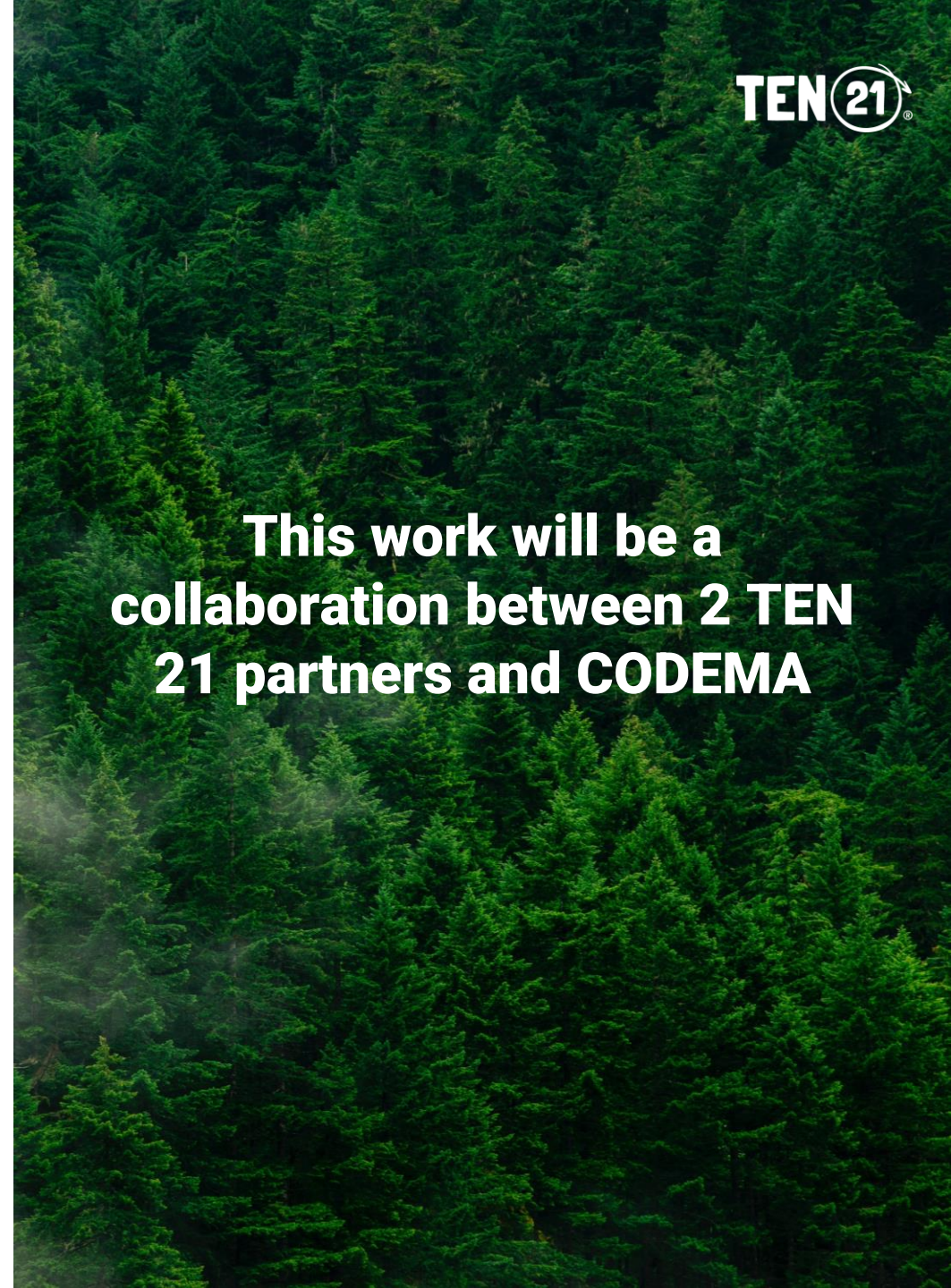
Experts across the DHC value chain working to deliver next generation solutions

We use a scientifically grounded modeling toolbox and the expertise of our multi-disciplinary team to provide Governments, cities, consultants, companies and investors with the support they need to decarbonize the heating and cooling sectors

1. TEN21 + CODEMA



This work will be a collaboration between 2 TEN 21 partners and CODEMA



2

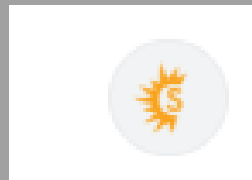
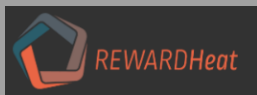
Previous experiences in district energy

2. Previous experiences in district energy



RESEARCH PROJECTS (EU & IEA)

- Waste heat management
- Non combustion solutions
- Innovative business models



MAIN LEARNINGS

- Technical solutions
- Energy system analyses
- Circular business models
- Risk exposure shifts
- Policy impact/ efficiency/shifts
- Asset class of DHC: investor perspective
- EU Taxonomy impact on DHC

2. Previous experiences in district energy



ASSIGNMENTS

- Market analyses
- Policy analyses
- Dedicated work on UK DH policy
- EUCF support for Tallaght development
- EU Taxonomy Guidance
- Risk Management support
- Strategy Development support

MAIN LEARNINGS

- Deep understanding of DHC market conditions
- Policy impact/ efficiency/shifts
- Experience from Tallaght
- EU Taxonomy impact on DHC
- Risk management expertise
- Understanding of efficient DHC strategy development

3

Project plan- and some extra thoughts on efficient policy

3. Project plan

Target to meet the following objectives

Objective 1

Consider the costs of district heating deployment in Ireland

Objective 2

Consider the appropriate policy and financial supports to be provided for DH rollout

Objective 3

- Implementation of DHNs
- end-user awareness
 - management of connections
 - interventions to boost uptake

3. Project plan

Target to meet the following objectives

Objective 1

Consider the costs of district heating deployment in Ireland



Desktop Review

Identify challenges to DH expansion – European experiences

- Renewable heating technologies
- Cost estimates to replace fossil fuelled boilers
- Cost estimates of alternative low carbon heat supply alternatives
- Explicit DH –Heat Pump comparison
- Land use planning
- Enabling legislation
- Regulation
- Governance
- Finance
- Support rollout across European countries

Data collection:

Search in 2 databases + Grey Literature + Previous work

3. Project plan

Target to meet the following objectives

Objective 2

Consider the appropriate policy and financial supports to be provided for DH rollout



Workshops to draw from existing experiences

The three partners have extensive experience from DH policy work in Europe

- WS1: Identify key factors to include in DH policy
- WS2: Efficient policies for meeting the factors in the Irish context
- WS3: Refinement of discussion

Data collection:

Previous work and experience in DH policy making

3. Project plan

Target to meet the following objectives

Objective 3

Implementation of DHNs

- end-user awareness
- management of connections
- interventions to boost uptake



Interviews with end users and DH companies

- End-users: 11 interviews (mature markets Sweden, Denmark, Germany, new markets Netherlands, Spain and Tallaght)
- DH companies: 9 interviews (mature markets Sweden, Denmark, Germany, Finland and Tallaght)

Data collection:
Interviews

3. Project plan

Timeline

Objective 1

Consider the costs of district heating deployment in Ireland

Objective 2

Consider the appropriate policy and financial supports to be provided for DH rollout

Objective 3

- Implementation of DHNs
- end-user awareness
 - management of connections
 - interventions to boost uptake

Finalized and documented before Christmas- planned meeting to review progress December 7th

Finalized and documented before end of February

Finalized and documented by end of March

2023

2024

M1
November

M2
December

M3
January

M4
February

M5
March

M6
April

European Policy and Frameworks

Two Big Questions for Ireland:

1. What has worked well?

2. What will work well?

+

3. Joint talk: which policies you like/ love/ do not like?



Each Country has
its own energy
balance, utility
culture and
consumer

Avoid Square Peg Round Hole
circumstances



Policy

Question No 1.

**Why are you
doing it?**

Is it because:

- **Lowest cost?**
- **Lowest/ no carbon?**
- **Avoid subsidies (to mitigate high energy prices)?**
- **Balance the energy grid?**
- **A certain DHN share of energy supply?**
- **Other...**



The BIG Exam Question – How to Create the Bow Wave

Which policy mix will create the bow wave- of district heating activity - in a greenfield context such as Ireland?



4 Big Policy Themes



Policy Objectives – What are you trying to achieve? Is it a mix of things?



Co-ordination – Which public body co-ordinates planning and construction of networks? Who looks at wider energy systems questions? Who ensures efficient stakeholder interactions?



Route to market – Is mandation necessary? How are opportunities made available to the market? How do you encourage new entrants into the market?



Consumer Protection – How do you ensure a quality product for a fair price?



Result = Investment Case

Result of good policy = a viable investment case for each network

Any lack of viability needs to be met by:

- Subsidies (grants)
- Reducing input costs (incentives on waste heat/power)
- Valuation of DHN contribution to wider energy systems



Forerunners Scandinavia

- Formation of critical mass dominated by state and municipal co-ordination

Denmark: coordination + mandation

Sweden: coordination + market force

- Need to shift away from biomass (increasingly scarce asset: now)
- Sector coupling (HPs) and studies on how to maximize effect opportunity for electrical grids

Other markets

- Mix of policy approaches – no clear winner but a smörgåsbord of approaches
- Mix of attitudes to split of public vs private roles – no clear winner
- Need to replace gas (and reducing appeal of hydrogen alternatives)
- Under-developed valuation of energy system gains



Netherlands

- Price cap linked to gas price
- New heat act under development
- Schemes developed by public and private
- New permit structure and €2 billion support for geothermal projects

France

- Municipalities hold strong responsibility for provision of heat to citizens
- Strong co-ordinating function for DHN including a heat fund
- Market settled into a pattern of concessions – concentrated set of private sector concessionaires

UK

- Municipally led to date – experience, capacity and risk issues
- Concession model dominant but procurement slow and expensive
- Moving to some mandation and stronger co-ordinating action
- Future routes to market under discussion

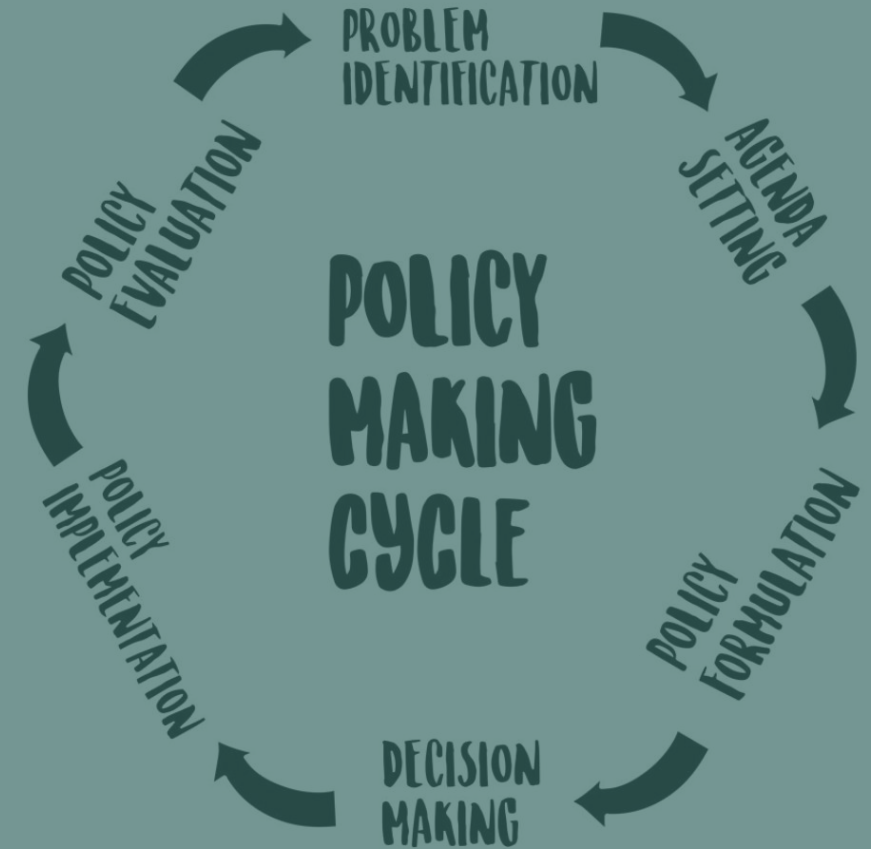
Germany

- Strong legislation around DHC (1980s)
- 2/3 of DHN companies municipal owned. 1/3 public-private or private.
- 35% of customers mandated
- Strong financing role of KfW (state investment bank)



Themes to support good policy making:

- **Account for local conditions, identify and test desirable scenarios**
- **Learn from previous experiences**
- **Stakeholder Engagement**
- **Ensuring all energy system gains are properly valued**



THANK YOU

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