

District Heating & Cooling

a **VISION** towards 2020 - 2030 - 2050

Vision by the DHC+ Technology Platform Steering Committee

Presented by:

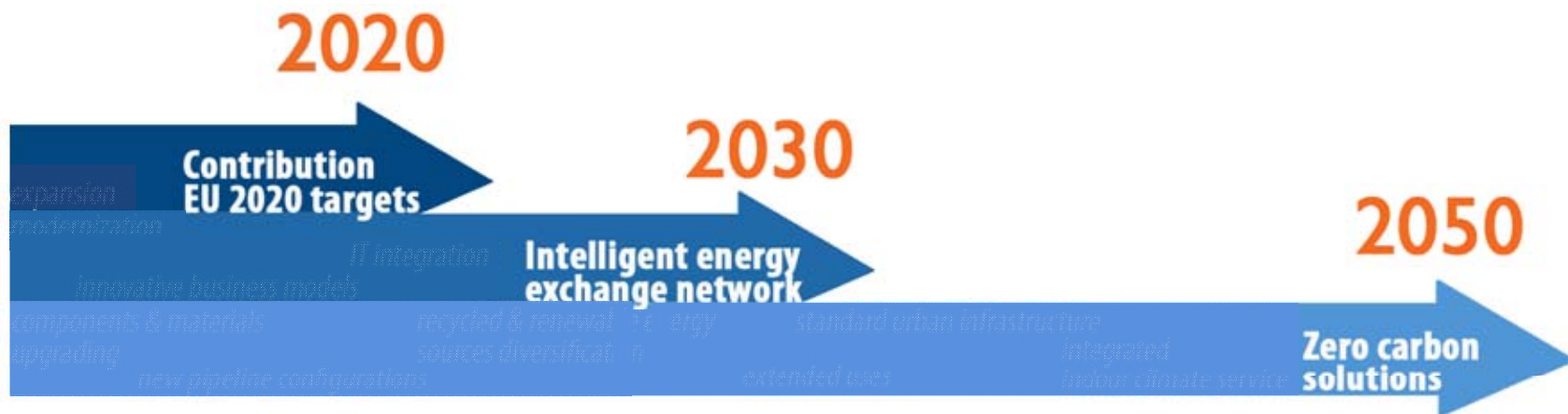
M.Sc. Jan Eric Thorsen
Senior Project Manager
Danfoss District Heating
Denmark

VISION explained by wikipedia.org:

A Vision statement outlines:

- What the “DHC concept” wants to be
- It concentrates on the future
- It does not necessarily reveal how to come there
- It is a source of inspiration

The time horizon:



3 stages of evolution are outlined, covering the next 10+10+20 = 40 years !

The **Future** Starts Today

- A few statements on DHC today:

5.000 DH systems exist in Europe, supplying 9% of Europe's heat demands

DC is supplying 2% of the cooling demand

but in both cases the shares are highly unevenly distributed on national level

DHC is the obvious services to urban areas

Europe is leading in DHC technology

The **Future** Starts Today

Why DHC ?



The **key value of DHC**:

- Increased energy security
- Low primary energy consumption
- Sustainable fuel mix
- Reduced greenhouse gas emissions
- Pollution prevention and control
- Customer service
- Simplicity

DHC 2020: Deploying Best Practices



The 20-20-20 European policy targets by 2020:

20% share of DH, 25% share of DC

- if the potential is realised DHC contributes:

CO2 emissions

- reduced by 517 mill. tons/year (add. 40 -50 by DC)
- 9.3% of all carbon dioxide emissions in Europe

Renewable energy

- the share is increased from 14% to 25%

Energy efficiency

- 2.6% decrease in the entire European primary energy supply

DHC 2020: Deploying Best Practices



How to reach the DH and DC contribution to the EU 2020 targets

Three complementing strategies:

European-wide expansion

- far sighted rational energy planning
- political incentive schemes
- trends in customer demands and urban planning

Innovations for new generations of technology

- materials and equipment
- process related to generation, distribution and consumer side
- standardisation
- demonstration sites

Modernizations where required

- transferring best practises, awareness

DHC 2030: Realizing the greater potential



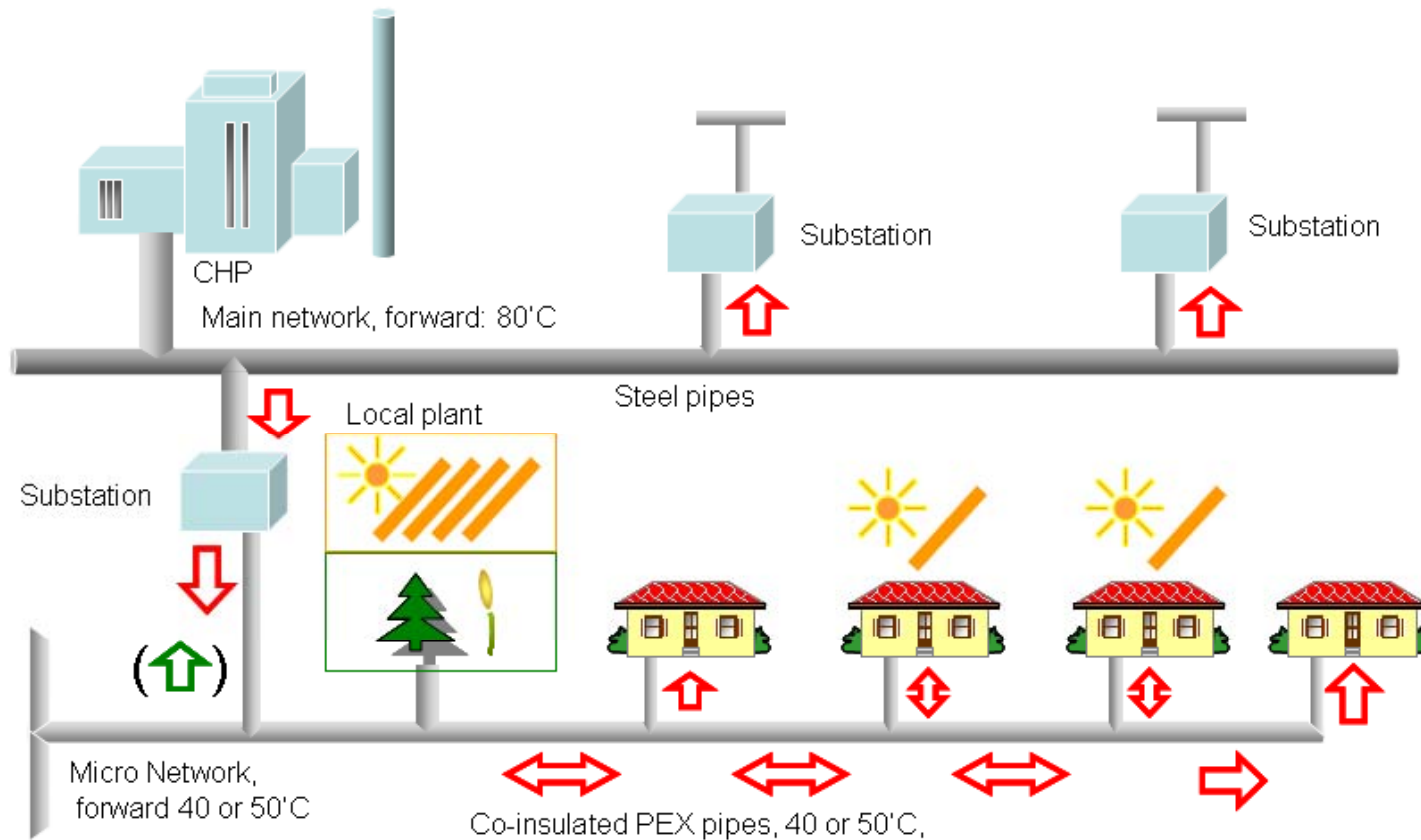
By 2030 the **VALUE of DHC** is recognized and affirmed:

Optimal energy solutions can only be achieved by DHC,
where the **dynamic interaction between generation,
distribution and demand** is key value.

DHC 2030: Realizing the greater potential



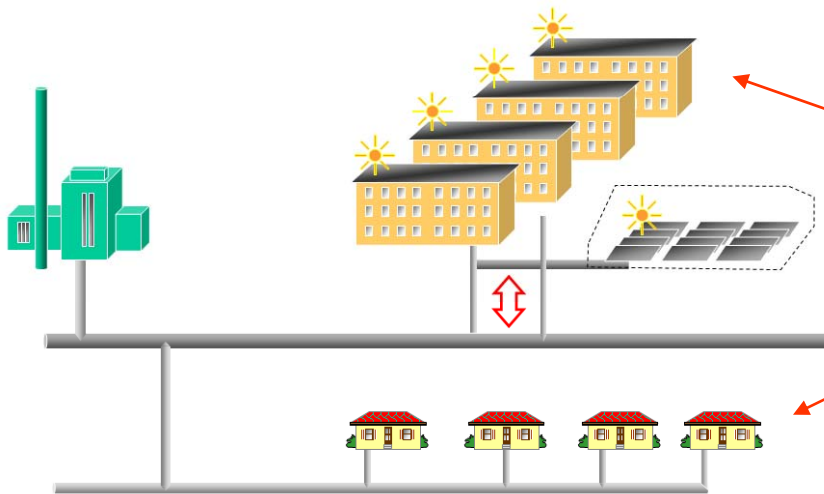
DHC infrastructure: Intelligent energy exchange network



DHC 2030: Realizing the greater potential



DHC extended use into house appliances:



- washing machines
- tumble dryers
- dishwashers
- ventilation systems (low energy houses)
- Bath tubs

Replacing electricity !

DHC 2050: Zero Carbon Solutions

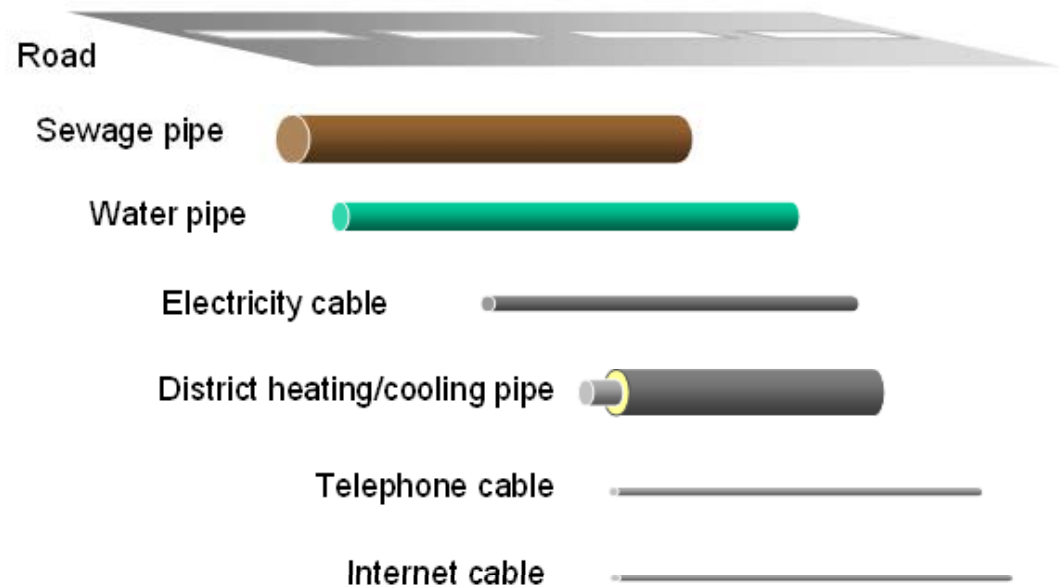


DHC is the basic energy exchange infrastructure

Local grids of Regional Networks

Zero Carbon solutions

Integrated climate comfort



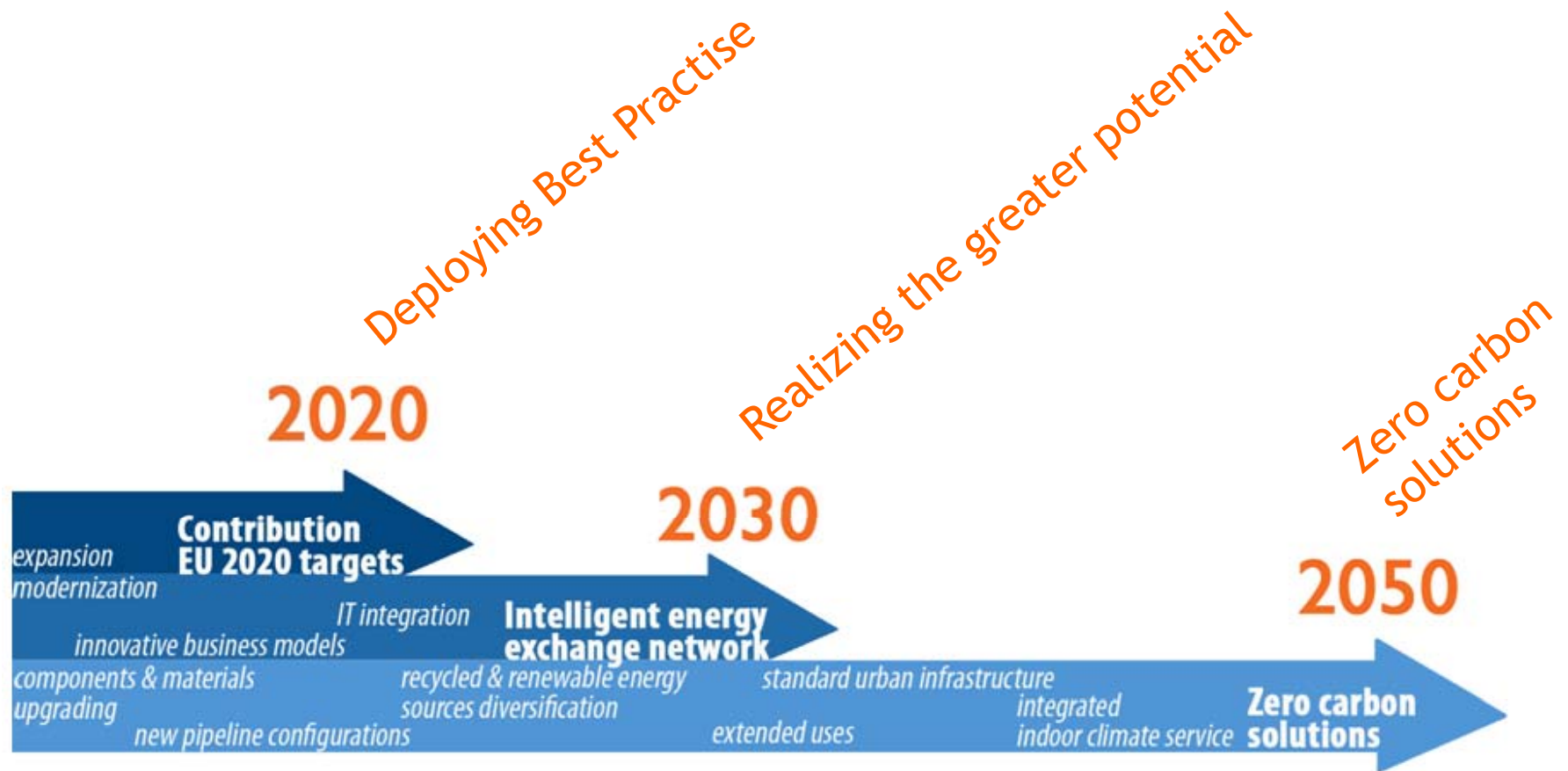
DHC 2050: Zero Carbon Solutions



DHC technology contributes significantly to

- 80% reduction of total European greenhouse gas emissions
- 50% energy efficiency improvement of the European energy system
- 60% share of renewable energy in total European energy consumption

DHC VISION The main steps



DISTRICT HEATING & COOLING:

Obvious part of the climate challenge solution



Please check out: www.dhcplus.eu