

KeepWarm

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



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

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





Renewing district heating

KeepWarm Showroom of replicable and bankable DHS pilot projects





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

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





About the KeepWarm project

KeepWarm supports **forward-looking district heating systems** (DHS) in seven countries of Central and Eastern Europe (CEE) to develop and implement pilot projects which **retrofit** their systems in a more **sustainable** manner.

To **overcome barriers** to DH deployment across the region, KeepWarm facilitates DHSs via a multi-stage approach:





Increased capacities of specialists working in DHS companies by offering training workshops

DHSs supported in the development of viable business plans





DHSs advised on how to mobilise funding for bankable pilot projects

Exhibit of replicable DHS demo cases







KeepWarm Showroom

Following KeepWarm's suggested action-hierarchy below, DHSs will have more **efficient operations** from such **cost-effective investments**, and which provide even more **reliable services** to their customers while still contributing greatly to **climate-related goals**.

The following pages exhibit KeepWarm's portfolio of leading DHS demo cases as a means to:

- Inspire other DHSs to replicate their successes
- **Stimulate investment** in worthwhile opportunities
- Attract customers to the viability of DHS services
- Showcase DHSs' justifiable role within energy policies





Austrian DH context

DH in Austria covers **15%** of total heat demand, being the **3rd-most dense DH network** in Europe. DH is especially predominant in larger **cities**, but also in rural villages with more than **2400 DH networks** all over the country. Networks are mainly operated by **private** utilities.

Challenges

- High **investment costs** for RES, emission regulations and competition
- Low consumption in new homes
- Lack of a national heating strategy



Source: <u>PEAKPX</u>



DH ENERGY MIX - AUSTRIA

Framework & action

Trends

- Annual **5% growth** of DHSs
- Trend towards switching DHSs to RES, especially biomass

Policy stance

- Goal of 1% annual increase of RES share in DHC
- Austria must reduce GHG emissions at least 36% until 2030
- Concerted effort to increase DH's share of biomass and other RES

Investment subsidies covering:

New DHS /expansions of DHS	$\mathbf{\nabla}\mathbf{\nabla}$
DHS retrofits for EE / RES	$\checkmark \checkmark$
Consumers / connections	
Soft loans and other financing	X
Tax incentives	X

Recommended actions

- Build new RES-DHS in urban as well as rural areas
- Find synergies between electricity and DHS grids
- Investigate the potential of large-scale biomass, excess heat and ambient heat

DHS Eibiswald

(Nahwärme Eibiswald eGen)

- Location: Eibiswald, Austria
- Operating since: 1993
- Ownership: farmers cooperative
- Grid: **10600 m** (owned by the DHS)
- Customers: 150

KeepWarm

Renewing district heating

- Connected load: 5800 kW
- Boiler output: **4870 kW** (5 boilers)
- Type of DHS: hot water
- Current fuel: wood chips, thermal solar, oil (peak load & back-up)
- Potential renewables nearby: waste wood, excess heat, solar

For more information:

www.keepwarmeurope.eu/country-pages/austria





Investment plans:

Optimisation to achieve more efficient operation of the boiler house and grid as well as grid extension, in 2019.

http://nahwaerme-eibiswald.at/

DHS Ligi

New boiler house, grid extension & grid connection



- Primary work-steps and investment drivers:
 - Takeover of nearby DHS
 - Connecting both Grids
 - Building new boiler-house / heating central
 - Grid extension in Eibiswald

Strategic background documents:

- Environmental subsidies for optimising DHS
- Climate & Energy Strategy of Styria



Stakeholder involvement:

- Leading: Owner consortium, planner
- Other: municipality, financing partners

Required resources: Financial investment:





Results:

- RES use increase: before
 10.9 ⇒ after 19.5 GWh
- RES heat production ratio:
 99.1% RES
- Primary energy savings:
 320 MWh/a
- Emission reductions:

 1764 tCO₂/a
- Increased heat sales: 80%
- Increased profitability

Want to adapt our work to your DHS? Want to invest in our progressive DHS? Contact us using the information below!

• Franz Moser, Bioenergie Service



DHS Ligist

(Biomasse Heizgemeinschaft Ligist GesmbH)

- Location: Ligist, Austria
- Operating since: 1986
- Ownership: private/community
- Grid: 6000 m (owned by the DHS)
- Customers: 138
- Connected load: 2880 kW
- Boiler output: 2500 kW (2 boilers)
- Type of DHS: hot water
- Current fuel: wood chips
- Potential renewables nearby: waste wood from forestry and saw mills

For more information:

• www.keepwarmeurope.eu/country-pages/austria



Investment plans:

Renewal of biomass boilers to achieve more efficient operation in 2019. Connecting new customers in 2020.

DHS Ligi

Boiler Replacement & new customers



Primary work-steps and investment drivers:

- Boiler Replacement during 2019
- Connecting new customers during 2020

Strategic background documents:

- Environmental subsidies for optimising DHS
- Climate & Energy Strategy of Styria



Stakeholder involvement:

- Leading: Owner consortium, planner
- Other: municipality, financing partners

Results:

- RES use increase: before
 4.7 GWh ⇒ after 5.5 GWh
- RES heat production ratio: 100% RES
- Total efficiency gain: 6%
- Emission reductions:
 \$323 tCO₂/a
- Resources: 100% local
 biomass from a 30 km
 radius
- Increased profitability

Required resources: Financial investment: Approx. 1.5 Million EUR



Want to adapt our work to your DHS? Want to invest in our progressive DHS? Contact us using the information below!

• Franz Moser, Bioenergie Service

• Franz.moser@lk-stmk.at, +43 316/8050-1366



KeepWarm inspires

Now that you have discovered our front-running DHSs all across the CEE region, we hope that they have inspired you to **replicate their successes for your own DHSs**, as well as set up **effective policy frameworks** to support them further and inject **investments into their bankable DH projects**.

To facilitate your next steps, please keep reading the remaining few pages to see how we can help you to KeepWarm.



Keep learning with KeepWarm

In order to help you on your way, you are highly recommended to explore further the <u>KeepWarm website</u>, including its <u>Learning Centre</u> with numerous resources from KeepWarm and many other <u>related</u> <u>projects</u> and EU-led initiatives, not to mention our latest <u>news</u>.

In particular, you can discover numerous **guidebooks, tools and other useful materials** to help you on your way to modernising DHSs:

- case studies of DH retrofits and sustainable-energy upgrades
- spatial mapping about heat supply and demand across Europe
- free-to use thermal planning software
- policy recommendations
- insights into finance and technical assistance
- <u>Inspire Events</u>, many of which are now being done online...

... and much more!



Keep going with KeepWarm

Finally, it is worth highlighting that the <u>KeepWarm</u> <u>consortium</u> is especially well-suited to use its <u>competence</u> to help you achieve your DH goals! Our diverse group of experts can apply our great <u>experience all across Europe</u>, especially in countries of the CEE region.

Contact us (centrally or via links on the next pages) so we can know how **our expertise can benefit your work** towards making your DH more efficient and sustainable:

- Technical consultancy
- Feasibility studies
- Financial guidance
- Strategic action-planning

- Policy/market integration
- Staff/stakeholder trainings
- General advice
 - ... and much more!





Renewing district heating

For more information: visit our website www.KeepWarmEurope.eu contact us at: info@keepwarmeurope.eu or at: keepwarmeurope.eu/contact follow us on Twitter: @KeepWarm_EU





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

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

