KeepWarm
Renewing district heating

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.

KeepWarm

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Keeping our cities efficiently warm

10. July 2020 webinar

George Stiff, ICLEI Europe

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About KeepWarm

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

Facilitating the multi-level integration of DHS retrofits into key strategies and plans

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International project partners

ICLEI Local Governments for Sustainability

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

(Germany)

ASSOCIATION FOR DISTRICT HEATING of the Czech Republic

Czech Republic

Latvia

ZREA ZEMGALES REGIONĀLĀ ENERGĒTIKAS AĢENTŪRA

lk Landwirtschaftskammer Steiermark

Austria

KT-ENERGY

Ukraine

Jožef Stefan Institute, Ljubljana, Slovenia
Energy Efficiency Centre

Slovenia

KSSENA

VINČA INSTITUTE OF NUCLEAR SCIENCES University of Belgrade
NATIONAL INSTITUTE OF THE REPUBLIC OF SERBIA

Serbia

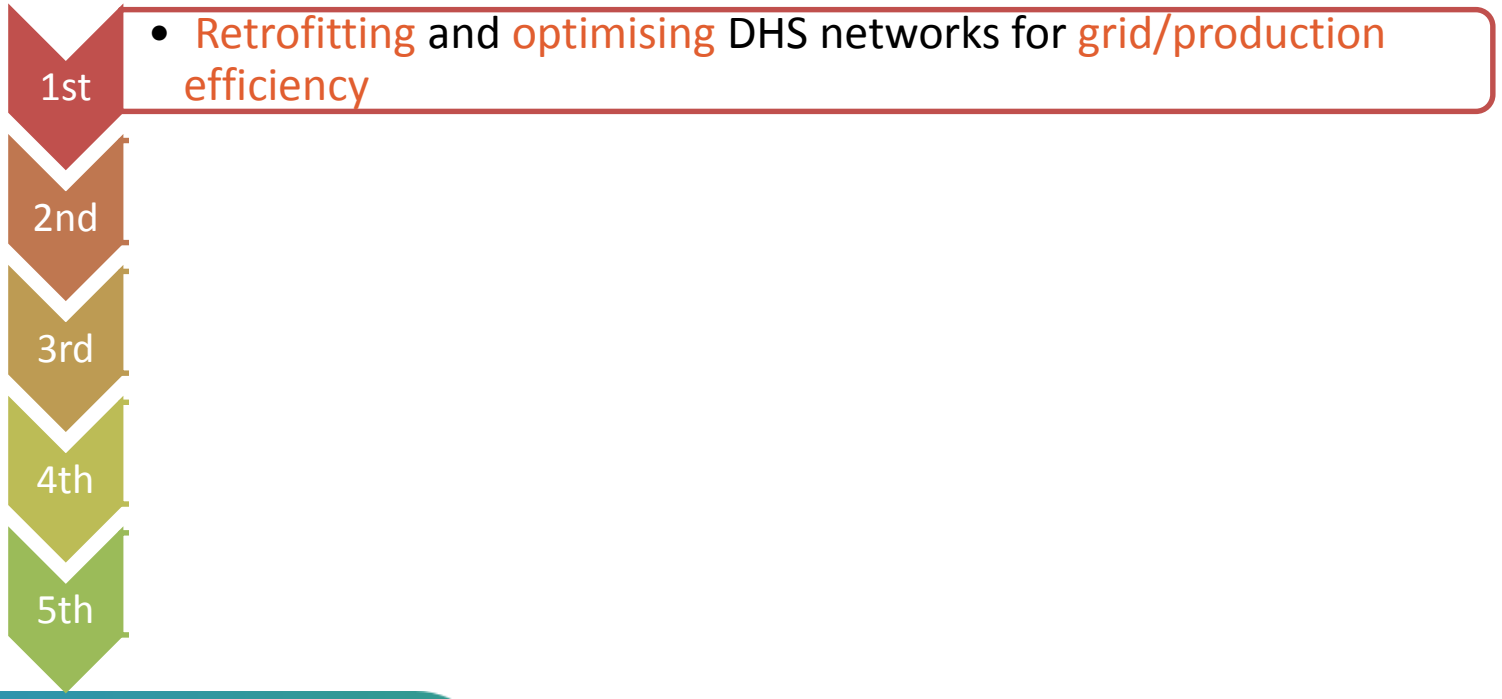
FSB University of Zagreb Faculty of Mechanical Engineering and Naval Architecture

Croatia

REGEA REGIONALNA ENERGETSKA AGENCIJA NORTH-WEST CROATIA
SJEVEROZAPADNE HRVATSKE
REGIONAL ENERGY AGENCY

KeepWarm retrofits

KeepWarm parnters and DHSs are essentially following a suggested action-hierarchy to achieve more **efficient operations** from **cost-effective investments**, which provide even more **reliable services** to DH customers while still contributing greatly to **climate-related goals**.

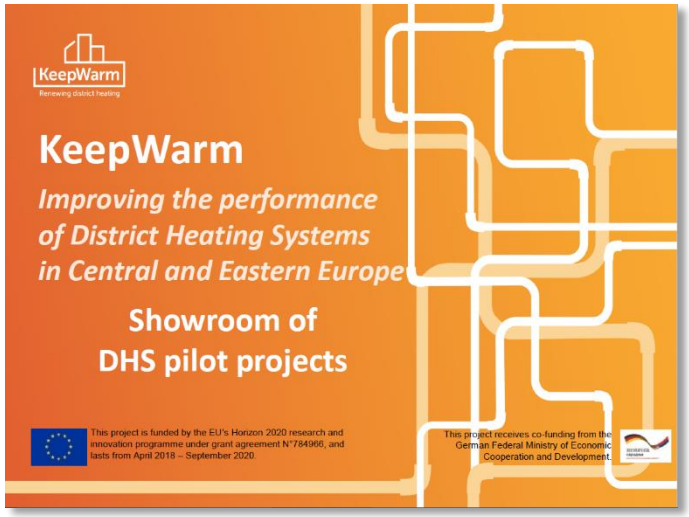


KeepWarm Showroom

KeepWarm's **Showroom of replicable and bankable DHS pilot projects** highlights key details for each from an **operational and planning perspective** for all 23 DHSs participating actively in the project.

It is meant to function as a portfolio of leading DHSs which:

- **Inspire other DHSs** to replicate successes – *DH companies*
- **Stimulate investment** in worthwhile opportunities – *investors*
- **Attract customers** to the viability of DH services – *end-users*
- Showcase DH's justifiable **role within energy policies** – *public authorities*



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DHS demo cases in AT, CZ and UKR

DHS	Boiler retrofits	Grid retrofits	Efficiency/ optimisation	Temperature downgrade	Expansion/ connections	Significant phase-outn of fossil fuels	Biomass integration	Solar thermal integration	Integration of other sources	Smarter controls
Austria	✓	✓	✓		✓					✓
Eibiswald	✓	✓	✓		✓					✓
Ligist	✓				✓					✓
Czech Republic		✓	✓	✓		✓	✓		✓	
Brno			✓	✓			✓		✓	
České Budějovice		✓		✓		✓			✓	
Písek				✓		✓	✓			
Ukraine	✓	✓	✓				✓			
Bila Tserkva	✓	✓	✓				✓			
Khmelnytskyi	✓	✓	✓				✓			
Ternopil	✓	✓					✓			
Zhytomyr	✓	✓	✓				✓			

+ 14 more DHS in HR, LV, SRB and SI.

upcoming webinar in Oct. 2020!

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National DH contexts

Summaries providing insights of the current **DH context** in each of our seven countries, including challenges, energy mix, trends, policy/investment frameworks and recommended actions.

Austrian DH context

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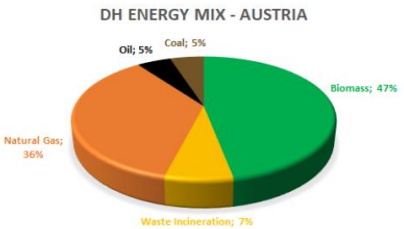
DH in Austria covers **15%** of total heat demand, being the **3rd-most dense DH network** in Europe. DH is especially predominant in larger **cities**, but also in rural villages with more than **2400 DH networks** all over the country. Networks are mainly operated by **private** utilities.

Source: PEAKPX

Challenges

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



https://keepwarmeurope.eu/countries-in-focus/austria/english/

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	☑☑
DHS retrofits for EE / RES	☑☑
Consumers / connections	☑
Soft loans and other financing	☒
Tax incentives	☒

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

https://keepwarmeurope.eu/countries-in-focus/austria/deutsch/

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Insights into DHS demo cases

Key details about 23 DHSs‘ operations, ownership, investment plans, investment drivers, strategic documents, stakeholders, resource requirements, results and even contact details.

DHS Brno

(Teplárny Brno, a.s.)

- Location: **Brno, Czech Republic**
- Operating since: **1930**
- Ownership: **community**
- Grid: **291 011 m** (owned by the DHS)
- Customers: **4 000**
- Connected load: **1 078 000 kW**
- Boiler output: **762 840 kW** (13 boilers)
- Type of DHS: **steam, hot-water**
- Current fuel: **natural gas**
- Potential renewables nearby: **wood chips, Forests of Brno city**

Source: http://www.teplarny.cz/provozy

Investment plans:

Reconstruction of obsolete steam pipelines for **modern economical hot water system** in the period 2020-2023, **expansion of WtE** capacity by 2024.

For more information:
- www.keepwarmeurope.eu/country-pages/czech-republic
- www.teplarny.cz/projekt/1005/keep-warm-renewing-district-heating/

25

Upgrade to hot-water system

Primary work-steps and investment drivers:
- Analysis of heat network condition, heat distribution losses and demand for technological steam
- OP Enterprise and Innovations for Competitiveness

Strategic background documents:
- Territorial Energy Concept of the City of Br
- State Energy Policy supporting DH modernisation

Stakeholder involvement:
- Leading: DHS operator, municipality as an owner of DHS
- Other: Financial institutions, suppliers

Required resources:
Financial investment: 650 mil Kč (25 mil €) for a conversion of the steam network

Results:
- Reduction of losses: **18 % before ⇨ 6 % after**
- Primary energy savings over the lifetime of the solution: **5 533 GWh**
- Emission reductions: **⇩1 106 670 tCO_2 (- 14 %)**
- Fuel (natural gas) savings per year: **19 529 000 m^3**

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

26

- Martin Sroubek, Head of Tech.Development
- sroubek@teplarny.cz

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Expediting national DH progress

Still in progress to publish final versions, but we are already adapting the Showroom to create **single-country versions**, including translations, **suited to engage local** stakeholders.

Поточний стан та план дій

Тренди
- Зростання кількості **біомаси** для теплопостачання
- Інвестиції в **енергоефективність** зростають, але потребують значно більшого масштабу

Цілі державної політики
- **40% частка ВДЕ** у ЦТ до 2030 року
- Заходи зі **скорочення споживання природного газу** та **збільшення ефективності** у ЦТ та будівлях
- **Скорочення викидів** парникових газів відповідно до НВВ

Наявна інвестиційна підтримка:	
Нові СЦТ / розширення СЦТ	☒
Модернізація СЦТ (ЕЕ та ВДЕ)	☑☑
Споживачі / приєднання	☑☑
Пільгові позики та фінансування	☑
Податкові стимули	☒

Рекомендовані дії
- Затвердити стратегію сектору з цілями розвитку ефективного ЦТ та декарбонізації
- Розробити план управління боргами
- Збільшити державні інвестиції у модернізацію систем ЦТ
- Підтримувати нові бізнес-моделі

https://keepwarmeurope.eu/countries-in-focus/ukraine/ukrajinska/

15

Збільшення частки біомаси та ефективності

Ключові стимули для інвестицій:
- стан мереж та обладнання
- наявні джерела фінансування

Стратегічні документи:
- План дій зі сталого енергетичного розвитку м. Хмельницький 2016-2025
- Національна політика з енергоефективності, відновлюваної енергії та клімату

Зацікавлені сторони:
- Основна: Хмельницька міська рада
- Інші: міжнародні фінансові організації, споживачі, підрядники

Необхідні ресурси:
Фінансові інвестиції:
4.6 мільйонів Євро
Інші: **обладнання та матеріали, енергетичні ресурси, в т.ч. біомаса**

Результати:
- Збільшення генерації тепла з ВДЕ: **44 823 ГДж на рік**
- Економія первинної енергії: **24 188 ГДж на рік**
- Викиди: **⇩4,557 тонн CO_{2e} на рік або 10%**
- IRR: **3-43%** залежно від заходу та припущення про ціну природного газу

Бажаєте підтримати наші проекти модернізації?
Контактуйте з нами!

•Павло Возборський, Директор
•p.z.teplomerega@gmail.com

19

Keep learning with KeepWarm

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

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
- Inspire Events, many of which are now being done online…

… and much more!

Accessibility of the Showroom

- In KeepWarm's **Learning Centre** > Resources > Technical solutions and cases

Keep going with KeepWarm

Finally, it is worth highlighting that the KeepWarm consortium is especially well-suited to use its **competence to help you achieve your DH goals!** Our diverse group of experts can apply our great **experience all across Europe**, 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!

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George Stiff

Climate and Sustainable Energies Officer

ICLEI Europe

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

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