DemoUkraina DH

Results and Lessons Learned

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DemoUkrainaDH – in brief

- Up to 20 demonstration projects for modern and energy efficient district heating
- Demonstration of technology and design criteria not used in Ukraine before, **scalable for larger future projects**
- Established by NEFCO and Sweden in cooperation with Minregion and supported by E5P
- Funding from NEFCO (loans), Sweden (investment grants, Technical Assistance) and E5P (Technical Assistance)

DemoUkrainaDH typical project: operational features

- Owner – municipal DH Company
- Financing:

  Loan from NEFCO (up to 0.5 MEUR)

  + Grant from Sweden (up to 0.3 MEUR)

  + Local financing (min 15% of project cost)
- NEFCO loan secured by municipal guarantee
- Payback period approx. 4-8 years
- Energy efficiency improvement by at least 30% and substantial CO2 emission reductions.

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Cities that initiated DemoUkrainaDH projects

> 200 000		100 000 – 200 000	50 000 – 100 000	< 50 000
Kyiv	Zhytomyr	Pavlohrad	Kamyanets-Podilsky	Myrhorod
Dnipro	Kamianske	Severodonetsk	Oleksandria	Chuhuiv
Donetsk	Chernivtsi		Konotop	Starokostiantyniv
Kryvyi Rih	Ternopil		Berdychiv	
Vinnytsia	Bila Tserkva		Uman	
Poltava	Ivano-Frankivsk			
Mykolaiv				

DemoUkrainaDH projects: current status

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Examples of measures








- IHS in Kamyanets-Podilsky and Poltava
- Replacement of DH pipelines in Poltava
- Modernisation of boiler house in Myrhorod

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Some experiences

- Modern cost-effective prefabricated IHS with brazed heat exchangers; downsized control valves and heat meters; downsizing of equipment and removal of redundant components in general

- 15-25% lower investment
- Improved hot water quality
- Improved service

Before…

… and after implementation

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Some experiences

- Modern pre-insulated pipeline design – sustaining higher pressure drop, allowing friction-fixed installation (no need for compensators, chambers etc), flexible pipes, minimising the number of unnecessary components etc.

  - 20-40% lower investment
  - Lower maintenance cost and heat losses

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Some experiences

- Solutions for domestic hot water production during non-heating season, e.g. heat pumps, solar collectors etc.

- Improved service
- Improved hot water quality

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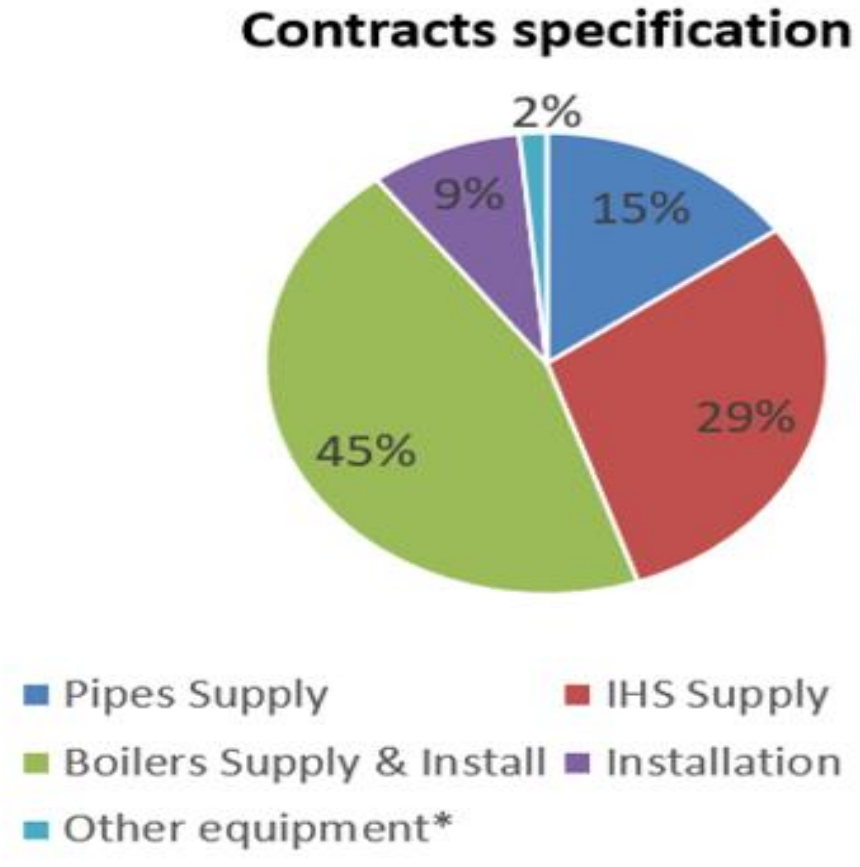
Results of completed projects

- **Investment** – 4.7 MEUR including **2 MEUR loans**
- **Loan disbursement rate** – 78% (actual amount / max. available)
- **Average payback period** – 5.5 years
- **Total CO_2 emission reduction** – 6,270 tons per year (by 33.6 %)
- **Total reduction of natural gas consumption** – 3,241,000 m^3/year (by 36.1%)
- **Total reduction of heat energy consumption** – 31,370 MWh per year (by 35.9%)

Results of completed projects

Total value of already signed contracts – 5.5 MEUR,

of which 3.8 MEUR (over 2/3) awarded to Ukrainian contractors



Figures for completed projects as well as for the projects under implementation

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How to facilitate? – Lessons Learned

- Willingness of both municipal authorities and DH Company management to implement the project **at all stages**
- Strong PIU capable of finding effective solutions for sustainable project implementation
- Effective cooperation with consultants providing Technical Assistance
- At least one PIU member able to communicate in English
- Proper preparation of infrastructure within the designated project area (e.g. proper thermal insulation of buildings where IHS are planned for installation) is **an advantage**

How to facilitate? – Lessons Learned

- Be prepared to adapt the new equipment and to test it = be familiar or be ready to be relevantly educated and trained
- Turn-key contracts may be an advantage; alternatively, be prepared to establish good cooperation between the design contractor and the contractor in charge of supply and installation
- Be prepared to settle ownership issues for the equipment installed inside residential buildings, in line with recently introduced requirements of Municipal Services Law
- Good practice is to allow the contractor to have access to already installed equipment for technical monitoring and / or support (e.g. SCADA)