



Roadmap on the Development of District Heating in Azerbaijan until 2020

INOGATE Technical Secretariat & Integrated Programme

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BUILDING PARTNERSHIPS FOR ENERGY SECURITY

Azerbaijan District Heating Roadmap

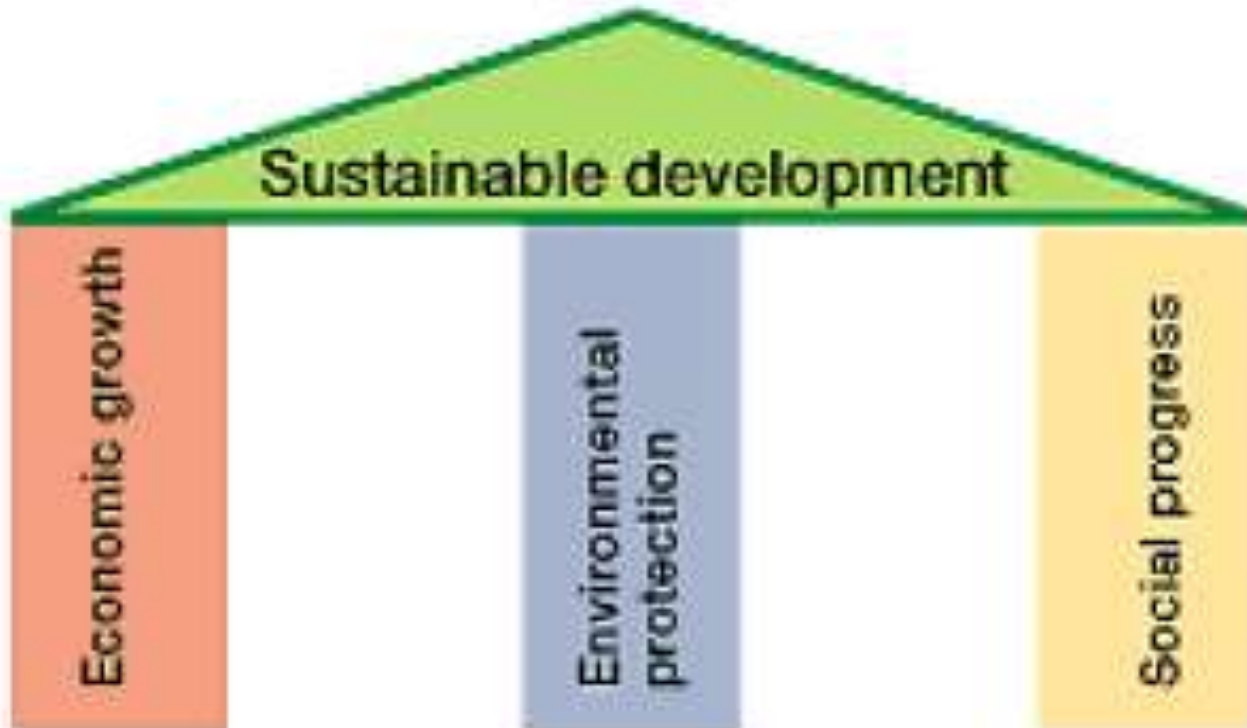
Roadmap for Azeristiliktechizat



Azerbaijan District Heating Roadmap



The Three Pillars



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General Topics I

NATIONAL FRAMEWORK

Review of the role of the state as

- Decision-maker of legislation, rules and norms
- Creator of political visions
- Investor and provider of subsidies
- regulator on tariffs.

AWARENESS OF THE ACTUAL SITUATION

Analyses by experts /public acknowledgement:

- the actual technical problems
- quality of the heat and hot tap water services
- the actual economic challenges.



General Topics II

URBAN HEAT PLANNING

Definition of urban areas suitable for district heating. Basically there are 4 main future development options for the supply systems of heat and hot water:

- District heating
- Autonomous building boilers
- Gas heaters in flats
- Electric radiators/water heaters

TECHNICAL ROADMAP FOR DISTRICT HEATING

- Short term improvements
- Medium term improvements
- Long term visions.



Azerbaijan District Heating Roadmap

Benefits of District Heating

The air pollution can be concentrated at few high chimneys far from living areas. Reduction of harmful emissions by using highly efficient equipment for flue gas cleaning.

The expertise to keep the heat supply system operating well can be concentrated at experts in the district heating company. That can ensure high supply reliability, increased safety and comfort.

District heating is a *precondition* for cost effective use of renewable energy in large scale, and thereby reducing greenhouse gasses and make more efficient use of resources .

District heating provides an opportunity to address strategic priorities and socio economic objectives



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Short-term improvements

Hydraulic balancing of district heating networks
Strategic main heat meters
Reduction of water losses
Reduction heat losses
Increasing the water quality
Implementation of variable flow regime
Expanding Hot Tap Water service
Increasing the heat production efficiency.

Furthermore:

Hydraulic balancing of the in-house distribution systems,
inclusive cleaning and replacement of pipes where required.



Short-term improvements

Reduction of water losses

A precondition for improved water quality,
And for a long lifetime for new pipelines

Elimination of illegal tapping in buildings through inspections ?

Frequent inspection of pipes and drains in order to detect leaks.

Repair of leaks and replacement of leaking pipes, leaking valves, leaking pumps, leaking pump sealing on bigger pumps.

Improve the pre-seasonal network pressure test procedures in order to minimise possible network breakdowns.

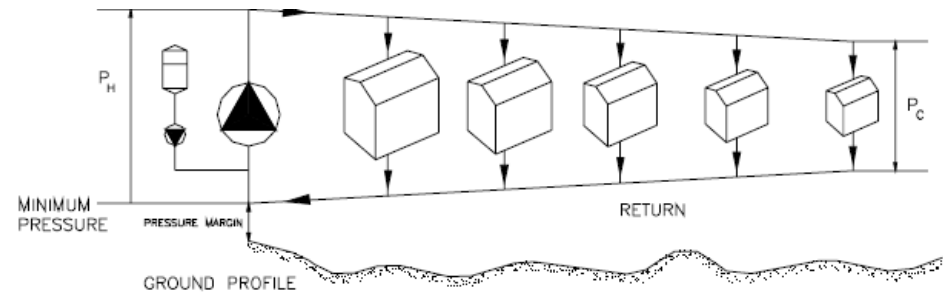
Short-term improvements

Implementation of variable flow regime

Installation of mixing loop (or heat exchanger) and control valves with a pump at all the building heat substations (or fully equipped new prefabricated heat substations).

Installation of differential pressure control at (some of) the building heat substations.

Installation of variable speed driver at pumps with manual or automatic regulation of the pressure at the most remote customers, where the difference pressure in the network is lowest.

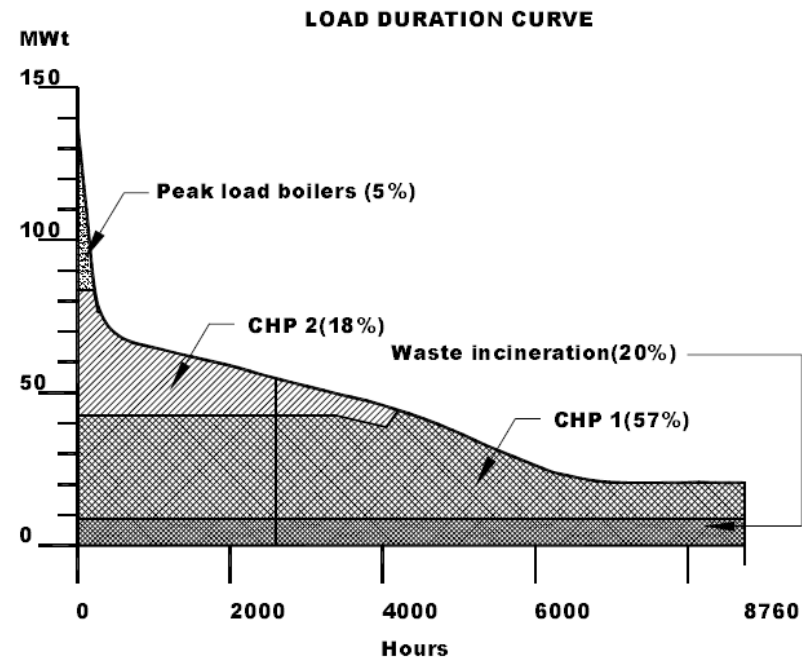


Short-term improvements

Implementation of variable flow regime (continued)

Variable flow regime also allows load dispatch with more than one heat producer.

Frequency converters can anyway be installed at large existing pumps, where the technical conditions allow it. It will immediately result in considerable electricity savings.



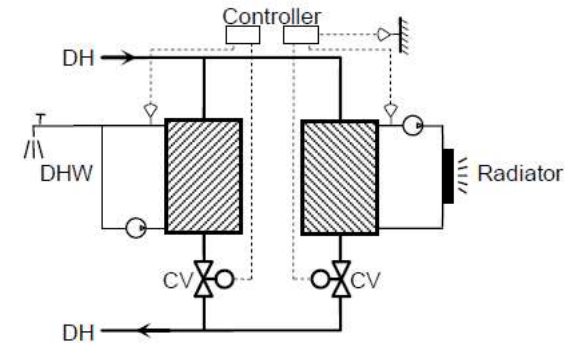
Short-term improvements

Expanding the Hot Tap Water service

New equipment installed for Hot Tap Water:
At the building substation or at each flat.

Automatic control devices must be installed to ensure proper supply of heat both for heating and for hot tap water at the same time.

When the district heating systems provides both heat and Hot Tap Water, it should operate the whole year around and terminate or minimize pre-seasonal network pressure test.





Long-term goals

Installation of modern heat substations
Continuously network and boiler rehabilitation
Interconnection of networks
New heat production sources (renewable energy)
Load dispatch
Lower operation temperatures to lower heat losses, prolong technical life and integrate new renewable energy sources.

Systematic metering
Sustainable tariffs.

Computerized System Monitoring and Control (SCADA)
Computerized technical administrative system (TAS).

Development of customer services
Energy efficiency awareness campaigns
Internal training and development.



Thank you for your attention!

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