



De-centralising the energy supply - How Bratislava disconnected

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Legal conditions

According to the national act 100/2014:

- During the construction of the system of thermal installations in the defined territory, the supplier of heat is considered as concerned authority and at the same time has the status as a party. Accordingly, this also applies to changes and modifications of the existing system of thermal installations.
- Heat supplier as a respective authority protects the public interest of all parties. As the holder of the permit for distribution of heat (heat supplier) acting in accordance with the Construction Act as the authority concerned, is entitled to issue a binding opinion only to the extent whether the building permit will not jeopardize the continuity and safety of its operation.



Legal conditions



According to legal frame, an efficient DH system supplies at least 50% of the heat produced from RES or 50% of heat from industrial processes, 75% of the heat produced by high-efficiency cogeneration or 50% of the heat produced by a combination thereof.

Authoritative position of the municipality is needed if the installed capacity of the system of thermal installations exceeds 100 kW.

Obrázok GGE



Legal conditions



- The energy supply from DH can be terminated by an agreement with the supplier, if the customer pays economically justified costs caused by disconnection from the system.
- If DH uses RES of 10% - 60%, the customer can disconnect only if the new supply covers RES by 20% and higher.
- If a heat supplier supplies more than 60% of heat from RES, the customer may disconnect only if ensuring full supply from RES.



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Requirements



Global indicator primary energy on ultralow-energy construction: upper border of energy class A1

Building category budov	Energy Performance of Buildings energy in kWh/(m ² .a)							
	A0	A1	B	C	D	E	F	G
Family houses	≤ 40	41-80	81-160	161-240	241-320	321-400	401-480	> 480
Apartment buildings	≤ 32	33-63	64-126	127-189	190-252	253-315	316-378	> 378
Office buildings	≤ 60	61-120	121-240	241-360	361-480	481-600	601-720	> 720
Schools	≤ 34	35-68	69-136	137-204	205-272	273-340	341-408	> 408



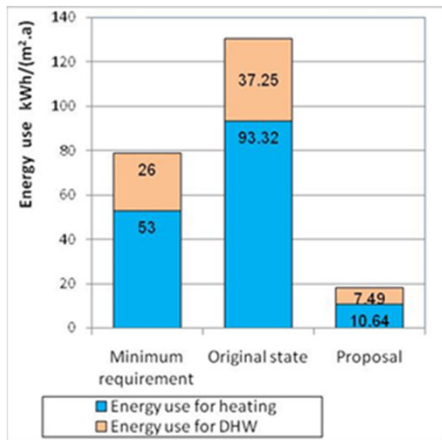
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The apartment building

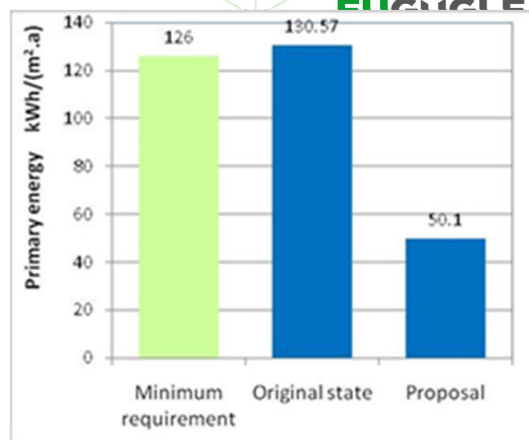
- Built in 1988,
- 7 floors, 42 apartments, 3 staircases
- middle section of three sections
- conditioned GFA 3,786.3 m².
- Energy consumption for heating was reduced by 74.8%



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Energy requirements for heating and hot water (kWh / (m2.a)) at at design time (2014), original state and proposal



Primary energy – demand for global indicator at design time (2014), the original state and proposal kWh / (m2.a)



The process of realization



The total installed thermal power for heating and DHW is **98.92 kW which is less than 100 kW** (requirement by law);

Heat and DHW proposed with **100% use of renewable energy technology**, heat pumps (cascade of 4 electric heat pump air / water firm Stiebel Eltron) with additional electric heating pads;

Installation of small photovoltaic sources with the performance of 10 kWp on the roof of the apartment building.

Nevertheless, the DH producer made an objection causing the delay of the building permit issue for construction of facilities for heat and TV.



Realization of disconnection

Despite the disconnection of the central section of the residential building from DH, the connections passing through the house had to be preserved.



Pôvodný prívod CZT z energokanálu



Nový návrat CZT do energokanálu



New distribution of heat and HW



Because of new routes for heat and hot water, it was necessary to assess the static load-bearing walls, especially at the entrance of the first floor



Heat pumps and photovoltaic



TSUS, npo



Thank you for your attention

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