

DISTRICT HEATING



City of Kalouga (Russian federation)

Prospective mission for creating a service concession for the district heating of the municipality of Kalouga and to improve heating efficiency comprising:

- Current situation and status of network
- Technical audit of major equipment
- Description of recommended scenarios

Partners of the project:

- Egis Bceom International : project lead as agent of the French fund to promote private initiatives (FASEP) in the mission dedicated to the municipality of Kalouga.
- Dalkia : Kalouga's industrial partner specialized in district heating.
- Best Energies : consultancy and expertise in implementing global service concession for energy production and distribution.

Key figures:

- 25 power plants (power capacity up to 3 Gcal/h),
- 54 boiler houses (power capacity from 3 to 20 Gcal/h),
- 9 boiler houses (power capacity from 20 to 100+ Gcal/h)
- Urban district network : total length: 393,3 km (2 or 4 pipes).

Context:

- Energy strategy of Russia is to reduce by 25% primary energy consumption in the residential sector.
- Kalouga's strategy for 2020: Improve by 35% network energy efficiency and 25% for buildings

- OPTIMISATION STUDY OF THE MUNICIPAL DISTRICT HEATING NETWORK -

Objectives:

- Demonstrate benefits in taking advantage of French know-how in the management of public service concessions leading to substantial improvements in energy management and efficiency.
- Develop skills and expertise of the public authorities in charge of the public concession management.
- Propose a secure legal framework so as to guarantee:
 - Suitable conditions for a profitable business to the concessionary company
 - Best quality of technical service, as well as giving the proper level of comfort to the dwellers while improving continuously energy performance.

Specific issues:

- Current customary pricing conditions has a highly structuring impact (fees are fixed nationwide and regional improvement financing is done one at a time).
- Neither any global cost approach nor any assessment of energy demand.
- The social, political and legal background implies:
 - An impossibility in the medium term, to measure energy consumption per capita.
 - Current legislation imposes drastic termination clauses in public concession contracts, holding back the concessionary company in investing.

Undertaken activities:

- Study of network infrastructure and heat line loss estimation.
- Track record of past 2 years technical interventions.
- Real energy consumption appraisal (versus theoretical which is traditional), Preliminary evaluation of global energy efficiency (KWh/m²).
- Identification of critical zones.
- Prospective study of possibilities to implement alternative renewable energy production (biomass and cogeneration).
- Simulation of network redesign:
 - Interconnection of 100 separate networks to reduce it to 20
 - Impact of the major 250.000 inhabitants planned extension of the town on the opposite bank of Oka river.
- Contribution to the evaluation of necessary investment to be included in the future service concession agreement.
- Conception of the different legal possible frameworks, with pros and cons of each scenario taking into account Kalouga's context.

Achievements:

Synthesis report of prospective study
Negotiations between city and regional authorities on one side and EGIS BCEOM with Dalkia on the other, are being continued.