Heat Subsidy Shift

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Major Problems of Heat Supply: Boilers

- Lack of financing and low fuel stocks
- Shortened heat supply season and lowered temperatures
- Absence of fuel and heat metering
- Shortage of qualified boiler personnel
Major Problems of Heat Supply: Networks

- High degree of wear
- Frequent failures
- Heat waste and leaks
- Insulation breaks and heat losses
- Disruption of efficient hydraulic regimes
- Multiplicity of owners
Major Problems of Heat Supply: Public Buildings

- Shortage of funds to pay for heat services
- Poor quality of heat supply
- Lack of heat meters
- Poor building insulation and maintenance
- Lack of qualified personnel
- Lack of financing to improve facilities’ energy efficiency
Why Subsidies?

- Salaries and pensions average only $100 and $20 per month
- High fuel-labor cost ratio
- Zero technical price elasticity (no meters, no valves)
- Complicated building ownership structure
- Political tool in election years
Heat Subsidies Share In Municipal Budgets: from 10 to 35%
Program Structure

- Regional legislation and policy
- Boiler house efficiency improvement
- Heat distribution system modernization
- Public buildings retrofits
- Residential building metering and efficiency
- Buildings Thermal Performance Standards
- Monitoring and verification systems
Program Development Process

- Reach agreement with city administration
- Collect and analyze data
- Develop efficiency projects
- Analyze economic and financial aspects
- Identify financial options
- Suggest policy solutions
- Prepare feasibility study
- Discuss options with city officials and potential lenders
- Develop business plan
- Organize project management and monitoring systems
Boiler-house efficiency

- Improve management (data collection, certification & regulation of heat tariffs)
- Equip boiler-houses with fuel and heat meters
- Modernize boiler-houses
- Switch to gas
Heat distribution system modernization

- Meter heat provided by electric utilities and enterprises
- Modernize heat distribution system
- Upgrade heating points and pump-houses
- Provide distribution system diagnostics and operations feedback
Energy efficiency in public buildings

- Building certification
- Energy audits
- Metering
- Thermal efficiency improvements
- Electrical efficiency improvements
Conducted All Over the Russian Federation

- Cheliabinsk
- Izevsk
- Yu.-Sakhalinsk
- Zheleznogorsk
Shaking the Money Tree

- Subsidy shift--from fuel to capital
- Oblast budgets and regional efficiency funds
- Heat supply company investments
- Russian, foreign, and multilateral banks
- Consumer expenditures
The CENEf Subsidy Shift Mechanism

• Maximizes use of internal city financial resources
• Avoids additional tax burden and tariff increases
• First case: In 1997, Kostroma re-allocated $1.2 million to new budget item, “Energy conservation program”
• Replication: Many Russian cities now use the subsidy shift mechanism
## Costs and Benefits: 15 Cities

<table>
<thead>
<tr>
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<th>Amount</th>
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<tbody>
<tr>
<td>Annual heat subsidies</td>
<td>210 million $US</td>
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<tr>
<td>Total recommended six-year investment</td>
<td>340 million $US</td>
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<tr>
<td>Estimated annual savings</td>
<td>105 million $US</td>
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Savings Monitoring and Verification

- CENEf developed monitoring and verification systems for three Russian cities
- Each locality requires specific modifications in municipal budget planning, heat supply contracts, and program design
- These systems permit loan repayment from savings and to account for a balance between shifted subsidies and program savings.
Ending Financial Eclipse

The Subsidy Shift Program:
- Eases municipal budget crisis
- Improves utility balance sheets
- Reduces economic waste
- Mitigates greenhouse gas emissions--as a side effect

Last Eclipse of the Millennium (Photo: W. Chandler)