

# Energy Saving in Multi-Apartment Housing Stock

Organizational, technical, economic,  
and motivation factors

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# What is Energy Saving?

Energy saving

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**Motivation**

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Possibility to regulate consumption

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Possibility to meter consumption



# Motivation to Save Energy

- Material benefits from energy saving;
- Compliance with mandatory requirements of laws and regulations.



# Potential Initiators of Energy Saving in the Housing Sphere

- Government;
- Housing organizations;
- Residents.



# Key Energy Saving Measures

- Closing of contour of residential building (double air locks);
- Optimization of ventilation;
- Weatherization of attics;
- Weatherization of basements;
- Weatherization of walls;
- Weatherization of windows;
- Shielding of heating devices.

Conclusion: key measures are to be carried out on buildings scale rather than on an individual apartment scale.



# Technical Problems of Efficient Energy Consumption

- Lack of technical possibility to regulate consumption of thermal energy in apartment;
- Reduced possibility to regulate thermal energy consumption on building scale.

Conclusion: it is necessary to switch to individual thermal stations.



# Energy Efficiency and Government

- Setting tariffs for population, which cover the costs for supply of resources;
- Legislative and regulatory restrictions;
- Budget allocations for energy saving;
- Creation of financial institutions to support investments in housing modernization.



# Efficiency and Housing Organizations

Potentially: key participant to the process of energy saving.

Model: payment of communal services by residents on the basis of contracts according to the established standards; payment of energy resources to energy saving organizations based on a house metering device (instead of payment of current costs – capital investments).

Problems: lack of professional business in real estate administration.



# Motivation of Energy Saving at the Level of Housing Utilities

## External Incentives:

- Development of competition in administration of residential multi-apartments houses;
- Consumers' demand (owners and tenants of housing) for qualitative services at minimal cost;
- Observance of legislative norms in the sphere of energy saving.



# Energy Efficiency and Residents

- Reduced possibility to implement energy saving in apartments;
- Need to unite into associations of owners of housing;
- Need to attract professional managers to maintenance of houses;
- Need to sign object-oriented contracts on supply of energy resources to residential houses.



# Legislative Support

- Housing Code of Russian Federation is targeted to development of professional competitive business in administration of multi-apartment houses.

Tools:

De-monopolization of demand;

De-monopolization of supply.



# Motivation of Energy Saving with Individual Consumers

## Creation of system of payment for actually consumed resources, BUT:

- Technical possibilities to regulate and meter consumption are reduced;
- Financial saving, received as a result of energy saving, should be comparable or should exceed the costs for individual metering of consumption.



# Organizational Aspects of Instrumental Metering

- Availability of regulatory and legal framework, which allows to settle invoices based on meters' readings;
- Availability of enforcement mechanisms to use meters for the purpose of billing the consumed resources;
- Availability of infrastructure for maintenance of metering devices (repair, verification, etc.)



# Conclusions

- there is a serious potential for energy saving
- organizational and economic models of realization are complicated, whereas the administrative ones are inactive
- consistent and long-terms work of all participants is required.

