

***MunEM:
Sustainable energy management on municipal level***

WP 2: Energy policy and economical framework

Report 2:

**Findings of policy monitoring and proposals for the optimization of
policy instruments and regulatory framework**

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1. Preface

The EU co-financed Interreg IVB project MunEM aims at promoting sustainable municipal energy management in Kaliningrad Oblast (KO). The following report summarizes selected findings of the MunEM Work Package 1 (*Management and Fundamentals*) and Work package 2 (*Energy policy and economical framework*) and provides policy recommendations for regional and local policy makers. It also contains selected references to EU Directives and good practice examples from old and new EU Member states, CIS countries and other regions in the Russian Federation.

Specifically, the report refers to the findings of

- the MunEM WP 1 report “*Assessment of existing structures in energy policy of Kaliningrad Oblast*”
- the MunEM WP 2 report “*Legal situation and regulatory framework in Kaliningrad Oblast*”

The report follows basically the structure of those reports and includes the following sections:

- Organisational structure of the energy supply sector (WP 1)
- General regional energy strategies (WP 1)
- Institutional setting in the field of energy efficiency (WP 1)
- Regional energy efficiency policies and programmes (WP 1)
- Regulatory framework and tariff setting (WP 2)
- System of social assistance in the municipal housing and utility sector (WP 2)
- Additional energy supply related policy and regulatory issues (WP 2)
- Policy and regulatory framework related to energy end use efficiency (WP 2)
- Management and administration of multi-family buildings (WP 2)
- Energy use in public buildings and properties (WP 2)

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Kaliningrad Regional Energy Efficiency Centre

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Municipality of Svetlyj

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Housing Initiative for Eastern Europe (IWO e.V.)

Ministry of Science, Economic Affairs and Transport, Schleswig-Holstein

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Issues dealing with financing of municipal energy efficiency measures are covered by a separate report elaborated under MunEM WP2 (“Assessment of existing financing instruments and proposals for their further development”).

2. Organisational structure of the energy supply sector (WP 1/WP2)

	Findings of policy monitoring	Recommended policy measures for KO	Good practice experience from EU countries and other regions	Responsibility
Electricity sector (WP1)	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - Liberalisation and de-monopolization of the electricity market in KO can be generally regarded as supportive of energy efficiency. Proposed privatization facilitates investments in generation, transmission and distribution assets. - <i>Jantarenergo</i> is going to spin-off two entities (one retail company, one generation company). These companies' shares shall be auctioned off and the auction proceeds will be used to develop the power grids of <i>Jantarenergo</i>, which is going to function as a mere distribution company. Additional shares shall be issued in favour of the KO Government and the Government's stake in the company may make over 25 percent plus one share. <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Compared to other regions of the RF, electricity sector liberalization and privatization in KO is lagging behind. Due to its specific exclave character, KO is considered a region where competition in the electricity sector is possible only to a limited extent (retail competition). - Unclear perspectives of future electricity market structure in KO 	<ul style="list-style-type: none"> - Continue to support the restructuring of <i>Jantarenergo</i> and the development of an effective retail electricity market. In the EU, public energy management includes the optimization of fuel, electricity and heat procurements and the possibility for public authorities (and other eligible customers) to choose among different electricity retail companies. - Experience of electricity market liberalisation and de-monopolization in Germany and other countries shows that special support measures should be taken for modern and efficient cogeneration facilities (cf. below, chapter 5). - Preserve the technical integration with the electricity systems of the Baltic countries. 		

Heat sector (WP2)	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - In some municipalities (e.g. <i>Mamonovo</i>) municipal utility service provision is unified in holding type municipal housing and communal service companies. This allows for joint billing and collection for all services, smaller seasonal fluctuations in financial streams, and optimized supervision, management, maintenance and administration of services. <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - DH utilities are mostly owned and operated by the municipalities and have the status of municipal unitary enterprises. They have little autonomy in determining how retained earnings are used or cash flows are managed and generally rely on municipal funding to accomplish any type of project requiring investment capital (cf. IFC/World Bank 2008). <p>Cf. reports prepared in the frame of Work Package 4</p>	<ul style="list-style-type: none"> - Consequently continue to transform municipal heat suppliers into fully commercial entities or PPPs. Under the latter, ownership of infrastructure remains with local governments, but management will be performed by private companies on the basis of contractual relationships with the municipality. - Cf. reports prepared in the frame of Work Package 4 		
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3. General regional energy strategies (WP 1)

	Findings of policy monitoring	Recommended policy measures for KO	Good practice experience from EU countries and other regions	Responsibility
Regional Energy Strategy (2007-2031)	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - The Strategy targets fuel diversification and a more balanced fuel structure. It envisages the elaboration of a new regional energy efficiency programme 2009-2013. - The Strategy envisages a considerable extension of electricity generation capacities and gives a certain priority to the use of local and renewable energy sources (RES) by setting ambitious quantitative policy targets. <p><u>Weaknesses:</u></p>	<ul style="list-style-type: none"> - Include quantitative and verifiable energy efficiency targets; define more precise measures promoting rational energy use and strengthen the role of the public sector as a "leader by example". - Re-assess the future electricity demand projections and forecasts. 	<p>The EU Directive on Energy End-use Efficiency and Energy Services requires EU Member States (MS)</p> <ul style="list-style-type: none"> - to reach a national indicative energy saving target of annually 1% 2008-2017 in the retail, supply, and distribution of electricity, gas, heat and other energy products by energy services and other energy efficiency improvements. - to draw up National Energy Efficiency Action Plans (to be approved and 	<p>Regional government</p>

	<ul style="list-style-type: none"> - The Strategy has a rather strong supply side bias. No quantitative policy targets for energy efficiency, particularly end-use energy efficiency are included and there is a lack of concrete measures and activities on energy saving and energy efficiency. - It might be questioned whether the future energy demand forecasts are realistic. 		<p>reviewed by the EU Commission)</p> <ul style="list-style-type: none"> - to ensure that the public sector fulfils an exemplary role - to set up demand side obligations for energy distributors and retailers (e.g. to offer energy services, energy audits, contribution to EE funds etc.) - to promote individual metering and informative billing of energy consumption - Member States might set up energy efficiency funds. <p>Several countries (Denmark, Romania, Latvia) have set targets going beyond the annual suggested figure of 1.5%.</p> <p>Among CIS countries, the Republic of Belarus has set a series of energy efficiency targets for the state sector through a decision of the council of ministers in December 2002.</p>	
<p>Future electricity supply and development of electric generation capacity</p>	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - The Regional Government takes serious efforts to secure reliability of electricity supply. It launched a programme to develop electricity generation capacity mainly based on local and renewable fuels based on peat, wood and municipal waste using cogeneration plants. - The Regional Government plans to increase the use of local and renewable energy sources (cf. Regional Energy Strategy 2007-2031). - The Federal Government is going to draft a resolution on the creation of mechanisms to provide economic incentives for voluntary reduction of electricity consumption (cf. RAO EES 2008). <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - There is a bias among policy-makers towards 	<p>MunEM recommends supporting sustainable energy management: Sustainable energy management includes the following elements:</p> <ul style="list-style-type: none"> - Energy efficiency and the rational use of energy should be considered as important least cost sources in meeting expected additional electricity demand. Systematic electricity grid upgrades, consequent reduction of transmission and distribution losses and demand side management measures shall be cornerstones of any future electricity development strategy. A recent study by the World Bank illustrates that it is three times less expensive to invest in energy saving and energy efficiency measures than the introduction of new capacity (IFC/World Bank 2008). <p>- Encourage electricity providers in investing in</p>		

	<p>constructing new generation capacity based on large generation using nuclear fuel, coal or natural gas. However, the option of energy savings and demand side management is not considered adequately yet. Electricity grid upgrades, reduction of the huge transmission losses, demand side management and development of modern, highly efficient decentralized electricity generation units producing electricity and heat in cogeneration mode are overlooked.</p> <ul style="list-style-type: none"> - Lack of a coherent strategic energy planning at regional level due to different interests of involved actors and strategies (e.g. Regional Government, <i>Gazprom</i>, <i>Inter RAO EES</i>, <i>Energoatom</i>) and segmented strategy development. - Weak coordination of electricity sector development planning and strategic development planning of other sub-sectors (gas, heat). - Exaggerated electricity demand growth projections partly based on questionable assumptions. - Non-transparent decision-making processes; low level of public participation in energy policy making. - The recently announced construction of the 2,400 Baltic Nuclear Power Plant (NPP) and of the second 450 MW unit of <i>Kaliningradskaya</i> TEZ-2 will lead to huge excess capacities; this option is highly dependent on the export possibilities which are presently very restricted. - Construction of a 2,400 MW NPP is mainly export driven, and must be considered oversized and disproportionate compared to the size and needs of KO. - NPPs should be considered as a risk technology; there is the unresolved problem of spent nuclear fuel storage and nuclear waste management; nuclear waste transports will certainly affect transit 	<p>energy efficiency. Support additional DSM measures by providing incentives to consumers to reduce electricity consumption, particularly in periods of peak load, thus lowering the need of generation capacity (e.g. by differentiated tariff schemes or interruptible energy supply contracts which make it possible to reduce the load and disconnect consumers during peak hours).</p> <ul style="list-style-type: none"> - If new generation capacity will be launched, priority should be given to highly efficient energy conversion technologies, particularly cogeneration. - Develop a sound combination of centralized and decentralized power supply comprising 2 larger (400 MW) power units and a larger number of highly efficient small to medium scale power units (20-30 MWe) preferably based on cogeneration and linked to local DH networks. These plants should be preferably based on renewable fuels (biomass), municipal waste, peat, or natural gas. Distributed generating facilities can help to remove transmission bottlenecks and improve overall system reliability. - Encourage rational electricity use among final customers (see below) and promote demand side management activities by electricity supply companies. - Promote the use of renewable energy sources (RES) for electricity (and heat) production. The most promising RES include wind, small hydro and biomass (in more detail see below). - A special focus should be devoted to the systematic assessment and development of the regional biomass potential (agricultural and forestry residues, dedicated energy crops, organic fraction of industrial waste and municipal solid waste). The biomass sector 		
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	<p>countries.</p> <ul style="list-style-type: none"> - The realization of the NPP project only makes sense if respective export markets are being developed. The project competes with the plans of the Baltic countries and Poland to construct a new NPP as well. Electricity exports to Poland and Western Europe require large investments for transmission and distribution grid reinforcements and modernization, as well as construction of an electricity transmission line to Poland. - The costs of constructing a NPP should be carefully assessed; there have been unprecedented price increases for nuclear fuel, equipment, construction and decommissioning in recent years. - Experience with previous NPP projects shows that the Russian nuclear power industry has ambitious development plans, but implementation faces considerable delays, which increases construction costs. There seems to be a lack of sufficient capacity to produce the necessary technologies and equipment. - Nuclear power has only a weak support by the local population (a recent poll conducted in 2007 showed that 67 per cent of respondents were against constructing a NPP in KO). - There are no quantitative policy targets for energy efficiency, particularly end-use energy efficiency in the electricity sector. There is a lack of concrete measures and activities for energy saving and energy efficiency in the electricity sector formulated in the Regional Energy Strategy 2007-2031. 	<p>offers key opportunities to be effectively linked to other regional policy goals like employment creation, rural development, business development, etc.). The Regional Government might consider the development of a <i>Regional Biomass Master Plan</i>.</p> <ul style="list-style-type: none"> - Construction of new generating facilities in the region should be better coordinated with the construction plans of the neighbouring EU countries. 		
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4. Institutional setting in the field of energy efficiency (WP 1)

	Findings of policy monitoring	Recommended policy measures for KO	Good practice experience from EU countries and other regions	Responsibility
Institutional setting	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Lack of administrative and policy capacities in the field of energy efficiency (EE). - Often energy efficiency legislation is not followed by respective implementation schemes or is too ambitious for the existing departments to implement (implementation gap). - Since 2004, existing institutional capacities have been reduced. EE departments and units at the Regional Government, at the Regional Energy Commission and <i>Jantargosenergonadzor</i> have been abolished. <i>KREEC</i> acts as a non-governmental entity largely on commercial terms and is mainly engaged in energy consulting and auditing. <i>Rosenergonadzor</i> performs mainly technical supervision and control tasks. 	<ul style="list-style-type: none"> - Re-build administrative capacities for the promotion of EE and designate a ministerial department with the responsibility, authority and necessary funding to develop and implement a comprehensive energy efficiency policy for KO. - Strengthen the role of existing actors in the field of EE and RES (e.g. <i>KREEC</i>) having the respective expertise and which might act as a key coordinator and facilitator, e.g. by establishing a Public Private Partnership, until an energy efficiency agency is established. - Establish in the medium term a regional energy (efficiency) agency which serves as a central coordination and steering unit (cf. Delegation of the European Commission to Russia/COWI 2007). 	<p>In <u>Germany</u> energy (efficiency) agencies at national, regional and local level play a key role as EE promoters. Depending on the individual situation their tasks may include</p> <ul style="list-style-type: none"> - Policy consulting, development and implementation - Project consulting, assessment, and financing - Awareness-raising, motivation, networking - Project financing/ - Engagement in Public Private Partnerships (PPPs) - Promotion of Public Private Partnerships - Monitoring, evaluation and dissemination of good practices - Education and training - Support to pilot and demonstration projects - Mediators between energy service companies (ESCOs) and clients (e.g. municipalities). <p>Energy agencies differ in their legal status ownership and financing structures. They can be fully or partly financed from regional or municipal budgets, partly organized as PPP. The <u>Energy Agency of Schleswig-Holstein</u> is a structural unit of the publicly owned regional development bank (Investitionsbank Schleswig-Holstein).</p>	Regional government

5. Regional energy efficiency policies and programmes

	Findings of policy monitoring	Recommended policy measures for KO	Good practice experience from EU countries and other regions	Responsibility
Regional energy saving law	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - Energy saving laws exist at national and regional level. - The Regional energy saving law contains promising elements (e.g. mandatory municipal energy efficiency plans, establishment of a regional energy saving fund) - Amendments to the law have been drafted (but not adopted yet) <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Laws have mostly a declarative character; there is an implementation gaps due to lack of funding and endorsement of secondary legislation. 	<ul style="list-style-type: none"> - adopt the proposed amendments to the existing law - develop secondary legislation for strategic action fields, like the public sector including public buildings and properties (e.g. legislation promoting energy management and energy audits in public buildings) 		Regional government
Regional and municipal energy efficiency programmes	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - The KO has already experience with implementing a regional energy saving programme (2001-2005) - Implementation of 70% of the total planned Oblast government funding has been actually provided. - The elaboration of a new energy saving programme is envisaged for 2009-2013 (according to the Regional Energy Strategy 2007-2031). - The regional energy saving law stipulates an obligation for municipalities to elaborate energy efficiency programmes. Several pilot municipalities have already developed energy efficiency programmes (cf. the good practice example of <i>Mamonovo</i> which is currently under implementation) <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Implementation of the regional energy saving programme was incomplete due to lack of funding 	<ul style="list-style-type: none"> - Develop realistic, clear, verifiable and ambitious targets and measures, with clear responsibilities and funding sources - Develop specific sub-programmes targeting residential buildings, public buildings and properties, and other sub- sectors etc. - Provide effective incentives (e.g. investment grants, tax rebates, interest loan subsidies for energy efficiency investments). - Develop proper monitoring and evaluation systems. - Provide additional funding to properly endow the new energy efficiency programme. 		Regional government

	<p>from other (non-budget) sources.</p> <ul style="list-style-type: none"> - Lack of a Regional Energy Efficiency Fund to (co-)finance energy efficiency measures - Drafting and adoption of a proper energy efficiency strategy and respective programmes take too much time - Only very few municipalities comply with the requirement to endorse and implement municipal energy efficiency programmes due to lack of funding sources and incentives. 			
Energy efficiency programmes for the public sector”		<ul style="list-style-type: none"> - Develop regional and municipal energy efficiency sub-programme targeting public buildings and properties (see below) 	<p><i>Croatia</i> has recently developed a “Own house” public sector energy efficiency programme as well as a programme for energy management systems in pilot municipalities and countries.</p> <p><i>Belarus</i> is currently implementing a public sector energy efficiency programme.</p>	

6. Regulatory framework and tariff setting (WP 2)

	Findings of policy monitoring	Recommended policy measures for KO	Good practice experience from EU countries and other regions	Responsibility
Institutional framework	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - Regulatory agencies for tariff regulation are established both on the federal and regional level. - Proposed changes for reorganization of regulatory competences in the framework of the planned Heat Supply Act (cf. draft version from Feb 21, 2008) <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - High level of fragmentation of regulatory competences between federal, regional and municipal authorities. - Regional regulatory authority of Kaliningrad SPRPT reports directly to the Governor, has only a limited degree of independence and is subject to political influence to a considerable extent. - Potential conflict of interest of municipalities as regulators and owners of district heating systems. 	<ul style="list-style-type: none"> - Simplify and streamline the tariff regulation procedures. - Prevent too strong political interference in the tariff setting process. - Provide the regional authority more regulatory freedom and a higher degree of independence from short-term political pressures (cf. also <i>Regional Energy Strategy 2007-2031</i>; chapter VIII) 		Federal government/ regional government
Tariff setting (electricity)	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - Ongoing liberalization of Russian electricity market - Gradual liberalisation of wholesale electricity prices (household tariffs remain regulated up to 2011 and beyond) - Unbundling of electricity generation, transmission and distribution costs - Electricity tariffs for end users increasingly reflect actual costs - Certain elements of <i>demand side management</i> 	<ul style="list-style-type: none"> - Tariff level and design should reflect as closely as possible the costs as the utility incurs them. This means phasing out of customer cross-subsidization and consequent introduction of cost-reflective tariffs. - Consequently remove existing cross-subsidies 		Federal government Regional government/regulatory authorities

	<p>(e.g. differentiation of day/night tariffs) have been included into the tariff structure.</p> <ul style="list-style-type: none"> - In the field of electricity transmission and distribution network regulation a transition from the traditional principle of <i>cost plus</i> pricing towards a combination of <i>rate of return</i> and <i>incentive</i> regulation is envisaged, which contributes to stimulate energy efficiency investments. - Electricity tariffs for end users are expected to rise significantly towards covering long term marginal costs. <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Restrictive tariff caps set by federal regulatory authorities; "inflation limits". - Cross-subsidies between industry and household customers are still prevailing due to social policy rationales. - In the past electricity tariffs growth was below consumer price index growth. Up to 2006 electricity tariff growth below real income rate growth. - KO is being considered a region where competition in the electricity sector is possible only to a limited extent (retail competition). 			
<p>Tariff setting (district heating DH)</p>	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - Unbundling of heat production, transport and distribution costs - Heat suppliers are principally eligible to include investment surcharges to partly finance investment programs coordinated with municipalities and the Regional Government. - Indexation of heat tariffs - Phasing out of direct heat subsidies and full cost coverage by households envisaged by 2009. <p><u>Weaknesses:</u></p>	<ul style="list-style-type: none"> - Continue the tariff reforms and develop market based policies which allow full cost recovery and do not use the tariff mechanism to perform social policy. - Tariff setting needs to allow for an appropriate inclusion of investment costs in overall cost assessments. Upper tariff ceilings should be removed or be more flexible. - With increasing level of building heat metering switch gradually from single to two tier tariffs with a component reflecting fixed utility costs (capacity charge) and a variable 	<p>In <u>Germany</u> district heating (DH) prices are generally not regulated and DH is supplied on a competitive basis.</p> <p>Several regulatory agencies in Eastern Europe use so called price cap regulation, (or incentive regulation) which allows heat suppliers to make extra profits through energy efficiency improvements.</p> <p>DH prices in <u>Czech Republic</u> are regulated. However, they cover all eligible costs and an appropriate profit margin. The price</p>	<p>Federal government</p> <p>Regional government/Regulatory authority</p> <p>(Municipal governments)</p>

<ul style="list-style-type: none"> - Restrictive tariff corridors and heat tariff growth caps set by the federal regulatory authorities inhibit the appropriate inclusion of investment surcharges. - The regulatory framework is based on “economically justified” tariffs and is basically a “cost plus profit” regulatory regime. Tariffs are based on a standard calculation of operating costs plus a standard margin to allow for capital investments and profit. The size of this margin is generally too low to even properly maintain infrastructure, let alone invest in development or service improvement. - Heat tariffs do not reflect the full cost of distribution losses. Regulators only allow the calculation of normative losses (maximum 13 per cent) which often is much lower than actual losses. - Due to the tariff level, DH companies not able to raise sufficient funds for upgrading the DH systems - Existing “Cost plus” calculation methodology for retail tariffs does not necessarily stimulate cost savings and efficiency measures. Utilities rather tend to increase O&M cost basis. - Heat tariffs are based on a one tier tariff structure, in which customers pay a volumetric tariff without a fixed cost component. This can cause additional financial instability of DH companies. - In some cases there still exist cross subsidies between different consumer groups for social protection rationales - Regional cross subsidies at heat production level (uniform heat sales prices for all heat sources of <i>Jantarenergo</i>) - Calculation of distribution losses is based on normatives (e.g. 13% in <i>Svetlyi</i>) not reflecting the 	<p>component corresponding to fuel and other variable costs (energy charge). Due to the high meter installation rates, Moscow is presently introducing two tier tariffs and serves as a pilot region.</p> <ul style="list-style-type: none"> - Use price adjustment formulas (price escalator) if input prices exceed certain thresholds. - Consider to gradually switch from “cost plus” pricing to more sophisticated regulatory methodologies, like “rate of return” regulation in combination with incentive based regulation (e.g. based on price caps, which allows heat suppliers to make extra profits through energy efficiency improvements; so called RPI-X formula; cf. right column). 	<p>regulation is based on a combination of “cost plus” regulation and incentive regulation. DH prices are allowed to increase only by a certain percentage that is lower than the inflation retail price index according to the formula RPI minus an efficiency coefficient “X”. (RPI-X). The efficiency coefficient “X” I generally considered a productivity factor for the utility’s operation. This type of regulation allows utilities discretion over all investment and operating decisions. In contrast to rate-of-return regulation, utilities realize all gains from efficiencies achieved beyond the established thresholds. Utilities can realize all the value of cost reductions made beyond this threshold. The regulation rules also allow for justified price increases, e.g. in the case of sudden increase of fuel prices. However, price cap requires sophisticated monitoring of service quality.</p> <p>Also <u>Latvia</u> has adopted a price cap tariff setting method with respective tariff ceilings taking into account inflation and the expected efficiency level of utilities’ operation.</p>	
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	actual losses		
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7. System of social assistance in the municipal housing and utility sector (WP 2)

	Findings of policy monitoring	Recommended policy measures for KO	Experience in other countries	Responsibility
Affordability of utility services	<p>Affordability of energy services seems not to be a problem for average households, but for low income and other vulnerable households. They pay a higher percentage of household expenditures for utilities than other groups.</p> <p>On average, <u>housing and energy</u> expenditures in total household income amount to 18% in <i>Svetlyj</i> and to 7% in <i>Mamonovo</i>.</p>		<p>Generally, affordability can be defined as share of utility payments in total household income (or better: total household expenditures). Affordability becomes critical if utility payments exceed a certain percentage of total household income/expenditure.</p> <p><i>Fankhauser/Tepic</i> (2005). suggest an acceptable affordability ratio of maximum 25% for utility payments electricity, heat, water supply and sanitation) in total household <i>expenditure</i> (electricity 10%, heating 10%, water/waste water 5%).</p> <p>In <u>Germany</u> the average share of housing, housing maintenance and energy costs in disposable household income has increased from 21% (1973) to 32% (2003).</p>	
Heat subsidies	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - The traditional system of direct heat subsidies to utility providers is going to be phased out by 2009 and final customers are required to cover the full costs of service provision. - KO is currently shifting from a system with tariff subsidies to a system of targeted, income based social assistance with housing allowances and other types of social assistance 			
Lgoti and	<u>Strengths:</u>	- <i>L'goti</i> which are not intended to be targeted,		

<p>privileges (not income based)</p>	<ul style="list-style-type: none"> - The traditional system of (non-income based) privileges in the form of 50%-100% tariff discounts/exemptions for various categories of privileged persons has been gradually transformed since 2004 (several privileges have been phased out, others have been monetized). - Transition from tariff discounts to monetization of benefits (payments in cash instead of utility tariff discounts). 	<p>do not necessarily protect the poor households. Consequently continue to remove non-income based privileges and put the focus on social assistance for low income and vulnerable households; secure that privileges are monetized and do not allow eroding the financial stability of utility providers.</p>		<p>Federal government (Regional government?)</p>
<p>Housing allowances</p>	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - Transition from tariff subsidies and non-income tested category-based privileges (tariff discounts) to income based social assistance schemes based on housing allowances (since 1994). - Housing allowances for low-income households are based on a “burden limits” approach: Housing allowances are paid to households who spend more than a specified percentage of their total disposable income for housing and utility services (22%). - Notional burden limits are fixed by federal standards and pre-determine basic needs level of consumption. - Typically low-income households ask for the subsidies to secure themselves from non-payments. The share of non-payment is about 10%. <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Basis for the payments are notional amounts of services and consumption - Coverage problem; the scheme excludes households which spend too low shares of their income. - Numerous low-income households do not apply. - Weak energy saving incentive. 	<ul style="list-style-type: none"> - Elimination of heat subsidies has to be accompanied by a well designed social safety net based on targeted assistance for low-income and vulnerable households to mitigate the effects of rising energy tariffs. - Continue to promote consequent transition to targeted and income proved social assistance targeting explicitly low income and vulnerable households. - Consider to transform the actual “burden limit scheme” by a scheme based on earmarked cash transfers focusing on actual income. - Consider that through energy efficiency measures like installation of heat metering and heat control devices vulnerable citizens might be protected effectively against rising energy tariffs and public subsidy payments can be reduced. - Integrate energy efficiency into the housing allowance system e.g., by enabling low income households to use some of their benefits for energy efficiency. 	<p>In <u>Germany</u> there is a system of targeted social assistance through <u>housing allowances resp. housing benefits (Wohngeld)</u> for low-income households. Both tenants and owner-occupiers may apply for income-tested housing allowances. Housing allowances are calculated in relation to household size, the size of rent payments (resp. housing costs) and income levels. There are upper income and rent limits. The allowances are oriented at gross rent (excl. heating cost). The housing allowance scheme has been recently reformed. From 1.1.2009, average allowance payments amount to 142 €/month/household compared to 90€ in the previous years. Due to the heavily increasing heating costs, which almost doubled since 2001, recent amendments stipulate that also heat costs are partly covered by a flat (lump-sum) rate depending of household size.</p> <p><u>Poland, Estonia and Latvia</u> provide earmarked cash transfers for low-income households.</p> <p>In <u>Latvia</u>, payments to housing associations’ monthly operations and maintenance funds are considered allowable expenses for social benefits</p>	<p>Federal government</p> <p>Regional government</p> <p>Municipal government</p>

	- Regional government is sometimes only partially reimbursed for housing allowance expenditures.		(USAID et al. 2007b).	
Other forms of social assistance	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - Besides the general burden limits (see above) local governments cover 50% of the public utility costs for vulnerable groups of the population such as retirees, families with many children, invalids etc. - In <i>Svetlyj</i>, 814 low-income households (8% of all households) receive respective social assistance payments, which are fully covered from the Oblast budget. - Several municipalities develop complementary targeted social assistance programmes (e.g. <i>Svetlyi</i>) 	<ul style="list-style-type: none"> - Consider that through energy efficiency measures the regional and municipal governments can effectively protect vulnerable households from tariff increases and also reduce the level of social assistance payments. - Consequently promote the installation of heat and hot water meters and heat control devices in social housing units. - The regional and municipal governments are recommended to provide financial assistance to low-income households in multi family buildings where the homeowners plan thermal building refurbishments. 	<p><u>Germany:</u></p> <p>Besides targeted social assistance through earmarked housing allowances, the social safety net includes unemployment benefits and social welfare benefits (<i>Sozialhilfe</i>) for vulnerable households. Social welfare benefits are non-earmarked cash transfers being paid for individuals who cannot sufficiently raise money for indispensable livelihood expenses. Eligible tenants receive automatically a payment to cover 100% of their rent costs. Heat costs are covered by municipalities by lump sum rates.</p>	Regional government, municipal governments

8. Additional energy supply related policy and regulatory issues (WP 2)

	Findings of policy monitoring	Recommended policy measures for KO	Good practice experience from EU countries and other regions	Responsibility
Fuel prices	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - The Federal Government plans to considerably raise domestic gas prices for industrial consumers to reach European levels by 2011-2015. - Expected gas price increase in KO by 3.5 times compared to 2005 levels (cf. <i>Regional Energy Strategy 2007-2031</i>). <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Domestic gas prices for households are presently kept artificially low due to social policy rationales. - Although KO has already relatively high wholesale gas price levels compared to other regions in the RF, <i>Gazprom</i> complains that the level of gas prices is still not cost reflective (e.g. transit fees not 			

	fully included). - Considerable cross-subsidies prevail in the gas sector favouring household consumers.			
Heat supply	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Due to poor maintenance in the past and other structural deficits related to the peculiarities of the centrally planned economy, the technical and economical performance of many DH systems is critical today. DH encounters increasing competition from more flexible and cheaper heating options such as natural gas. This is aggravated by price distortions in favour of natural gas. Uncontrolled disconnection from customers, particularly in areas with high heat load densities, jeopardizes the competitiveness of DH and aggravates the economical situation for the DH utility company. Often it is overlooked that in the long run DH might be the more affordable heating option if it were appropriately sized, metered, regulated and maintained in good repair. - Among customers there often prevail misconceptions and DH systems are disregarded <i>per se</i> by the mere fact of being a centralized form of energy, implying that it is necessarily inefficient and inflexible. Such prejudices disguise the fact that, where e.g. based on waste heat utilisation, DH systems are more cost efficient in the long run than the direct use of natural gas and provide manifold opportunities to increase the use of locally available RES. - Surplus of heat produced by the local heat only boilers (HOB). - The heating season is a limited period of the heat and hot water supply. - Statistical data and information on heat use is weak and no heat supply/demand balances exist for regions or towns. 	<ul style="list-style-type: none"> - To organize round-the clock operation of the heat and hot water supply systems. - Make installation of heat and hot water meters compulsory and provide incentives for meter installations. - The Federal and Regional Government shall continue to create favourable conditions for heat market participants by attraction of private investors (cf. MunEM WP2 Report <i>“Assessment of existing financing instruments and proposals for their further development”</i>) - The Federal and Regional Government shall adopt the Heat Law adequately taking into account existing experiences and good practices of other FSU and transition countries and provide provisions to support DH rehabilitation and energy efficiency (cf. the Heat Act of <i>Lithuania</i>; cf. next column). - Improve the statistical data collection 	<p>Owing to intensive support by the Danish government, in 2003, <i>Lithuania</i> has adopted a Heat Law including major provisions on</p> <ul style="list-style-type: none"> - Wholesale competition in heat production - Supporting CHP and renewable heat - Regional and municipal DH sector development plans including priority zoning - Heat purchases from independent heat producers - Metering and billing provisions - Pricing - Attraction of private investors - Municipal energy managers <p>This law has been amended in 2007.</p> <p>The Russian translation of this law can be found at http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_e?p_id=313370</p>	Federal government (Regional government)

	<ul style="list-style-type: none"> - Inappropriate tariff setting (see above) - There is currently no legislation in place targeting explicitly the heat sector which has a strategic importance for energy efficiency. Several draft heat laws are being discussed already since 2002. 			
<p>Municipal energy planning/ priority zoning</p>	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - The Regional Energy Strategy 2007-2031 envisages the development of municipal heat master plans <p><u>Weaknesses</u></p> <ul style="list-style-type: none"> - DH system rehabilitation projects tend to be done in a fragmented manner: There is a tendency to optimize supply and demand side in isolation from each other (lack of integrated approaches). - There is a trend of isolated heat supply optimization without sufficient coordination with other energy sub-sectors (electricity supply and gas supply). - DH encounters increasing competition from more flexible and cheaper heating options such as natural gas; uncontrolled disconnection from customers, particularly in areas with high heat load densities, jeopardizes the competitiveness of DH and aggravates the economical situation for the DH companies; in the long run, however, DH might be the more affordable heating option if it were appropriately sized, metered, regulated and maintained in proper repair. - No heat planning or zoning providing for a balanced approach between district heating, centralized and decentralized/individual heating options is currently applied or mandated by law. - There is no energy balance developed both for the municipal and regional levels. - Energy management systems have not been developed for either of these levels. 	<ul style="list-style-type: none"> - Avoid uncoordinated disconnection of customers and decentralization of heat supply systems in areas with high heat load densities where (modernized) DH/CHP systems have potential advantages compared to gas heating or other heating solutions - Promote the development of municipal energy/heat plans which identify available heat supply sources, assess the existing and future heat load distribution, optimize the use of centralized and decentralized heating options and achieve a rational balance, include detailed heat load analysis and establish priority zones for different types of heating, and assess the feasibility of CHP. - Require detailed demand assessments to be included into such plans and avoid supply side bias. Combine both supply and demand side options to meet energy demand. - Promote <i>integrated</i> energy planning which balances supply and demand, develop synergies between adjacent sub-sectors (e.g. waste to energy, water, use of waste heat from industrial processes, including the potential use of distributed CHP). - A pre-requisite for developing heat supply plans is to have a sufficient information basis. 	<p>In <u>Germany</u>, often municipally owned multi-utility enterprises (<i>Stadtwerke</i>) provide municipal services like gas, electricity and DH. In such municipalities, but also other municipalities often energy planning is performed including priority zoning for different types of heating. However, energy planning is not compulsory for municipalities in Germany.</p> <p>In <u>Denmark</u>, municipalities are obliged to elaborate municipal heat plans. They can set mandatory and separate DH and natural gas zones where buildings are connected to one or the other heat source. <i>Integrated Resources Planning</i> allows for a balanced comparison of different supply and demand side options.</p> <p>In 2003, <u>Lithuania</u> has adopted a Heat law which makes municipal heat planning mandatory for municipalities. The main objective of these heat plans is to meet the needs of heat customers at lowest costs and within the limits of permissible negative environmental impacts. The law envisages the possibility to develop priority zones for DH and other heating options and has been complemented by secondary legislation providing guidance on how to elaborate municipal heat plans.</p> <p><u>Estonia</u> is one of few transition economies practicing priority zoning for DH.</p> <p>Components of municipal heat plans (cf. USAID 2007a)</p>	<p>Federal government</p> <p>Regional government</p> <p>Municipal government</p>

			<ul style="list-style-type: none"> - Zoning of urban area according to heat load densities (DH zones and gas supply zones) - Calculation of annual heat demand by zones - Review of costs and benefits of various heating options for each zone. - Recommendations for supply options for each zone. 	
<p>Mandatory connection / prevention of disconnection to district heating (DH) systems</p>	-	<ul style="list-style-type: none"> - Develop secondary legislation and provide policy guidance for municipalities on effective heat planning - Consider the introduction of priority zoning and designation of respective geographical zones for DH and alternative options (e.g. natural gas) based on an in-depth assessment of heat load densities. This might be even combined with the legal enforcement of <u>mandatory</u> and separate DH and natural gas zones. 	<p>In their <i>Local Authority Acts (Gemeindeordnung)</i> the German federal states (<i>Länder</i>) authorize municipalities to impose and enforce mandatory use of and connection to DH systems by adoption of a corresponding municipal bye-law. As a legal pre-requisite, such municipal regulations have normally to be based on an (urgent) “public need”. Traditionally, this included environmental considerations (e.g. prevention of air pollution).</p> <p>The Local Authority Act of the federal state of <i>Schleswig-Holstein</i> explicitly authorizes municipalities to justify the decision to impose mandatory connection to DH systems on <i>precautionary environmental rationales</i>.</p> <p>The decision of several municipalities (e.g. <i>Ratekau</i>) to enforce mandatory connection of new developments to biomass based DH schemes (e.g. wood residues) has been identified as one of several key success factors for project implementation under a regional biomass support scheme implemented in the federal state of <i>Schleswig-Holstein</i>.</p>	<p>National government</p> <p>Municipal government</p>
<p>Spatial planning</p>	- In KO we can observe an enormous construction boom. A key area to promote energy efficiency is new buildings and developments including public	- Make sure that major developments are designed from the very beginning to achieve	<p>The EU Directive on Energy Performance of Buildings requires that for <i>new buildings</i> >1,000 m², the technical,</p>	<p>Municipal government</p>

	<p>buildings.</p> <ul style="list-style-type: none"> - Spatial planning enables local authorities to pre-define quality criteria for new developments and to develop sustainable and energy efficient settlement structures. New settlements, development areas and regeneration sites offer unique opportunities to create sustainable municipalities from the very start by integrating sustainable energy provisions into spatial planning. 	<p>low energy demand.</p> <ul style="list-style-type: none"> - Integrate energy efficiency provisions into spatial planning procedures. Avoid urban sprawl and promote settlement areas with high heat load densities, develop an in-depth assessment of using industrial waste heat or cogeneration for DH purposes, and promote priority zoning (see above) cf. also REGENERGY policy guidelines (http://www.regenergy.org) 	<p>environmental and economic feasibility of alternative supply options based on RES, CHP, district or block heating or cooling (if available), heat pumps has to be considered and taken into account before construction starts.</p> <p>Reference to REGENERGY policy guidelines</p> <ul style="list-style-type: none"> - Avoid urban sprawl and favour compact city development (which facilitates the use of DHC schemes) - Require or promote the orientation and siting of new buildings enabling the use of passive and active solar energy - Require detailed energy assessments for all new developments including feasibility analyses for DH and CHP schemes based on consistent full cost accounting and also considering potential socio-economic benefits - Give preference to DH supplied with any combination of locally available waste heat (e.g. from CHP, industrial/municipal waste) - Prescribe minimum energy performance standards for new buildings - Prescribe the use of RES (e.g. through minimum <i>renewable heat obligations</i>) - Designate priority zones for sustainable DHC/CHP schemes - Secure effective implementation and enforcement of energy performance standards for buildings - Use <i>urban planning contracts/covenants</i> when selling public property and land 	
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			(cf. REGENERGY 2007 “How to make your community energy intelligent”) (http://www.regenergy.org)	
<p>Promotion of modern combined heat and power (CHP) generation</p>	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - DH has a high market share in KO, particularly in towns and urban settlements. - In its Regional Energy Strategy 2007-2031, the Regional Government favours the construction of six medium scale CHP plants based on municipal waste, peat and coal. <p><u>Weaknesses</u></p> <ul style="list-style-type: none"> - Although there is a high market share of DH, there is so far a low share of heat (and electricity) produced in cogeneration mode. - Small and medium scale cogeneration facilities face complicated rules for construction approval, grid interconnection, equipment certification, or ecological standards. - There is no specific policy in the RF or KO to support the construction of modern, small-scale CHP systems (e.g. based on gas or steam motors etc.) using either fossil fuels or RES. - Remuneration of electricity is subject to negotiations with the incumbent grid operator and there is a lack of a stable and calculable framework for potential investors, like a purchase obligation for electricity fed into the grid combined with minimum feed-in tariffs to be paid for a certain period of time as it is the case in several other FSU countries (e.g. Latvia). - There is a clear lack of economic incentives for the construction of new CHP plants or the conversion of heat-only-boilers into CHP plants (e.g. lack of preferential minimum feed-in tariffs for electricity produced in cogeneration mode). - There is no legally defined obligation for electricity grid operators to purchase electricity from 	<ul style="list-style-type: none"> - Establish a transparent and reliable legal framework to ensure a profitable generation business for independent power producers (e.g. safeguard non-discriminatory grid access, grid connection rules, mandatory purchase obligations, remuneration for energy sales). - Stimulate the development of highly efficient cogeneration facilities by setting minimum technical performance requirements and providing economic incentives (e.g. feed-in tariffs, investment grants, tax incentives). - Increase the level of electricity and heat tariffs in order to stimulate investments in new cogeneration facilities. - Promote the development of distributed and highly efficient cogeneration units which – both from an energy security perspective- and from an environmental perspective - might be more advantageous for KO than the promotion of oversized large scale power units - Provide financial support to the conversion of HOB into to cogeneration units 	<p>Competitiveness of cogeneration (CHP) facilities in <u>Germany</u> faced severe problems after electricity market liberalization. Therefore a new CHP law was adopted in 2002 which introduced new incentives for the continued operation and modernisation of existing CHP units. The law also encouraged investments in new small (<2 MW) and micro CHP units.</p> <p>The law includes an obligation for grid operators to connect qualified CHP facilities, to purchase electricity from cogeneration facilities feeding electricity into the public transmission network and pay a <i>premium (bonus payment)</i> on top of the market price (average base load electricity price of the wholesale electricity market EEX European Energy Exchange. The boni vary between 0.56 and 5.11 €/cents/kWh, depending on plant type and age. The bonus payments were stepwise reduced from 2004, except for new small units and fuel cells. The incentives are financed by a surcharge on all electricity sales.</p> <p>Biomass cogeneration plants are eligible for special feed-in tariffs and <i>boni</i> under the Renewable Energy Sources Act.</p> <p>Other transition and FSU countries like <u>Hungary</u>, <u>Czech Republic</u> or <u>Latvia</u> support small-and medium scale CHP facilities through purchase obligations and preferential feed-in tariffs/bonus payments for qualified CHP (mostly small-scale).</p>	<p>Federal government</p> <p>Regional government</p>

	(modernized or new) CHP plants.			
Promotion of renewable energy sources (RES)	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - Recent amendments to Federal Law FZ-35 “On electric power industry” include provisions for public support to RES. Complementary legislation needs to be developed. - The Regional Energy Strategy 2007-2031 sets ambitious targets to be achieved by 2025 (15% RES share in Total Primary Energy Supply) and 2031 (20%). - The Regional Government provides interest subsidies in order to reduce the interest rates of domestic commercial loans to EU levels. - KO has already experience with the use of wind energy, small hydro and biomass heating based on wood waste. <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - The current electricity tariff level and the artificially low domestic gas prices do not (yet) incentivize the use of RES. - Absence of a reliable and effective policy framework for RES; lack of effective economic incentives and support mechanisms. - The Regional Energy Strategy 2007-2031 does not contain any provisions on how the ambitious RES targets might be achieved. - Lack of information and awareness on the benefits of RES. 	<ul style="list-style-type: none"> - Develop a supportive investment environment for RES in order to attract private investors. - Provide a stable and reliable support framework for RES investments. - Ensure that electricity/heat from RES facilities can be sold at appropriate prices - Remove legal, administrative obstacles inhibiting the use of RES (e.g. permitting, licensing rules). - Set up demonstration projects at public buildings; ensure that the public sector plays an exemplary role by supporting the use of RES in public buildings and budget financed entities with a high visibility effect. - Disseminate existing good practices among municipalities. 	<p>The draft EU Commission proposal for a RES Framework Directive envisages a binding overall RES target of 20% of final energy consumption by 2020 and defines binding and individual national targets. Member States are to set up National Action Plans to achieve their goals.</p> <p><u>Germany</u> has a highly effective fixed price scheme purchase obligation and providing guaranteed minimum feed-in tariffs for RES based electricity.</p> <p><u>Latvia</u> developed a highly effective support scheme based on minimum feed in tariffs for small-scale hydro power plants, wind power plants and other RES facilities.</p> <p>Other countries like <u>Sweden</u> have established a quota based certificate systems. Considering the model of electricity sector liberalization, a quota based system might be the more appropriate model.</p>	Federal government/ Regional government
Promotion of biomass and biogas facilities	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - Reportedly, a law “On the basic principles of bio-energy development in the RF” and a federal programme for the development of bio-energy in the RF up to 2015 are under development. - KO has obtained some experience with biomass district heating to build upon (e.g. <i>Nesterow</i>, 	<ul style="list-style-type: none"> - Develop in-depth assessments of existing biomass potentials (waste wood, wood waste from wood processing and landscape management, dedicated energy crops, etc.) - Check the economic feasibility of biogas production from dedicated energy crops (maize) and manure 	<p>REGENERGY policy recommendation: Steps to develop a Regional Biomass Master Plan</p> <ul style="list-style-type: none"> ❖ Setting up a cross-departmental steering and coordination group (e.g. Task force) ❖ Creation of a participatory multi 	Regional government/ municipalities

	<p><i>Pravdinsk).</i></p> <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - see above 	<ul style="list-style-type: none"> - Promote the exchange of experiences and networking of existing biomass actors in the region. - Set up demonstration projects at public buildings (see above) - Link biomass support policies to regional development and business development policies - Develop minimum sustainability criteria for use of biomass and other local and renewable sources. - Assess the potential and support the utilization of landfill gas from municipal waste to co-generate electricity and heat. 	<p>stakeholder process and decision support</p> <ul style="list-style-type: none"> ❖ Assessment of regional biomass potential and frame conditions ❖ Assessment of actual biomass use ❖ Assessment of market actors and stakeholders ❖ Assessment of appropriate technologies and cost assessments (full cost accounting) ❖ Assessment of appropriate measures to stimulate biomass supply, logistics and use ❖ Elaboration of future development scenarios ❖ Ex ante assessment of potential environmental and socio-economic benefits ❖ Discussion and development of strategic targets with stakeholders ❖ Development of an action plan comprising public support measures and schemes ❖ Implementation ❖ Monitoring, evaluation and re-adjustment <p>(cf. REGENERGY 2007 “How to make your community energy intelligent”) http://www.regenergy.org)</p>	
<p>Demand side obligations for energy suppliers</p>	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Energy supply companies have no or a weak interest in performing end use energy efficiency measures. - Energy supply companies are interested to 	<ul style="list-style-type: none"> - Gradually switch from cost plus regulation of heat tariffs to incentive based regulation (cf. above) - Require or stimulate demand side 	<p>Italy, the UK and France have adopted so called “white certificate systems”. In France, from 2006 all suppliers of electricity, gas or heating oil are required to meet specific targets based on the amount of energy they produce. Suppliers</p>	<p>National/regional government</p>

	<p>increase energy supply</p> <ul style="list-style-type: none"> - Isolated supply and demand side optimisation 	<p>management programmes implemented by energy supply companies.</p>	<p>could achieve savings either through reducing their own energy consumption or by helping their customers acquire more efficient heating and lighting equipment. In turn, they will receive tradable energy saving certificates ("white certificates") that will have to be handed over at the end of the period to check their targets have been met.</p>	
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9. Policy and regulatory framework related to energy end-use efficiency (WP 2)

	Findings of policy monitoring	Recommended policy measures for KO	Good practice experience from EU countries and other regions	Responsibility
Building energy codes and standards	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - Increasingly stringent mandatory energy performance requirements for new buildings and refurbishments comparable to EU standards. - The building energy codes offer two compliance options. <ul style="list-style-type: none"> a) a <i>prescriptive</i> type of regulation prescribing separate minimum energy efficiency requirements (e.g. R-values) for different building components and b) a <i>performance based</i> approach where the energy performance requirements are based on the building's overall specific energy consumption. This holistic approach accounts for heating controls and heat supply system efficiency and gives planners more flexibility in designing buildings and finding cost-optimal solutions. - Energy passport system (see below) <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - No mandatory thermographic testing of new and buildings - No mandatory energy passports for new buildings (see below). - Federal building energy codes and standards to become voluntary after 2010. 	<ul style="list-style-type: none"> - Strengthen enforcement mechanisms to ensure that building regulations for new buildings and major refurbishments are actually met. To be effective, building energy codes must be mandatory, regularly updated and consequently enforced. - Effectuate the existing system of energy passports for new buildings; make the thermographic testing of new and buildings mandatory. 	<p>The EU Directive on Energy Performance of Buildings requires the establishment of a general framework for a common methodology for calculating the integrated energy performance of buildings. It requires the Member States to apply minimum requirements on the energy performance of <i>new buildings</i>.</p> <p>It also requires the application of minimum energy performance requirements for <i>large existing buildings</i> under major renovation (with a total useful floor area over 1,000 m²).</p> <p><u>Situation in Germany:</u> The German Energy Saving Ordinance (<i>Energiesparverordnung ENEC</i>) which was introduced in 2002, amended in 2004 and 2007 defines the annual primary energy demand of the building as the primary energy performance indicator for <i>new buildings</i>. Hence, it allows for proper reflection of efficiency advantages in energy conversion and supply.</p> <p>Regarding <i>building refurbishments</i>, the owner has a choice of to either meet the respective u-values of the building element in question, or to prove that the building as a whole does not exceed 140% of the overall requirements on primary energy use for a new building. In Germany, there is no 1,000m² threshold as envisaged by</p>	

			the directive. (More information on the EU Directive and its implementation in the Member States can be found at cf. http://www.buildingsplatform.org).	
Heat metering	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - Moderate progress of building heat meter installations in budget financed entities (partly financed through the Regional Energy Saving Programme 2002-2005). <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Although compulsory metering is envisaged by national and regional energy saving laws, compliance is generally rather low. - Low installation rates of building level heat meters in residential buildings - On average, the applied consumption norms are 20%-30% too high. 	<ul style="list-style-type: none"> - Accelerate and continue to support the installation of heat and hot water meters in public buildings, budget financed entities and multi-family buildings. - Mandate and enforce the installation of metering and control devices. - Set up incentive programmes, funds, and information campaigns 	In <u>Germany</u> the Heat Cost Allocation Ordinance (<i>Heizkostenverordnung</i>) stipulates mandatory heat and hot water metering. This ordinance also envisages consumption based billing of heat and hot water use.	Regional government Municipalities
Consumption based billing	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - Allows to reduce final consumption by 20% to 30% on average compared to consumption norms (provided the heat supply was sufficient before) - Instead of using average consumption norms some municipalities apply differentiated consumption norms for individual building types reflecting better actual differences in the buildings' energy performance <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - building based consumption norms were not applicable in <i>Svetlyi</i> (low social acceptance) 	<ul style="list-style-type: none"> - Heat metering and consumption based billing are pre-requisite for effective energy management. They provide indirect economic incentives to final consumers to save energy through changes in behaviour and implementation of energy efficiency measures. - Accelerate the installation of building level heat meters. Building level heat metering provides incentives to final consumers to reduce energy consumption and should be prioritized. - Support the installation of thermostatic valves and heat controls, particularly in public and residential buildings. - Reconsider existing consumption norms as more data are available on the actual level of heat consumption. - Adopt more accurate and realistic 		Municipalities

		<p>consumption norms for consumers which are not equipped with heat meters.</p> <ul style="list-style-type: none"> - Ensure transition from municipal average consumption norms to type of buildings average norms; carry out targeted information campaigns. - Ensure that responsibility for improving the efficiency of heat supply systems is being shared between consumers and suppliers: It is not fair to expect that households shall pay for low efficiency of heat generation, transport and distribution. 		
<p>Energy monitoring and audits</p>	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - According to the federal energy saving law organizations shall be subject to compulsory energy audits, irrespective of their legal status and ownership, if the annual consumption of energy resources exceeds 6,000 toe or 1,000 tons of motor fuel. - For existing buildings, the new federal building codes and regional codes require selective inspections and reviews to determine compliance with relevant codes or to assess the need for renovations. - The new federal building code does not only apply to new buildings and major refurbishments, but also to existing buildings with provisions for evaluating and monitoring thermal performance and energy parameters for design and operation. The code also sets up a rating system for buildings. - The code prescribes (but does not require) the performance of quality control for the thermal insulation for new buildings by means of thermographic testing. <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Mandatory energy audits apply only to comparatively large consumers (e.g. industrial 	<ul style="list-style-type: none"> - Prescribe energy audits for public buildings and where feasible make profitable investments with short payback periods (< 3 years) mandatory. 		

	enterprises). The development of secondary legislation has been partly insufficient so far.			
Energy certification (residential buildings)	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - The federal building code <i>SniP 23-02-2003</i> and the regional building codes require for new buildings the completion of an “Energy Passport”, a verification document or protocol intended to verify compliance of calculated energy performance values with code-stipulated values. - Designs whose calculated energy consumption exceeds code stipulated levels are not granted permits. Energy passports also give potential buyers and residents information on the building’s energy performance. - The federal and regional building energy codes introduced a building rating system reflecting the degree of deviation of design or measured normalized values for specific energy consumption from the code stipulated values has been introduced. - Passport shall help tenants to evaluate energy efficiency and allow investors to capitalize value of energy savings. 		<p>The EU Directive on Energy Performance of Buildings (see above) requires that all buildings shall be provided with Energy Performance Certificates when constructed, sold or rent out (incl. recommendations for cost-effective improvements).</p> <p><u>Situation in Germany:</u> Energy performance certificates might either be based on</p> <p>a) calculated demand (based on a comprehensive building performance analysis) or</p> <p>b) metered consumption (providing information on the energy use of the previous 3 years; this option might only be used for homes built after 1978).</p> <p>For new buildings, certificates must be issued on the based on the calculated energy demand as no metered consumption data are available.</p> <p>((More information on the EU Directive and its implementation in the Member States can be found at cf. http://www.buildingsplatform.org).</p>	

10. Management and administration of multi-family buildings (WP 2)

	Findings of policy monitoring	Recommended policy measures for KO	Good practice experience from EU countries and other regions	Responsibility
Homeowners associations	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - The <i>RF Housing Code</i> provides the legal framework for administration and management of housing stock, transfers the responsibility for 	<ul style="list-style-type: none"> - Encourage apartment owners to establish homeowners’ associations - Promote capacity building for housing cooperatives and condominium associations 	In the Baltic countries legal rules state that decisions to implement energy efficient refurbishment are to be made by simple majority. This approach is a precondition	Federal/ Federal/ Federal

	<p>maintenance and repair of housing to the homeowners.</p> <ul style="list-style-type: none"> - Generally, decisions can be taken if more than 50% of the homeowners are present. Several decisions on special issues e.g. reconstruction require a majority of 2/3. - Homeowners have to reach a common decision about the form of administration and management of their building: direct administration by all homeowners, administration by a homeowners' association, administration via a specialized management organisation to be selected by tender - Homeowners' association is a legal entity for management of common property. <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - The Housing Code foresees participation of all owners of flats in a house in homeowners' meetings (residents members of homeowners' association and non-members) what makes the procedure of decision making very complicated. A decision of members of homeowners' association only is not enough. - In one MFB can exist two decision-making bodies. For instance, with regard to applying for state funding with the aim of refurbishment of houses the further legal regulation of relations between the general meeting of homeowners and HOA is needed. This concerns the houses where not each homeowner is the member of HOA. Such buildings constitute in practice the majority of the housing stock. - Membership in the HOA is not obligatory. Homeowners can escape from the HOA. - By the building management high administrative costs are arising. - Low qualification of responsible staff from HOA and housing cooperatives 	<p>Encourage apartment owners to establish homeowners' associations</p> <ul style="list-style-type: none"> - Promote capacity building for housing cooperatives and condominium associations - Strengthen professional competencies of staff members from housing cooperatives and condominium associations - Intensify public work with population on issues of energy saving in the housing - Improvement of legal regulation of circumstances between plenary meeting of homeowners and homeowners' association 	<p>that no obstacles occur with respect to agreement quotas.</p> <p>A similar barrier was recently removed with effect from 1 July 2007 thanks to an amendment to the German condominium ownership law (WEG). The unanimous consensus previously required for modernizations (including energy-saving measures) was reduced to 75% in Germany.</p> <p>A proper approach to refurbishment practice in the new EU countries is that the majority resolution also applies to larger-scale maintenance (which exceed the scope of necessary repairs). A different approach, as the one obliging housing managers to deal with essential maintenance in Germany (without requiring tenant agreement), is in practice only feasible where buildings are in a fundamentally sound state of repair.</p> <p>In the EU countries the information and public awareness programs are in place to raise awareness of population in the issues of efficient use of energy.</p>	<p>government</p> <p>Municipal governments</p>
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	<ul style="list-style-type: none"> - Responsibility for common property as well as efficient use of resources by residents is very low 			
Financing of thermal refurbishments in MFB	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - <i>Federal Law No. 185-FZ "On the Promotional Fund for Reforming the Housing and Utility Sector" (21 July 2007)</i> establishes a fund providing financial support for refurbishment of common property in privatised multi-family buildings and resettlement of residents from demolished buildings - 95% of necessary costs of energy saving modernisation are financed through the Promotional Fund for Reforming the Housing and Utility Sector as well as from local budgets, 5% should be paid by homeowners. - It supports establishment of homeowners' associations. <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - The preparation of the funding application is very complex and requires much efforts and expenses connected with high planning costs (preparation of works specification, construction license construction plan, if applicable, tender documents). - The HOA do not possess additional financial reserves for these purposes. Since the application can be rejected there is a high risk for HOA not to compensate the invested costs . - Problematic is also for homeowners to finance 5% of funds which are not financed through the Promotional Fund for Reforming the Housing and Utility Sector - Though the legislative framework that has been established there are no financial and institutional mechanisms in practise for allocating grants to HOA and cooperatives from local budgets and financial institutions (banks), no functioning mortgage loaning system. 	<ul style="list-style-type: none"> - Remove legal barriers or gaps limiting borrowing by condominium associations - clarification of financing sources in connection with planning and applying for state funds - Strengthen the mortgage loan system and develop special loan security schemes - Develop further financial instruments to ease an access of HOA to financial resources - Support programs should have the aim of implementing the classic package of energy-saving measures, namely: thermal insulation of the building envelope; new windows with thermal insulation glazing; modernization of the central heating system. - To broadly enable refurbishments to get up and running, the type and scale of support must be purposefully designed so that financially weaker condominiums communities can afford the implementation of this package of measures. - If the entire package of classic energy-saving measures is implemented, general refurbishment measures should also be included in the support. Measure in stages or random combinations of general refurbishment measures need not be supported. Support should concentrate on particularly sensible packages of measures, which achieve effects that are clearly in the public interest and would clearly not be achievable without support. - Not only the financially stronger but in principle all condominiums communities that arose after privatization should be able to afford refurbishment measures. 	<p>In old as well as new EU-countries support programs have been set up aiming at energy-saving measures in the housing. In Germany the Federal government has been allocating funds for soft loans to stimulate energy savings in the built environment. Most of the refurbishment measures in the prefabricated housing stock were financed using credits from the KfW Promotional Bank. As the state subsidy bank, KfW has the best possible banking rating and can therefore procure the funds from the capital market for support loans at the most favorable interest terms possible. This leads to the KfW being able to offer refurbishment credits at interest levels around 0.5% less than commercial banks. KfW can obtain specific subsidies from the public household budget to reduce interest on loans for certain purposes (e.g. refurbishment of prefabricated housing in 1990s or for certain packages of energy-saving measures at present) enabling it to offer credits for specially-favored purposes at significantly lower interest (e.g. final borrower interest of 2% for loans for certain energy-saving measures).</p> <p>In Poland, Lithuania and Estonia support is being provided with subsidies between 10% and 30%.</p> <p>The Polish thermo-refurbishment program has had the greatest successes (with regards to scope of energy-saving measures, number of flats refurbished, ratio of subsidies used to heating costs savings attained). The low level of</p>	<p>Federal/ Federal government Municipal governments</p>

		<ul style="list-style-type: none"> - Low-income households require the following supplementary support measures: income-dependent interest subsidies, or income-dependent allowances towards refurbishment apportionments. - Support loans should be handed out from a revolving refurbishment fund which is managed by a state organization (subsidy funds or subsidy bank). - Support loans should be granted with interest and redemption terms that enable each condominiums community to afford implementation of the classic package of energy-saving measures (at investment costs of around € 5.000 per flat) and with a monthly burden of no more than € 25 per flat (for an average-sized flat). This means: <ul style="list-style-type: none"> a) Loan covering up to 100% of investment costs. b) Credit payment term: 20 years. c) Maximum interest of 4% to 5% (at minimum 0.5% less than conventional credit rates on the free market). d) Fixed interest period of 10 years. e) Credit extended in the form of annuity credits with a set constant repayment rate. 	<p>construction costs so far is particularly astonishing (currently approx. €2,000 to €2,800 per flat) with which savings on heating costs of 40% have so far been achieved.</p>	
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11. Energy use in public buildings and properties (WP 2)

	Findings of policy monitoring	Recommended policy measures for KO	Good practice experience from EU countries and other regions	Responsibility
Building energy codes and standards	Cf. above (ch. 6)	Provide incentives/bonuses for public buildings which consume significantly less energy than required by building energy codes.		

<p>Energy audits for public buildings</p>	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - There have been several policy initiatives in the past supporting energy audits in public buildings and properties. In 1998, the Order of the RF Ministry of Fuel and Energy (22.01.1998) “On conducting energy audits and implementing priority energy saving measures in budgetary organizations” was adopted but is not in effect any more. - The federal and regional building codes requires selective inspection and review to determine compliance with relevant codes, or to assess the need for renovation. 	<ul style="list-style-type: none"> - Public buildings and properties should be made subject to systematic energy audits. 	<p>According to the Energy Management Act, in the <u>Czech Republic</u> energy audits are compulsory for state organisation units, regional and municipal organisation units as well as entities entirely or partly financed from the national budget with a pre-defined minimum annual energy consumption.</p>	
<p>Energy certification of public buildings</p>	<p>Cf. chapter 9</p>	<p>Cf. chapter 9</p>	<p>The EU EPBD Directive (2002/91/EC) requires that all buildings shall be provided with Energy Performance Certificates (EPC) when constructed, sold or rent out (incl. recommendations for cost-effective improvements). In public buildings >1,000 m² the EPC shall be publicly displayed. In Germany</p>	<p>Regional government</p>
<p>Energy management for public buildings and estates</p>	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - A voluntary network of municipal energy managers has been set up in KO several years ago with Danish assistance and coordinated by KREEC. <p><u>Weaknesses</u></p> <ul style="list-style-type: none"> - At regional and municipal level there is no systematic collection and processing of energy consumption data of public (i.e. budgetary) organizations. - Lack of an effective regulatory framework for setting up energy managers in public buildings and properties. - Lack of funding and supportive framework for energy management. - Lack of incentives for energy savings in municipalities and budget financed entities as energy bill reductions do not necessarily benefit 	<ul style="list-style-type: none"> - MunEM recommends setting up an effective policy framework supporting public energy management both at regional and municipal level. This might be done in the frame of the planned amendments to the regional energy saving law or by a special public energy management law/regulation. Legislation should envisage mandatory appointment of energy managers in municipalities; it should regulate the organisational setup of regional coordination center, regulate tasks and competences of the energy managers, and formulate energy efficiency targets for budget financed entities. - Require and support the establishment of energy managers in regional and municipal authorities with sufficient technical expertise. Full-time energy managers might be set up in larger municipalities; smaller municipalities 	<p>In <u>Italy</u>, already in 1991 the government launched a law obliging public authorities and private enterprises with energy consumptions above certain thresholds (1,000 toe/year for public sector) to appoint energy managers. The following lessons can be derived from the experiences: It is essential</p> <ol style="list-style-type: none"> to have sanctions in place and being implemented to provide a mechanism that secures that cost effective energy efficiency measures are being taken. To effectively position the energy managers in the administrative hierarchy enabling him/her to exert any influence. To promote effective networking and exchange of experiences of EM from different municipalities. 	<p>Federal government</p> <p>Regional government</p> <p>Municipal governments</p>

	<p>the budget financed entity but the regional or state budget</p> <ul style="list-style-type: none"> - Weak integration within the local administrations; lack of powers and clear responsibilities of the energy managers - Energy managers to perform other tasks as well (additional work load) 	<p>might share energy managers.</p> <ul style="list-style-type: none"> - International experience shows that the mere nomination of an energy manager can result in a purely formal exercise to comply with legislation, with no effective means for the nominee to cover his/her role. Appointing an EM does not necessarily imply that actions are being taken; therefore accompanying measures are required: allow budget financed entities to benefit from energy savings and incentivize budgeting rules (see below). - Legislation should include an obligation for public entities to implement energy saving activities where these prove technically feasible and economically reasonable (e.g. payback times of 3 years). - It is not sufficient to have an effective policy framework in place. An organizational framework for implementing public energy management both at Oblast and municipal level is likewise necessary (cf. respective WP 1 Report "<i>Organisational structure of municipal energy management</i>"). - Facilitate capacity-building, training and networking of energy managers.. - Develop "energy efficiency contests" between municipalities (benchmarking approach) and reward the contest winners. - Municipalities should be required to develop energy efficiency targets and programmes - Develop purchasing guidelines for energy efficient equipment for public authorities. - Make energy efficiency a standard criterion for public procurement and construction investments. 	<p>In <u>Denmark</u> the Government recently issued a <i>Governmental Circular</i> on improving energy efficiency in public buildings. This circular contains guidance and provisions on the organisation of energy management, public procurement, investments in viable energy improvement projects, energy efficient behaviour and transparency of energy consumption. Comprehensive energy audits and a certification system shall help to identify projects improving the energy performance of public buildings. Related energy efficiency investments with payback periods below 5 years must be implemented. These investments shall be integrated into energy action plans for institutions and municipalities. The organization of municipal energy management shall be based on the appointment of a person at each institution responsible for energy control, a clear definition of his/her responsibilities. The policy initiative also aims to make energy consumption transparent. Ranking and benchmarking provisions, e.g. based on energy savings competition for municipalities, are likewise envisaged.</p> <p>In <u>Germany</u>, many municipalities have municipal energy managers. Regional energy agencies support EM by capacity building activities. Several cities like <i>Frankfurt</i> or <i>Stuttgart</i> have enacted a specific municipal energy decree (<i>Energieerlass</i>) which contains guidance and provisions on the organisation of energy management, public procurement, investments in viable energy improvement projects, energy efficient behaviour and transparency of energy consumption.</p>	
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			Often these energy decrees provide for even more stringent energy performance requirements for municipal buildings than the national requirements.	
Energy consumption limits	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Typically, budgetary organisations have annual energy consumption limits (ceilings) set by super-ordinate municipal or regional authorities. Implementation of energy efficiency measures leading to energy savings in the organization would normally lead to a respective cutting down of the limits for the next period. - Consumption limits are determined based on average consumption during the previous three years. If energy consumption exceeds those limits, the additional costs have to be compensated for by the respective entity from extra-budget financing sources. - The use of energy consumption limits does not necessarily incentivize energy efficiency improvements; in many cases it rather leads to reductions of temperature and comfort levels. 	<ul style="list-style-type: none"> - Refine the existing system of annual energy consumption limits. Generally it should be avoided that public authorities and organizations are going to be sanctioned if they implement energy saving measures. - Adopt the proposed amendments to the regional energy saving law which envisage introducing incentives for energy savings in budget financed organizations including <i>fixed</i> energy consumption limits. - Setting quantitative target indicators like consumption limits may be an effective tool, but requires complementary action like the development of economic incentives and motivational mechanisms to facilitate energy efficiency measures and investments and changes in energy consumption behaviour of the users of public buildings (e.g. staff, pupils). 		
Motivational mechanisms	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Budget financed entities and organisations are not motivated enough to implement energy saving measures. 	<ul style="list-style-type: none"> - Energy savings can be stimulated through procedures which directly involve the users in economic savings. Reward individuals, teams, or organisational units (including the municipal energy managers) with shares in the energy cost savings they achieve and use saved energy costs to improve the working conditions of the maintenance staff. Individuals might be awarded personal benefits like monetary advantages or bonuses. Shared savings systems enable the users of a building to retain part of cost savings achieved by behavioural measures (e.g. switching off lights, more economic use of water). 	<p>In <i>Chabarovsk</i> (RF), 325 municipal organizations are financed from the city's budget. Over 8 per cent of the city's budget is spent for energy provision for these organizations. In the local government launched an energy efficiency programme. In order to encourage managers and staff members of budgetary organization to support EE measures, the city administration adopted a special mechanism, which assumes that funds saved as a result of implementing EE measures have to be distributed according to the following scheme:</p> <ul style="list-style-type: none"> • 50 per cent remains in the city's budget • 50 per cent is allocated to the 	

			<p>organization and shared in the following way: 35 per cent has to be spent on further EE measures and 15 per cent is given as bonuses for organisation staff.</p> <p>In such a way, 124 budget organizations received additional funding of some 9.9 mln. RUR in 2004. In 2005, these funds were spent on implementation of further energy saving measures, such as modernization of boilers, thermal insulation measures etc (www.reeep.org).</p>	
Public budgeting rules	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - The Regional Government of KO has started a process of administrative and budgetary reform introducing new budgeting methods (e.g. performance based budgeting, public procurement procedures etc.). These reforms offer a strategic “window of opportunity“ and might be effectively combined with complementary measures aiming at decentralized resource responsibility and enabling budget financed entities to control energy costs and savings. - There have been made promising attempts at the federal level to reform public budgeting rules in order to stimulate energy saving measures, like the Government Resolution No. 588 from 1998 which entitled budget financed entities to keep at their disposal saved financial resources for the period of energy saving activities payback plus one year. - Some innovative approaches on municipal level: the municipality of <i>Svetlyj</i> ruled that budget funds which have not been used up as a consequence of energy savings have to be used for additional energy saving measures. - Draft amendments to the regional energy saving law envisage introducing incentives for energy saving in public entities like fixed energy 	<ul style="list-style-type: none"> - Allow more flexibility in budgeting and enable public organizations to retain some of their energy savings on energy consumption. The government can allow the savings to be re-shifted to other categories of expenditure. Public organizations could transfer the savings to other energy related expenditures (capital expenditure which would yield further energy savings). - Develop effective motivation mechanisms which allow to accumulate and share achieved savings. - Introduce new forms of performance based budgeting in order to overcome the classical split between running and investment costs. Provide budget funding as block grants without any earmarking for any particular expenditure (such budgeting is legally possible in the RF but is rarely used). - Develop a facilitating regulatory framework like mandatory requirements and targets for energy efficiency in municipalities and budget financed entities. - Effectively disseminate good practices. - Make lifecycle costs instead of mere investment costs basis of procurement 	<p>In <u>Germany</u> and other countries the following measures are applied to stimulate energy efficiency investments in public authorities:</p> <ul style="list-style-type: none"> - Fiscal decentralization/ devolution of budgetary powers and resources from state to municipalities and from municipalities to public entities - Transition from traditional budgeting system with separate investment and operation budgets to global budgeting; introduction of “block” allocations (budgets for operation, maintenance, energy consumption and investments). - Block allocation of funds for O&M, energy consumption for the individual institution (revolving fund principle); the same allocation as now, but amounts are not allocated to the specific items of the budget; shift resources from the energy consumption account (if savings have been achieved) to the maintenance account - Establishment of separate budget lines 	<p>Federal government</p> <p>Regional government</p>

	<p>consumption limits.</p> <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - There is a classical split between expenditures for current/running costs and capital/investment expenditures. - Unused budget funds generally lose the status of “spare” cash and cannot be transferred to the following budget period (energy savings get automatically “expropriated”) - If a budget financed entity saves money, it may lose all financial savings by getting a smaller allocation for the next budget year, depending on the calibration of the subsidy allocation formula; another drawback is that annual energy consumption limits might become stricter. - Lack of incentives for rational energy use both at micro level (budget financed entity) and the macro level (municipality). 	<p>decisions and refurbishments.</p>	<p>for energy saving investments.</p> <ul style="list-style-type: none"> - Municipalities might ensure that all energy savings are reinvested in further sustainable energy measures. - Accumulation of energy savings at a separate account (Public Internal Performance Contracting Scheme/ Internal revolving funds). - Use of <i>Energy Performance Contracting</i> via energy service companies (ESCOs) and <i>Third Party Financing</i>. <p>In a number of pilot regions of <u>the Russian Federation</u> (e.g. <i>Samarskaya Oblast</i>) some forms of “block grants” (normative per capita financing – a term used in Russia) are being introduced as well ; but to a great extent the approach applies only to core expenditures, such as, in the case of schools, textbooks and teachers# salaries, financed from the regional budget with communal expenses remaining uncovered (cf. also pilot project on performance based budgeting in KO) (cf. IFC/The World Bank 2008:88).</p>	
<p>Promotional schemes for refurbishments and modernisation of public buildings</p>		<ul style="list-style-type: none"> - Develop concrete and verifiable energy efficiency targets for public organizations - Public buildings and properties should be a cornerstone in the planned new energy efficiency programme and might be covered by a respective sub-programme. 	<p>Thermo- modernization programme in Poland provides loans and grants to housing associations and public organizations.</p>	<p>Regional government</p>
<p>Financing energy efficiency investments in public</p>	<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - The Federal Government is committed to address the barriers discouraging Public-Private Partnerships (e.g. energy performance contracting through the involvement of energy service 	<ul style="list-style-type: none"> - Commission an in-depth assessment of existing legal framework conditions, barriers and feasibility of energy service companies (ESCOs) in KO providing energy supply contracting and energy performance 	<p><u>Berlin Energy Saving Partnerships</u> The <i>Berlin Energy Agency</i> (BEA) functions as an international energy service company, equal shareholders being the <i>Federal state of Berlin, Vattenfall Europe</i></p>	<p>Regional government</p>

<p>buildings through energy performance contracting via energy service companies (ESCOs)</p> <p>(cf. in more detail MunEM WP 2 Report “Financing instruments”)</p>	<p>companies ESCOs).</p> <ul style="list-style-type: none"> - Partly improving framework conditions for ESCOs and Third Party Financing in Russia (trend towards cost reflecting energy tariffs, removal of subsidies etc.) <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Lack of energy metering as a severe barrier for ESCO development (problem of baseline determination) - Lack of full cost pricing jeopardizes profitability of investing in energy efficiency equipment. - Public procurement rules do not facilitate ESCO type financing schemes and need adjustments. - Budget financed institutions normally cannot enter into financing agreements, multi-year contracts or contracts that pay for the investment through future savings and hence cannot conclude agreements or contracts with ESCOs. - Procurement legislation does not allow public organization to fund investments by sharing future savings on operating costs, nor does it consider lifecycle cost concepts. - Lack of well-qualified staff in the budget financed institutions. 	<p>contracting.</p> <ul style="list-style-type: none"> - Change public procurement legislation to allow for multi year contracts. - Check the feasibility of establishing a publicly owned ESCO (e.g. ownership by municipalities or the Regional Government) - Enforce energy efficiency provisions in public equipment procurement 	<p><i>Berlin, GASAG Berliner Gaswerke, and the state owned Promotional Bank Kreditanstalt für Wiederaufbau (KfW). Through BEA Energy Saving Partnerships (ESP) were successfully developed since 1995 to manage and optimize energy supply and use of pools of public buildings (e.g. schools, swim halls, prisons etc.). The ESPs are based on private third party financing provided through ESCOs in order to modernise the energy systems and services for the public buildings with the aim to reduce costs. The ESCOs take on all initial investment costs for modernising systems and services; in exchange they take 70-90 % of accrued savings realised over a contract period of 10-15 years. Guaranteed savings vary between 15 and 33%. In 2007, ESCOs manage 20 building pools comprising a total of 1,300 (out of 4,000) public buildings. So far, investments of roughly 50 mln. € have been made by ESCOs. Annual cost savings amount to 11 mln.€, annual budget savings to 2.9 mln. € and annual CO₂ savings 60,000 tons.</i></p> <p><u>Latvia:</u> Renovation of street lighting through ESCO in the frame of the ELI project.</p> <p>In <u>Ukraine</u>, the EBRD and the EU supported the establishment of UkrESCO, an energy service company mainly performing and financing energy saving investments in the industrial sector (cf. www.ukresco.com).</p> <p>Another ESCO active in the <u>Ukraine</u> is <i>ESCO Rivne</i> which design, realises and finances investments in municipal buildings, the DH network or other energy</p>
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			<p>consuming local facilities through energy performance contracts (EPC) or other applicable contracts (www.esco-rivne.com). The company has been established in the framework of the UNDP / GEF project "Climate Change Mitigation in Ukraine through Energy Efficiency in Municipal District Heating" realization in Rivne". The shareholders of ESCO-Rivne are the DH company „KomunEnergiya" (http://www.komunenergiya.com.ua) and the municipal enterprise CE "Misksvitlo". These communal enterprises formed the Statutory Fund of ESCO-Rivne.</p> <p>Energy performance contracting in <u>Sofia/Bulgaria</u> by Company for Energy Saving CES TEMOS (co-owned by <i>Stadtwerke Leipzig</i>; cf. REGENERGY project) (http://www.regenergy.org)</p>	
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12. References

Bashmakov, Igor (2006): Urban Heating in Russia.

Danilov/Kostjucenko (2006): Practical Handbook for selection and development of energy efficiency projects (in Russian).

Delegation of the European Commission/COWI Consortium 2007a: Energy Efficiency at Regional Level in Arkhangelsk, Astrakhan and Kaliningrad Regions. Kaliningrad Fuel and Energy Balance. EuropeAid/120746/C/SV/RU. Final report. February 2007. <http://www.cowiprojects.com/RegionalEnergyEfficiencyRussia/ProjectOutputs.html>.

Delegation of the European Commission/COWI Consortium 2007b: Energy Efficiency at Regional Level in Arkhangelsk, Astrakhan and Kaliningrad Regions. Demonstration of Energy Demand Forecast in Kaliningrad Region. EuropeAid/120746/C/SV/RU. Final report. September 2007. <http://www.cowiprojects.com/RegionalEnergyEfficiencyRussia/ProjectOutputs.html>.

Delegation of the European Commission/COWI Consortium 2007c: Energy Efficiency at Regional Level in Arkhangelsk, Astrakhan and Kaliningrad Regions. Modernisation options for the DH-system in Svetliy municipality. EuropeAid/120746/C/SV/RU. Final report. November 2007. <http://www.cowiprojects.com/RegionalEnergyEfficiencyRussia/ProjectOutputs.htm>

Fankhauser, Samuel, Tepic, Sladjana (2005): Can poor consumers pay for energy and water? An affordability analysis for transition countries. EBRD Working Paper. (<http://www.ebrd.com/pubs/econo/wp0092.pdf>)

IFC/World Bank (2008): Energy efficiency in Russia: Untapped reserves. 2008 (<http://www.ifc.org/ifcext/rsefp.nsf/Content/Survey>)

KREEC (2007): Overview of legal acts regulating the housing and municipal utility sector in Kaliningrad Oblast (internal survey prepared for MunEM)

Matrosov, Yuriy A. et al. (2008): Increasing thermal performance and energy efficiency of buildings in Russia: problems and solutions. American Society of Heating, Refrigerating and Air-Conditioning Engineers (<http://www.cenef.ru/file/St-267e.pdf>)

Matrosov, Yuriy A. et al. (2006): Forty-percent savings and beyond: recent advances in code implementation and development of super-efficient buildings in Russia and its neighbours. Paper presented to the 2006 ACEEE Summer Study on Energy Efficiency in Buildings.

RAO EES (2008): Information Bulletin Restructuring of RAO “UES of Russia” in 2007.

USAID et al. (2007a): Regional Urban Heating Policy Assessment. July 2007.

USAID et al. (2007b): Addressing affordability of utility services in urban housing: energy efficiency solutions.

13. Selected acronyms

BEA	Berlin Energy Agency
bcm	billion cubic meters
CHP	Combined heat and power
CIS	Commonwealth of Independent States
DH	District heating
EPC	Energy performance certificate
ESCO	Energy Service Company
EU EPBD	EU Energy Performance of Buildings Directive
FSU	Former Soviet Union
FTS	Federal Tariff Service
HOB	Heat only boiler
IPS/UPS	Interconnected Power Systems/Unified Power Systems
JSC	Joint Stock Company
KO	Kaliningrad Oblast

MW	Megawatt
NPP	Nuclear power plant
O&M	Operations and maintenance
PPP	Public Private Partnership
SPRPT	Service for Public Regulation of Prices and Tariffs
RES	Renewable energy sources
RF	Russian Federation
RPI	Retail Price Index
SNiP	<i>Stroitel'nye normy i pravila</i> (Construction norms and specifications)
TGC	Territorial Generation Company
toe	tons of oil equivalent
UCTE	Union for the Coordination of Transmission of Electricity
USAID	United States Agency for International Development
WP	Work Package