Kosovo Civil Society Consortium for Sustainable Development

(KOSID)

Efficiency for Development: Economics of Energy Efficiency in Kosovo

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Study goal and structure

As a country in transition, Kosovo is facing a growing demand for energy sources and this is partially a result of low efficiency level, enormous rate of energy loss and stealing, and undesired position vis-a-vis ecological transition. Now, when we have targeted European Union (EU) integration, Kosovo is mainly passive being fully convinced that international partners are drafting development plans, and all that remains to be done is to agree with, finance and implement those plans or projects. As such, the Kosovo Government has significantly stagnated with fulfilment of criteria set by the EU, and with recent developments by creating a monopoly in energy distribution, the Government has created an undesirable and very chaotic situation that directly threatens welfare of every citizen, especially those who are already influenced by extreme poverty.

Privatization or more roughly put monopolization of the energy distributor and market liberalization that is a requirement of the Energy Community Treaty will create a situation in which Kosovo citizens will have to pay the multiple of the energy bill they pay today. Therefore, the energy cost increase is inevitable, it just cannot be predicted to when and how much it will be. On the other hand, considering that markets in countries in transition, as is the case with Kosovo, are always inefficient, energy cost remains a mystery and it contains the risk that cost growth rate may easily exceed citizens' expectations and thus drive the country towards political and economic destabilization simultaneously.

Growing demand for energy by households when economic activity is relatively stagnant must be viewed as a threatening fact and a clear indicator that current efficiency measures are not functioning in Kosovo. Besides the growing demand, a study conducted by the Kosovar Civil Society Consortium on Sustainable Development (KOSID)[1] has found the significant presence of seasonality, where electrical energy is spent twice as much during the winter compared to summer. This conclusion is in line with results of a survey conducted by the American University in Kosovo and Rochester Institute of Technology (AUK-RIT)[2] which highlights the bad situation of residence areas in regard to thermic insulation. If we correlate these two indicators (seasonality and weak thermic insulation) with the fact that 55% of electrical energy in Kosovo is used by households, then there is a need to address this problem in a different manner.

Given the circumstances, the main goal of the study is to motivate intervention of public policy to review opportunities of energy optimization in order that by reducing energy bills to provide affordability for households primarily.**

This study is divided into four sections. The first section presents the current situation of energy efficiency in Kosovo, government efforts and unfolds detailed measures that are required to reach the level of thermic insulation to the extent where the investments pays off with efficiency. Then, the second section elaborates economics of efficiency, which analyses in details potential benefits that may be reflected on gross domestic product (GDP), unemployment rate and living standards. At the end, a plan has been drafted which focuses on raising awareness and mitigations by the government as strategic points, in addition to punishing measures that need to be applied to prevent failure.

[1] Gashi K., Pozhegu D., Puka K. (2013), Electricity Score, KOSID.
[2] Bowen B. H., Myers J. A., Myderizi A., Hasaj B., Halili B., (2013). Kosovo Household Energy Consumption: Facts and Figures, AUK-RIT.

1. Understanding the lack of energy efficiency measures in Kosovo

1.1. Facts and figures on Kosovo

With efficiency we imply the optimal measure of energy used to complete a certain service, while efficiency improvement means getting more from what we use. Therefore, we can say that we have been more efficient if during the winter season we managed to heat residence premises the same as the previous year but we have spent less, with all other factors remaining unchanged – ceteris paribus (price, weather conditions, etc.).

In a poor country as is the case with Kosovo, everyone is undoubtedly interested to pay less for more. In 2011, a family in Kosovo spent on average 1,210 Euros for electrical energy bills, which amounts to 100 Euros per month.[3] On the other hand, the data of the Agency of Statistics of Kosovo (ASK) for 2012 show that 30 percent of household expenses are spent on accommodation, a category in which electrical energy costs are included and covered.[4] Therefore inefficient use or increase of electrical energy price will further impoverish Kosovo citizens.

According to World Bank Statistics for 2011, 29.7 percent of Kosovo citizens live below national threshold of poverty, while 10.2 percent live in extreme poverty.[5] When considering the poverty threshold and extreme poverty at 1.72 and 1.20 Euros per day respectively, we can state that the situation is miserable, and that the Government must pay additional and close attention when drafting policies. What we must not forget is that the largest contributor to poverty is the high unemployment rate, which in 2009 was at 45.4 percent, while the latest data from ASK for 2012, which are strongly contested since they are not in line with economic development trends, show that the unemployment rate is at 30.9 percent, from whom 55.3 percent include youth between 15-24 years old.[6] On the other hand, the situation is not better among those employed either, since the highest frequency of net monthly salary is in the range of 301-400 Euros (or about 30 percent of those surveyed), while not even 10% of the sample are in the 401+ range.[7] This implies that more than 50% of those surveyed are positioned in the range between 1-300 euro of net monthly salary, and based on the results of the AUK-RIT survey, about 42 percent of urban families have one person employed, while 27 percent have two. The situation is expected to be worse in rural areas.

The data cited above shows that average income for the vast majority of Kosovo's population remain insufficient to cover monthly expenses, which amongst else includes monthly electrical energy bills, amounting up to 100 Euros per month. Thereupon, it is of paramount importance to reduce/manage monthly electrical energy bills in the best possible way and one of the most efficient methods to achieve this remains increasing energy efficiency, which should also be a primary goal of the Kosovo Government.

[3] Gashi K., Pozhegu D., Puka K. (2013), Electricity Score, KOSID.
[4] Results of Household Budget Survey 2012, (2013), Kosovo Agency of Statistics.
[5] Consumption poverty in the Republic of Kosovo in 2011, (2013), World Bank and Kosovo Agency of Statistics.
[6] Results of the Kosovo 2012 Labour Force Survey, (2013), Kosovo Agency of Statistics.
[7] Ibid.

1.2. Inefficient energy consumption in Kosovo

Improvement of energy efficiency is an objective Kosovo shares with numerous, more developed countries, and not an easy one to be achieved. Even though national reserves of lignite are calculated to be "endless", still the Government must pay attention to smarter usage of energy in order to maintain stable and safe supply and that the burden does not fall directly on the citizens shoulders. To understand non-optimization or energy inefficiency in Kosovo, we will approach a very simple analysis.

First, this study targets only households because they are the ones that due to lack of awareness or irrational habits harm their own living standard, excluding businesses since they have to rationalize the operation of their inputs in order to maximize their profit. Therefore, it is a smart decision for the Government to turn attention to households to a large extent.

Improving efficiency, which means reducing the demand for electrical energy, is not an easy objective to achieve. On the contrary, Kosovo is faced with an increasing demand for electrical energy. Only during the second quarter of 2013 (Q2 2013) Kosovo used 857,7GW/h electrical energy or 3,3% more compared to the same period if the previous year (Q2 2012), based on data from ASK.[8] Based on the same source, if energy distribution is categorized in five final consumer classes, we see that households are the largest consumers of electrical energy with 56.4 percent or 483.5 GW/h only during the second quarter of 2013 (Q2 2013). The figure below shows that from Q1 2010 to Q2 2013, households are the largest consumers of electrical energy on average.

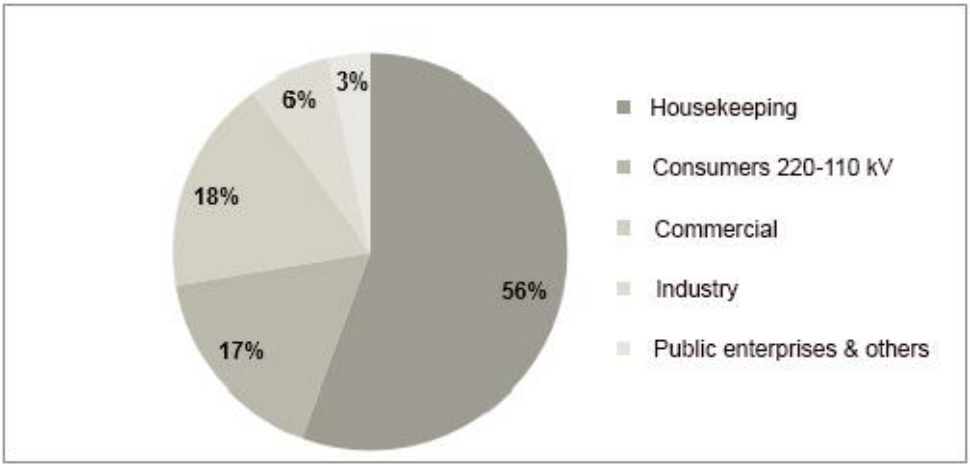

Figure 1. Structure of electrical energy distribution as an average of Q1 2010 – Q2 2013

The figure above clearly shows the significance of households in regards to the efficiency challenge. With a participation of 56 percent, this consumer category leaves behind commercial consumers (18 percent) and privileged consumers (220-110kV) (17 percent), industry (6 percent) and the group of other consumers (3 percent).

While in developed countries the solution for electrical energy efficiency problem is achieved through policies that affect mainly businesses, in Kosovo, a scenario must be sketched out that has household in

[8] Results of Household Budget Survey 2012, (2013), Kosovo Agency of Statistics.

the focus. Therefore, the Government needs to be more vigilant when adopting a plan which might have been very operational in the source country but it may not be appropriate for Kosovo's context.

The figure below that illustrates the variation in energy consumption for the household category compared to the previous quarter and the same quarter of the previous year shows two interesting facts. First, it is clear now that households spent more electrical energy during the winter season or Q1 And Q4. The peak was reached in 2009, while in the following years, some stability is observed with moderate fluctuations, which makes it impossible to reach any conclusion on beginning of reduction of the seasonal effect, which is also not expected to happen. Second, it is important to note whether Kosovo has managed to save electrical energy and this can be observed when comparing same quarters of different years. It may be noted that since 2010, only once energy was saved and that at the 1.44 percent rate (Q1 2013 compared to Q1 2012). The highest consumption was observed in Q1 2011, while the expansive phenomenon tends to continuously be weaker, even being negative recently.

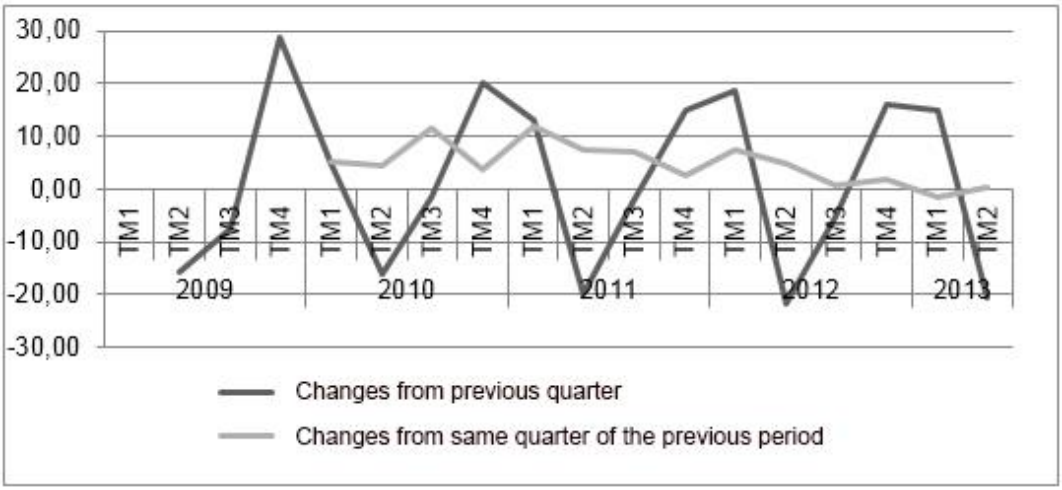

Figure 2. Variation of energy consumption by households in previous quarter and the same quarter of previous year

While such an illustration is very appropriate for analytical purposes, still, attention must be paid during interpretation since the results might be affected by climate factors and other determining factors of electrical energy consumption – in other words attention must be paid to weak winters and strong summers. The following table shows that Kosovo often faces with harsher winters than usual, therefore electrical energy consumption often tends to have pressuring behaviours during January, February and December.

Month	2009		2010		1011		2012	
	Max	Min	Max	Min	Max	Min	Max	Min
January	3.3	-3.8	4.4	2.5	4.3	-4.1	2.3	-5.2
February	5.5	-2.3	7.2	1.1	5.3	-4.2	0.0	-7.9
March	10.1	0.6	11.8	1.3	11.1	1.0	13.6	1.1
April	18.8	6.4	20.1	6.1	17.1	5.0	16.8	4.9
May	23.5	9.7	21.4	9.8	20.8	9.0	20.7	9.4
June	24.3	12.7	25.3	12.9	25.4	12.8	28.5	13.7
July	28.2	14.3	28.0	15.1	28.5	14.5	31.7	16.6
August	28.6	14.8	30.4	15.0	30.4	14.0	31.8	15.0
September	24.1	11.2	23.4	10.0	28.1	12.9	27.6	12.1
October	16.5	6.1	14.7	5.5	16.5	3.6	21.6	7.5
November	13.6	2.4	15.8	5.1	10.5	-2.7	14.1	4.7
December	7.8	0.7	6.7	-1.5	5.8	-1.7	3.0	-3.0

Table.1. Air temperatures in Prishtina, 2009 – 2012 . °C
Source: Hidro-meteorological Institute of Kosovo

If we correlate minimum and maximum temperatures with electrical energy consumption, we can clearly see why electrical energy consumption during Q1 2011 for household category was 12 percent higher compared to Q1 2010. The same logic applies to Q1 2012, but the increase rate is lower.

Furthermore, based on ASK data, we can take notice of continued increase of demand for electrical energy.

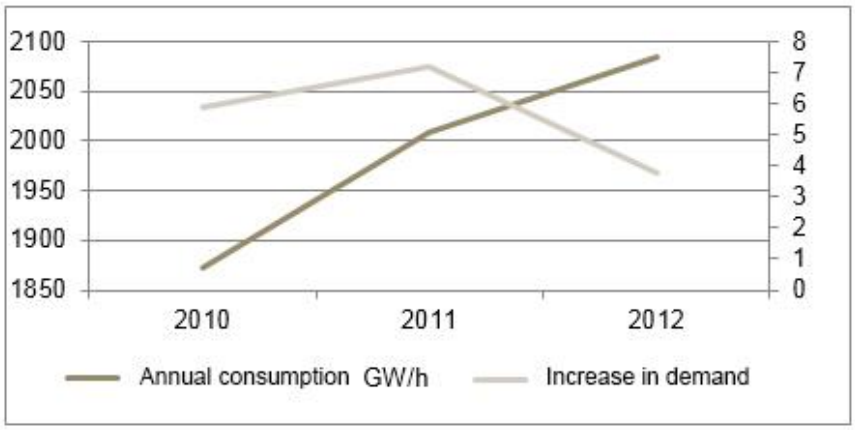

Figure 3. Electrical energy consumption for households during years and variation rate

The graph shows the growing tendency of demand for electrical energy by households in Kosovo, while the growth rate during 2012 is lower compared to the previous year. In 2012, the growth rate was recorded at 3.79 percent, which is below the average at 5.63 percent (2010-2012). The graph makes it clear also that electrical energy consumption in 2011, which increased for 7.19 percent, may be an effect of low air temperatures, thus emphasizing again the effect of the harsh winter on energy consumption.

This effect appears mainly as a result of weak thermic insulation of residential areas, which is present in Kosovo. According to the AUK-RIT survey, it was found that thermic insulation of residential

buildings is in a miserable condition.[9] This is because 63.7 percent of households are considered not to have insulated roofs, 52.9 percent lack double-glass windows while not less than 69.5 percent lack insulated walls. The same source shows an average of 85 percent of urban homes using wood for heating, while only 9 percent use electrical energy. However, this statistic needs to be interpreted with added caution since it may present information that destimulates efforts and relevance of efficiency and as such it should not be used as an argument for drawing the conclusion that households to a large extent use wood for heating purposes.

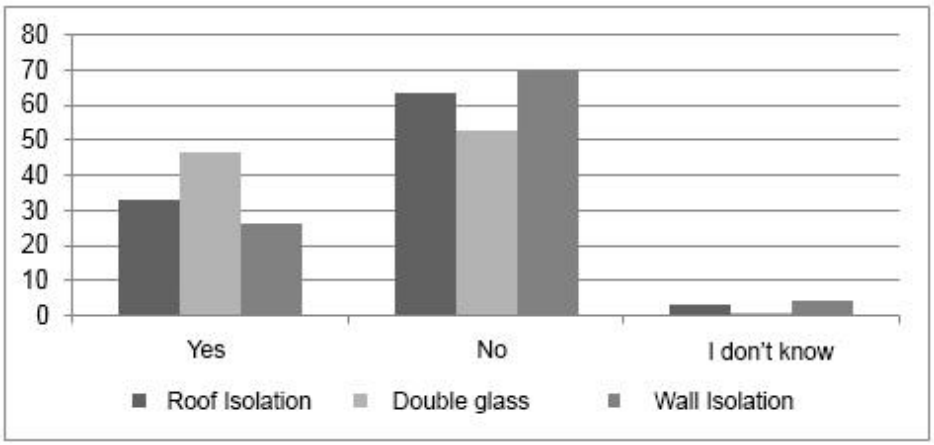

Figure 4. Survey results on thermic insulation of residential buildings

According to ASK data about 71 percent of residential buildings of households possess three (30 percent), four (26 percent) and five (15 percent) rooms, while only 3 percent have one room, despite the fact that 92 percent of these households do not have an installation of central heating.[10] Considering that these houses do not have central heating installation and the high cost of heating every room with burning wood, then a large part of residential areas most likely use other methods of heating. Statistical data directly point to use of electrical energy, since the energy consumption during winter season is multiple times higher than during the summer season.

To make the analysis more convincing, from combining the percentages of houses that have central heating installation (8 percent) and a daily variation of electrical energy that reaches up to 200 MW, we can reasonably conclude that electrical energy is used as a source of heating, adding with relatively high certainty that the pressure on energy use increases during the evening hours. This fact is further substantiated when it is believed that about 22 percent of electrical energy that is injected into the network is used for heating purposes.[11]

As a result, we can freely conclude that electrical energy is used for heating in an inefficient way by households, since the residential area do not have central heating installation, nor they are well-insulated.

[9] Bowen B. H., Myers J. A., Myderizi A., Hasaj B., Halili B., (2013). Kosovo Household Energy Consumption: Facts and Figures, AUK-RIT.
[10] Results of Household Budget Survey 2012, (2013), Agjencia e Statistikave të Kosovës.
[11] Gashi K., Pozhegu D., Puka K. (2013), Electricity Score, KOSID.

1.3. Increasing efficiency, what does it take?

Energy efficiency of a household shows how expensive it is to heat it up, while application of improvement measures will assist in reducing the cost, which absolutely affects welfare of families. For a low-income family, financial saving generated through the installation of measures of energy efficiency means that they can keep their houses warmer and more comfortable and cutting expenses on the other hand. Reminding the salary levels in Kosovo, a saving in 20 Euros per month comprises 7 percent of net salary of 300 Euros, which is a very encouraging saving/salary ration.

It is considered that improvement of thermic performance is one of the most effective ways to reduce bills on one hand and reduce carbon dioxide emissions on the other.[12] Actually, Energy Saving Trust in England justifies roof insulation, highlighting that the investment saves about 190 GBP a year.[13] If 190 GBP are tried to be saved in a country from the average weekly salary during August 2013 was estimated at 484 GBP, then saving 10 or 20 Euros per month for Kosovo citizens must be estimated as a considerable amount since the most frequent monthly salary range is at 300-400 Euros.[14] However, improvement of thermic performance must be preceded with the analysis of difficulties in heating households in Kosovo and of what it takes to turn them into saving households.

The figure below shows an elaborated visualization of elements that affect loss of heat in a house that is totally non-insulated, implying that about 59 percent of thermic heating is lost only from non-insulation of walls and roof. In contrast, doors, windows and floor insulation as well as other air leaks comprise 41 percent of losses.

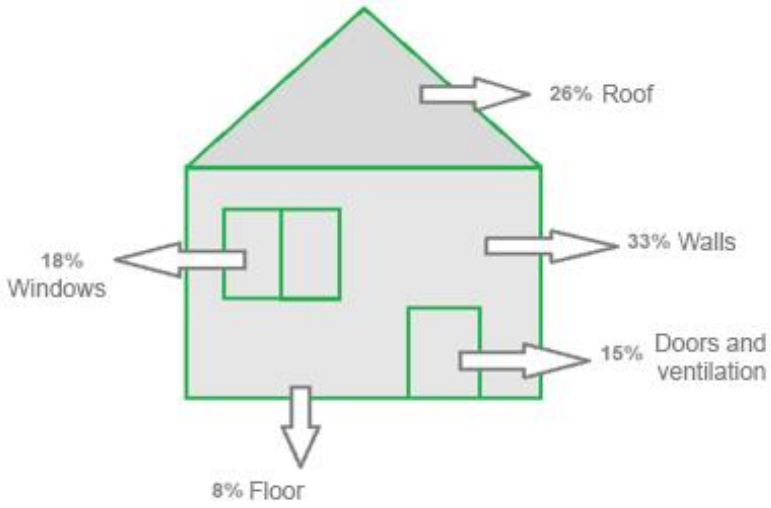

Figure.5. Factors that affect thermic insulation of a house expressed in percentage

Bringing to attention the fact that roughly 63.7 percent of houses in Kosovo are not insulated, 52.9 percent lack double-glass windows and not less that 69.5 percent have non-insulated walls, we can

[12] Clark, D., Chadwick, M., (2011), The Rough Guide to Community Energy, Rough Guides LTD.
[13] Energy Saving Trust of United Kingdom, (2013), http://www.energysavingtrust.org.uk
[14] Office for National Statistics; http://www.ons.gov.uk

assess that there is a lot of room to increase electrical energy efficiency in the country, considering this as a first step towards awareness-raising and motivation of citizens so that they invest in insulation of their houses. Insulation means installation of double-glass windows and insulation of walls and roofs. Thus, the path towards electrical energy efficiency is foreseen as an intervention on thermic performance of households, and this in turn will affect two issues of national relevance, including: optimization of electrical energy use and improvement of citizens' welfare.

2. Benefits of energy efficiency

Energy efficiency must be seen as one of the central pillars of government efforts not only to fulfil the fundamental goal for de-carbonization of Kosovo by reducing the demand for energy, but also for the fact that this investment is tightly related to social and economic development trends.

Guaranteed and possible benefits of energy efficiency suggest a very long list, or put otherwise, a vector with high magnitude of benefits. Since they are considered more vital for our country, this study focuses on three indicators, including: economic growth, unemployment and living standard.

2.1. Energy efficiency as an investment in economic growth

Installation of measures of energy efficiency requires an investment that has potential to stimulate economic growth, while in the current climate, economic growth is the biggest challenge of many governments, including Kosovo.

Since in the first part of this study, we stated that the weak insulation of households makes energy use inefficient, in the following section we will specifically elaborate on the investment effect of insulation on GDP fluctuation.

As can be seen from Figure 5, investment in windows and doors as well as in insulation of walls, floors and roofs are required in order to improve thermic capacity of a household. Since the action for increasing efficiency is related to the growth of demand of constructing products in the domestic market, it must be understood that the potential for economic growth will most likely be exploited. But, it must also be stated that the growth of demand for goods and services is not always and automatically related to economic growth, and this may happen if governing policies do not favour domestic producers and do not create preconditions for development of free competition in the domestic market.

While it is reasonable to construct optimistic expectations in relation to energy efficiency and economic growth, we cannot discuss the sustainability of growth and its size in the long run since any calculation that to a large extent is affected by rationalization of consumer behaviour becomes very complex, especially when the consumer is the family and not a business as is the case here.

Besides economic growth, if a high level of energy efficiency is achieved, another desirable effect may also be reflected on net trade balance of energy. According to ASK statistics, since 2002 up to now, our country continues to have a deep deficit balance. Since with efficiency increase we mean saving the used energy, Kosovo may easily perform better by reducing imports and increasing exports in turn.

2.2. Job-generation as a socio-economic benefit

At a time of high and stable unemployment, generation of new jobs is undoubtedly a hot topic of discussion. In most of the cases, investments bring about the need for more human capital. While in more developed countries as is the case with the United States of America, the measurement of new jobs is done by looking at the number of jobs generated as a result of an investment in the amount of 1 million USD in a specific industry, in Kosovo and in other transition countries such a measurement is impossible to calculate since the job market itself is degenerated.

Since thermic insulation of households is identified as a key measure to address the inefficiency issue, it is expected that the construction sector will be the largest direct beneficiary. Therefore it is expected that providers of goods and services that are related to thermic insulation process will be more active, and this implies the added need for household welders, door and window makers and producers of other necessary products.

Besides direct benefits, it is possible to generate new jobs indirectly since energy saving increases available income and it will trigger demand for other products and in this case we may expect generation of new jobs. Although the number of indirect jobs may be several times smaller, these jobs can still be considered as more stable, since the insulation process is not a permanent one. On the other hand, it is easy to talk about net effect on unemployment since Kosovo's trade deficit balance implies that energy sector will not reduce its production activity as a result of efficiency increase and that loss of jobs in this sector will only happen if any innovative project is supported simultaneously with a thermic insulation project.

If we analyse employment according to economic activity, it turns out that during 2012 Kosovo had 29 thousand individuals or about 9.5 percent of labour force that represented construction sector. From them, only one percent were women, which means that men are the largest direct beneficiaries. Besides, thermic insulation of households must be considered as an activity that does not require a high level of expertise or professional training. According to ASK data, 1.84 percent of unemployed in Kosovo are illiterate, 30.06 have primary education, and 57.55 have secondary education.[15] Therefore it is expected that implementation of energy efficiency measures will not face any lack of required labour force.

2.3. Effects on living standard

Installation of measures of energy efficiency is primarily related to the level of available revenues, revenues that may be used to fulfil consumer needs with other products and services despite the monthly energy bill. As in the case of intervention with thermic insulation, here too we deal with the increase in demand for goods and services, therefore economy tends to benefit since businesses that are faced with the increasing demand may reduce operational costs and increase productivity as a result.

To achieve real results in the living standard, irrespective of how insignificant they might seem, policymakers must defeat at the same time the rebound effect, which is often known to destroy the entire effort.

Rebound effect[16] occurs when after the implementation of efficiency measures the full potential of energy conservation is not achieved and practically there are two phenomena that explain this. First, for low-income families that are faced with lower temperatures than normal, thermic insulation means that these families will only warm up more with the same energy spent or they will tend to increase expenses after they start to adapt to higher temperatures. And second, saved energy may be used for another electronic equipment, which has become affordable as a result of higher available income.

Besides, appropriate installation of efficiency measures may have an impact on public health since reducing unemployment and increasing available income may affect the quality of life in principle.

[15] Results of the Kosovo 2012 Labour Force Survey, (2013), Kosovo Agency of Statistics.
[16] English: Rebound effect.

Knowing that only 2.5 percent of electrical energy in Kosovo is produced on hydro-power plants, decarbonisation that occurs as a result of lower consumption/production of energy is a benefit that does not have a measured value.[17]

3. Energy efficiency implementation plan

3.1. Empowerment of citizens' awareness

The issue of energy efficiency would not arise if the society as a whole consisted of consumer category of rational optimization, since then, nobody would consciously lose benefits brought about by fair use of energy.

Considering circumstances in which we have found ourselves for many decades now, and finding ourselves in the deep abyss of poverty in these times, it is very easy and largely fair to assume that in general as a society we are "naive" and there is nothing we can be proud of staying in that trend, very far from optimum rationalization, or the best choice. Undoubtedly, such a behaviour is often dictated by financial constraints, and often by bad behaviours and informative asymmetry. Subsequently, it should be understood that any strategy, project or action plan that uses consumers (households) as mediators for implementation, must be started with a campaign that has as a primary goal raising awareness of the citizens, otherwise successful implementation is put at risk, even if the project is developed in the best possible way.

There are three potential forms of decision-making that precedes a failed behaviour in related to investments in energy efficiency.[18] Based on circumstances, most likely forms of decision-making in Kosovo include bounded rationality and heuristic decision-making, since prospect theory is more sophisticated by demanding construction of expectations related to eventual benefits and losses. Bounded rationality does not deny the fact that consumers are rational, but on the contrary it justifies their behaviour by using as a core argument the lack of complete information, and such a lack causes avoiding the appropriate choice. Meanwhile, heuristic decision-making takes place in such a way that the consumers leave open only the options which they have had experiences with in the past, by not paying attention to other solutions, which maybe are more innovative. Therefore, it is recommended that awareness raising of citizens is used as a starting point since non-implementation as a result of failure of behaviour is painful and unreasonable when high amounts of financial resources are at stake (financial cost) that will be used for energy efficiency, in our case, investment in thermic insulation of households.

What must be made clear is that consumers will not reach the perfect point of rationality, even in the case when they are given more complete information. Citizen awareness is reached when the communication format is more reliable, frequent and followed-up with completed actions. Frequent and credible communication will remove information asymmetry and it may serve as a guide before the decision whether we need to invest in thermic insulation of the household or not.

[17] Energy Balance Q3-2013, (2013), Kosovo Agency of Statistics.
[18] English: prospect theory, bounded rationality and heuristic decision making.

In summary, it can be stated that what the government needs to offer is continuing quality education and citizens' information, and this is an issue that requires urgent policy response.

3.2. How can we assist citizens to make their homes more efficient regarding energy use

To motivate others to do something which above all is in the interest of a social group, action must be taken in two directions – first to assist to take advantage of the opportunity and then to punish as needed. These two mechanisms must be applied inseparably, constantly and not on preferential basis if the goal truly is to achieve a certain objective.

So far, each taxpayer in Kosovo was seriously harmed when public funds were used to subsidize the Kosovo's Energy Corporation (KEK). During 2009-2011 alone, the government allocated from the Kosovo budget not less than 146 million Euros, and this allocation of resources was undoubtedly followed with a relatively high opportune cost since all Kosovo citizens, to subsidize KEK, have given up return from other projects which in essence may have been of higher priority for them, such as projects in health and education. Reminding the corruption problem that is increasingly reaching its peak, it may be concluded that mismanagement of these resources, which might have certainly happened, poses additional costs. Notwithstanding, small fluctuations of energy prices must not be excluded from the total cost, which were charged to the final consumer fairly and unfairly. On the other hand, due to lack of a productive plan or better put, due to lack of an objective that is related to energy efficiency, the government has applied excise as a punishing measure for incandescent light bulbs. Subsequently, it is extremely necessary to design a policy that aims to stimulate insulation of households and on the other hand develops an action plan for preventing failure, which mainly would rely on punishing measures.

3.2.1. Financial assistance for energy efficiency

Since Kosovo constantly makes efforts to address the issue of energy efficiency, every policy must put to service available capacities to avoid any potential overlap of competencies or any ambiguity. Therefore, considering the efforts so far as not functional, this study suggests to mobilize all institutions that according to applicable law on energy efficiency (Law No. 04/L016) are charged with specific responsibilities.

Any major project needs three partners to be successfully implemented, including: sponsor, leader and supervisor. For the needs of this project, the main but not the only one sponsor may be the Ministry for Economic Development (MED), a leader may be the Kosovo's Energy Efficiency Agency (KEEA), while supervisor role may be played by Ministerial Council on Energy Community (MCEC) – all of these bodies are foreseen in the applicable law.

Identification of regions with larger efficiency gaps is foreseen as an initial need of the energy efficiency project, therefore energy audit is an inevitable process. After we have a more clear overview of the current situation, those regions, neighbourhoods, streets and alleys guarantee a higher level of efficiency. Shortly, those regions where houses are less insulated must be targeted, since those regions in particular are the key to success. Again, to be more specific, the focus should be put on specific groups of families or operate on selective basis. For several reasons that will be explained below too, the study considers acting on selective basis as quite appropriate, since: 1) unemployment is of regional nature, 2) where unemployment is higher, family savings are zero, and 3) income inequality in Kosovo

is very significant, and figuratively speaking it may be said that middle class is disappearing. In other words, households that are more affected by unemployment must be assisted, since those households tend to have less monthly income in form of a salary, therefore they should be considered more in need.

Subsequently, seeing that not everyone is in need and in order to provide assistance for the most sensitive category, it is reasonable that households are divided into three groups, and to do this, the first thing required is setting the range or threshold, which should take into account many socio-economic factors, such as: level of household monthly income, family members that attend school, overall family health, etc. In addition to socio-economic factors, an assessment of households should take place to estimate needs and financial cost of the project. The first group would include those families whose budget cannot afford joining the national project for energy efficiency, and as such, this group poses the largest financial burden. The second group would include those families that to some extent may fulfil their need for thermic insulation of their houses, and as such the group poses and average burden by using a modest incentive; while the third group that included families that are financially stable only pose a burden of budget revenues. This categorization of families would be helpful later in the process of targeting and financing and provides guarantee for fulfilling the project objective.

To support energy efficiency project, the need arises to establish the National Energy Efficiency Fund (NEEF). Since the law on energy efficiency (Law no. 04/L016) regulates only the issue of energy use in the public sector, establishment of this fund in a form of private nature may be qualified as illegal. Therefore it is strongly recommended that the applicable law is amended and adjusted in such a way the ensures inclusion of private sector. The fund is foreseen to be managed by KEEA and to be supervised periodically by MCEC. The fund should be supported by the Kosovo Government, either through regular budgetary revenues or through loans for special purposes that are easily supported by international partners, and serious efforts must be made to attract donations from the European Commission and all other bodies that address energy efficiency with added care. Further, this fund should attract financial resources generated from the applied exercise for inefficient light bulbs.

Before the project implementation starts, the government must create favourable conditions to increase market competition for products identified as necessary for better house insulation. As a result, it is considered as a necessary act to subsidize domestic producers in order to destimulate imports, while for other products that are not produced in the country, the current applicable fee of 10% must be removed.

For the first group of families, the assistance must be in full and without return. This means the thermic insulation of households, that included changing windows, insulation of walls and roofs, will be covered by the state and those families will not be charged with any eventual cost. Since this group poses the largest cost, the project may be separated into phases where initially it is invested on roof and windows and later on wall insulation.

For the second group, the cooperation between NEEF and the banking sector. NEEF must enter an agreement with commercial banks for issuing loans with low interest rates and longer period of maturation. On this case, NEEF must take the role of guarantee and pay the interest on behalf of the loan receiver. To keep the process under control, banks should control and prevent changing the purpose of the issued loan and regularly update NEEF.

Lastly, besides customs facilitation, which might be reflected on product prices on the market, there is no direct assistance foreseen for the third group from the fund. Therefore, as it was mentioned above, this group only poses a burden of budget revenues.

It must be noted that energy efficiency project cannot be implemented overnight, but during a longer period of time, therefore it must be accepted optimistically despite its very high cost.

3.2.2. Options for preventing failed consumer behaviour

After all conditions are provided for overcoming inefficiency issue, including information and other accompanying facilitations as per respective categories, the government can righteously apply punishing measures for the families that exert unreasonable behaviour. Certainly, individuals who even with household insulation and available information cannot reduce their monthly energy expenses ought to be punished. Application of punitive measures makes us be optimistic that households would be encouraged to support the national energy efficiency plan.

Therefore, this analysis suggests property tax and designing of several schemes of energy price as punitive measures, which, are also easy to apply. Of course, the opportunities are increasingly more numerous, therefore policymakers must not limit activity only on these two options; on the contrary, they should constantly make efforts to find other more suitable and innovative forms.

In order for citizens to be pushed to insulate their houses, it is fair to apply differential rates of property tax. This brings about the need for deep cooperation between the central and local governments. Municipal level must take note and constantly review the situation of households and should apply higher property tax rates for those that do not meet minimum standards, which must be set in advance. Property tax must be progressive, and that means the application of more than the two types of property tax rates (insulated, non-insulated), since a house may have very old windows but an insulated roof, and another may have insulated walls and old windows, therefore in comparison with a house that is entirely non-insulated, another tax rate close to the one applied in regular conditions must be applied.

On the other hand, a very efficient incentive may be energy price. Households must be categorized into different packages based on the number of family members, and based on that categorization, a sufficient threshold of expenses per each family must be set. For any exceeding or better put for a family that has exceeded the sufficient threshold with expenses a higher energy price rate must be applied. Thus, households will use energy more cautiously, and this in turn is efficiency itself.

Conclusions

Seeing that Kosovo is facing with a growing demand for energy by households, the purpose of the study is to motivate intervention of public policies in line with circumstances to review the possibility of optimization of energy use in order to reduce energy bills and to provide affordability for families primarily.

The study takes notice of the seasonality phenomenon, which means that the demand for energy by households is significantly higher during the winter season and that the range of demand is relative to harshness of the winter. Further, using available data on situation with thermic insulation of households at national level, we conclude that inefficiency or unfair use of electrical energy is a result of weak thermic insulation, while with weak insulation the need for installation of double-glass windows, walls and roofs is identified.

In a more detailed way, the potentials of efficiency measures on economic growth, unemployment and living standard are elaborated. Besides economic growth, achieving a higher level of energy efficiency is subsequently believed to also have a positive effect on net trade balance of energy as well.

Then, under the assumption that Kosovar society is generally irrational, we construct an implementation plan for energy efficiency, which plan recommends as an initial and very necessary phase awareness raising of citizens. An extremely special feature of the action plan is the two-way approach, which through two totally opposite mechanisms aims to motivate households to join the national energy efficiency plan. It must me noted that these two mechanisms are foreseen to be applied inseparably, continuously, and on non-preferential or non-selective basis in order that each household either enjoys the financial assistance or is punished fairly.

Seeing energy audit as an inevitable process, the plan amongst else considers as reasonable acting on selective basis, and this means categorization of households into three groups. In the first group, inclusion of families that cannot insulate their homes with their own budget is recommended, which poses the largest financial burden of the project. The second group would include those who to some extent can fulfil their needs for thermic insulation of their houses, and as such they would be able to cover for the insulation costs themselves with a modest financial incentive and thus pose a moderate burden, while the third group includes families that are financially more stable and only pose the burden of budget revenues.

On the other hand, to implement the energy efficiency project, there is a need to establish a National Energy Efficiency Fund (NEEF). Since the applicable law on energy efficiency only regulates the issue of energy use in the public sector, the establishment of this fund of a private nature could be considered as illegal. Therefore, it is strongly recommended that the applicable law is amended and modified in a way that ensures coverage of private sector as well.

After all conditions for overcoming the inefficiency issue are taken care of, including information sharing and other accompanying facilitations according to respective categories, the government can rightly apply punishing measures to families that exercise irrational behaviours. This analysis suggests designing of several schemes of energy prices and application of differential rate on property tax as punishing and quite easy measures to apply. It is obvious that possibilities are always numerous and

policy-makers should not limit their activities into these two suggestions only, therefore efforts must be made constantly to find other more favourable and innovative ways to promote and develop energy efficiency.