**Minutes of discussion**

**held during the workshop**

**Energy performance certification of buildings and energy labelling of appliances**

Kiev, Ukraine
18-19 January 2011

*(Participants of discussions are welcome to propose their corrections, if any. The audio-recording of presentations and discussions are available on request)*.

**Main topics discussed:**

**Legislative issues:**
- Recommendations for Ukraine and CIS countries in terms of adjustment of the EU legislation to legislation of corresponding countries. (by G. Blanc, V. Shapovalenko)  
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**Economic issues:**
- Economic issues of energy saving; financial schemes, payback time with changes of the energy prices and tariffs; (by H.-M. Suvilehto, P. Holed, P. Vogel, B. Schwaiger)  
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- Dynamic of prices for the next ten years for all energy carriers and priority in energy saving issues. (by L. Vardanyan, V. Jalalyan, Armenia)  
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**HR/training issues:**
- Human capacity as a basis for successful implementation of energy saving measures. (by A. Kopets, V. Shapovalenko, Ukraine)  
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**Technical issues:**
- Technical approaches to energy saving: meters installation, regulating of heat and balancing the eternal distribution of heat is a way to make savings with rather short payback even when energy is cheap (by G. Belozerova, Kyrgyzstan)  
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- Renovation of old housing stock: methods and approaches, materials and prices. (by Steffen Sendler, Germany; ESCO Company, Ukraine)  
  *page 12*
- Energy saving lamps: experience of introduction and present situation in CIS countries. (by J. Krivosik, representative of Tajikistan)  
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**Certification issues:**
- Methodologies of energy services certification. How to prepare energy performance certificate. How to distinguish between energy performance certificate and energy audit. (by H.-M. Suvilehto, A. Kopets, P. Vogel, B. Schwaiger)  
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- Voluntary and obligatory certification schemes (by P. Vogel).  
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- Energy performance certificate as a market presentational tool (by P. Holub).  
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**Labelling issues:**
- Labelling: barriers and opportunities, harmonization. (by representatives of Georgia, Tajikistan, Armenia, Kyrgyzstan)  
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Others:

- Benefits for owners, issues of comfort, health, ventilation. Radon related issues: level of radon in the houses, measurement, and balance of benefits from energy saving. (by H.-M.Suvilehto, P.Vogel)
- Condominiums related issues in Armenia. (by L. Vardanyan, Armenia)
**Morning session**

P.Holub: Importance of energy efficiency in buildings  
G.Blanc: EU frameworks for energy efficiency in buildings and energy performance certification  
B.Schwaiger: Role of standards, certificate and financial incentives for improving energy efficiency in buildings  
H.-M.Suvilehto: Overview of EPC in EU countries  
P.Vogel: Czech Green Building Council  
A.Kopets: Display campaign of energy-cities in Ukraine

**Discussion:**

Shevchenko (Lugansk): What would be your recommendations for Ukraine in terms of adjustment of the Ukrainian legislation and to make it compatible with EU legislation?

G.Blanc: In fact the work on this issue is being performed now. There is a Task Force that has a regular meeting; we have a draft law prepared. The deputy minister can present it.

V. Shapovalenko, Ministry of Communal Services (Ukraine): Presently, the Ministry together with experts has developed the draft law on energy efficiency in buildings. It has been evaluated by the European experts; it was agreed with the national governmental agencies. Now it is at the Cabinet of Ministers and soon it will be passed to Parliament. The law fully reflects all requirements and standards that are being used in the EU now. Very soon it will come into the force.

P.Holub: What would be one key advice for the INOGATE countries when implementing energy performance certification scheme in the respective country?

H.-M.Suvilehto: Ukraine has already had a good scheme of working, why it would not continue on that. The process of preparing legislation takes time. The best was is a voluntary way to start and create adequate database, methodology and the comparable data that you can bench mark yourself. Actually it’s the system you are doing now. At the same time you may work with legislation. This is the way to make it compatible.

A.Kopets: The problems we are discussing - not only certification but the whole set of issues related to energy efficiency in buildings - touch every individual in this country, all energy problems in Ukraine. Those problems pertain to the housing facilities in all post-Soviet countries. Dreadfully constructed building – they will not survive high prices and people will leave them or the quality of life will be very low. It’s a great threat. The certification mechanism enables to see the problem and to start resolving it. We need legislative efforts but it will not be sufficient – we need competent people in the municipalities, who will be able to organize processes. We need systems for managing energy in municipalities based on professionals.  
Discussing legal frameworks I have a lot of reproaches to translators because the name of the Building Energy Performance of Directive has been improperly translated into Ukrainian. Translation mistake made by the Ministry of Justice resulted in the situation when we lost the whole notion of building energy performance as indicator, i.e. there is no such indicator in Ukrainian law. Instead we have a set of characteristics and this indicator is very specific and described in the European Directive. If we change translation the Directive will be absolutely applicable in Ukraine.  
The problem is not only with legislation but with institutional capacities of the grass-root level. We need people, energy managers in municipalities; we need management and informational systems. How the energy in buildings is used? The Swedish colleague explained us about difficulties in obtaining of information. They have processed a lot of statistics to get this information but we can solve this on local level by building a local management system for energy.

P.Vogel: The best priority for you should be to communicate with those countries who are already experienced in energy performance certification schemes. Not to make same mistakes as we made. That is priority that you should follow. Just a simple translation of the European legislation is an ambitious goal. If this will work I will be happy to help with that. But maybe you are providing good pass way to go first with
voluntary programs, to communicate the interest and philosophy behind the energy performance certificate because the most important topic is that energy performance certificate has become an interest both for the wide public and government. And will not become a duty for the people which partially took place in Czech Republic. And now we are trying to change this atmosphere and situation.

B. Schwaiger: In Germany we have been working on these topics for 40 years and we still can provide improvements on its implementation. Looking at the mistakes we made is really good recommendation. On the other side I would recommend that you should really get started with some small initiatives – try to make some pilot projects. Right now we make an experience in Ukraine working together with the cities, trying with each small step to identify new institutional capacity problems, personal capacity problems. You can really identify obstacles in your own system. Much better if you will try to do a pilot project maybe together with some international experts.

Prof. Rozan (Kyiv Polytechnic Institute): When we start to discuss wind energy and noise problem we do not mention that we need to construct roads, service wind installations. Only in Swedish presentation was mentioned that radon to be measured. How much do you spend in Sweden for medicine to cure cancer problems caused by radon? Just to count the balance benefits from energy saving. And I would like to ask Czech representative – do you measure radon in houses?

H.-M. Suvilehto: Before, we had two different levels: it was for existing building – 300 Bq and 100 Bq for new. In 2001 the level of radon was reduced even at the existing buildings; presently its 100 Bq for all. Radon measurement is done every three years. If you have a problem with radon you can get governmental money to increase the ventilation. Ventilation is the way to solve the problem with radon.

P. Vogel: In Czech Republic we do have a map of zones with high risk of radon. There are mostly areas where were located mines. Each accredited engineer has to provide a certain measures starting from simplified insulation against radon up to ventilation. The accredited engineer is responsible to fulfil certain requirements. If there is a high level of radon the engineer is obliged to take certain measures.

V. Narizhnyi (Lugansk): I am a Director of private company that provides services for private houses. We have been working for 4 years. I would like disagree that people will leave the houses – nothing of this kind! But at the same time people would like to live differently. The deputy minister mentioned that documents were prepared on energy saving technologies – they are badly needed but we should be more proactive in business approaches in communal services. We should get rid of the state owned facilities (ZhEKs) running this business. In Lugansk we launched a special set of measures including energy saving technologies. But the present legislation does not provide protection of our interests; example: in 2010 we saved about 300,000 UAH but we were fined instead of being praised. We have to stop with state monopoly in this area. They are used to receive budget funds; somewhere allocate those funds and support own living. When to housing sector come people with business approach they will bring energy saving technologies.

V. Shapovalenko, Ministry of Communal Services (Ukraine): Indeed the questions being raised are known. With the new team the Ministry is working to legislatively solve these issues at the housing market and introduce the practice of using private companies in servicing of apartment buildings and attached areas. But current legislation does not allow companies to effectively implement these measures. Narizhnyi is a member of Working Group and we will actively cooperate. In the nearest six months we would be able to prepare a number of appropriate documentations.

A. Kopets: It’s difficult to start a discussion on perspectives of apartment buildings unless we do not have basic information on their condition. This year in Lviv when participating in the project on reform of the municipality heating system we had established a municipal energy plan for the period till 2012. Within the plan we have calculated the expenses for the entire massive energy system of the city. Today the city annually pays 3 billion UAH for energy resources. And in 10 years it will to pay 15 billions UAH. I do not think that till that time it will be possible to increase income of citizens in 5 times. Something has to be done with this amount of consumption. It’s necessary to decrease consumption level before increase of prices for energy. You saw comparative table – we pay for thermal energy in 4-5 times less comparing to other countries. Now we have overlapping subsidies for energy, heating, etc. In couple of years there will be no
subsidies available. The tariff for population will be increase in 3-4 times. We have to change the situation for the better.

Y. Naschekov (Centre of Energy Managers Training, Kiev): In the west they usually talk about energy services and they talk less about energy efficiency of energy consumption. As it was mentioned before that even through introducing certificates we will never be able to learn what kind of temperature was in this building, lightening conditions, whether the energy services were provided or not. Do you usually have standard energy services or it depends on tenants’ behaviour, because some might like 18C, some 28C. How do you apply this situation in the certification of the services you provide in your countries?

P. Vogel: If you would like achieve comparison of buildings. In this case all the input values including the behaviour of the occupants should be made as constant. Afterwards in the calculation methodology you can easily compare if the designer designed the building well or not. But the second approach not to have binding methodology, input values, which also makes sense, because in that way you rely on the accredited professional to plug in the right values, to consider all knowledge about design, predictions how people will behave in the building. And therefore you get in the second approach real estimation of energy consumption and economical costs for the operation of the building. These are two approaches which in my opinion should not be mixed together.

H.-M. Suvilehto: In Sweden there is a case when they take buildings without tenants. They do it to figure what will be energy performance of that building without any behaviour impact. And also the practical point of view, when you have a shopping mall with 199 shops the building owner has only information what is paid for the electricity, ventilation, heating, cooling and some essential lightening. Every shop owner has its own electricity bill. It will cost a lot to collect all necessary information for the energy certificate.

A. Kopets: There are two basic methodologies on certification process: one is based on calculations; the other is based on measurements. In different countries they use different methodology. For Display Company we use methodology of measurement. The measurement looks at the behaviour of tenants. From management point of view it is more important to know integrated result. We have to improve the existing methodology in certain priorities such as lightening, heat comfort and make appropriate measurements. This slightly increases the price for the certificate.

L. Vardanyan (Armenia): I represent Ministry of Energy and Natural Resources of Armenia. Here we are an audience consisting of people – advocates of energy efficiency. We are very interested in the methods, approaches in this area. But locally we have to resist our financial structures. We need instruments and methods to persuade our financial institutions with the benefits of applying energy efficiency methods. We have to understand that today we have to spend this much but in future we’ll spend less. It will be beneficial for the country and its people. But today the financial official is thinking how it will affect the today’s budget of the country. The user, in his turn, is not interested in future; he’s interested what is happening today and how it will influence his financial situation. For this we need some serious amounts – but they can be received only through the loans, which have to be paid back. I’d like to ask our colleagues for their experience, to show us the price. How much we have to invest to make the change. Give us the figures. If you are not ready today to provide us with answer I would like to ask organizers of this seminar to have a separate seminar on economic issues related to energy efficiency – how much does it cost? Because in 2004 in Armenia we adopted Energy Efficiency Law and in 6 years later that we still fight with our financial structures for every penny; and for these 6 years we were able to make only some small incremental steps, we were unable to achieve any significant result in energy efficiency both for the public and private structures.

P. Holub: Establishing of this mechanism is one of tasks for ESIB project. We have capacity and time and experts allocated for assisting your countries and ministries also with economical and financial issues.

H.-M. Suvilehto: Coming from Swedish experience of energy certificates and also the services we have conducted in public buildings - all measures within the control have the payback period less than a year. They are almost immediately gained. Also for installation, improved ventilation, installation of more efficient fans or lightening we have payback period from 3 to 10 years. Insulation of attics has payback
return of 3-5 years. Installation of new windows, building envelope normally has a very long payback period. Investing into energy efficiency on case bases is not efficient. When you do full refurbishment – it’s always efficient as you take the best possible technologies. In the long run you gain more. There is a program in Sweden when property owners make their own case studies, which show that after refurbishment the poor building came to the same level of energy efficiency as new passive house. And this is cost effective as it done as energy efficiency package of measures.

B. Schwaiger: It’s difficult to answer this question, because what my colleague from Sweden has just explained, we have the same figures in Germany more or less, but you have different situation here, I mean we have made some calculations for Ukraine and some measures you have to payback with the tariffs takes 20 or 30 years, so you won’t do it. This is a very complex thing: along with loan programs, what should the government pay, what should the apartment owner pay, what should a city pay and this the whole set up. This is a very complex question. There are few things of cost that it makes sense if make a certain things in a certain period otherwise it is economically unrealistic, but there are many things that you have to think about in your specific situation in the country. It’s definitely difficult to make a general answer and, I think this question needs specific workshop on it.

P. Holub: This is a very complex question. This is probably the most important think we have to solve. By all experience we have calculated let’s say the movement of communal buildings towards German passive house standards and by using Czech prices for heating, electricity, we calculated that for the family house it was around 25-20 years and for the multi dwelling apartments – a bit better – around 15 years. The investment costs in thermal insulation, in heat recovery, ventilation system for the family house 150,000 CZK, which is about 6,000 EURO, for multi dwelling buildings this movement from standard building to passive house standard is about 19,000 CZK or 3,500 EURO but the payback time in Ukraine should be multiplied by the difference in the energy prices. In Czech Republic the driving force not always an operation costs, it’s a life style, what I feel from the demand. What is very important is that driving force is a comfort of the people, the living environment, and health. If you compare high quality passive building with the standard approach of building, the comfort criteria is very different. In a standard building in Czech Republic now you cannot even breathe the fresh air, in the passive building you have a mechanical system of ventilation of bringing fresh air effectively, and you have more penetration of day lightening. We do market such building and we do market of such approaches by these issues, not only by operating costs. One more short comment on this – we have connected with experts doing macroeconomic consultancy for the government and this Board of Advisers is now focusing on energy efficiency. The net present value to invest is positive Czech government budget – that the message that we have for the Czech Republic but it is dependent on the prices for energy.

V. Shapovalenko, Ministry of Communal Services (Ukraine): Really Mr. Vardanyan touched very painful problem in the full set of issues that were discussed today. You understand that there are no problems with organization of energy management. In Ukraine we have developed operating monitoring system for energy consumption in buildings; we organized training of energy managers. There are no technical problems at all. We have enough technologies and materials that enable to provide for comprehensive thermal modernization of buildings. The real problematic block is financial, that is derived from the overall economical situation. I think that in Ukraine and CIS countries we have just the same disease – the communal services we inherited from the USSR is highly politicized; tariffs do not include full costs of communal services. Today in our colleagues presentations we see the level of prices for energy in Europe and in Ukraine. The low energy prices are not covered by tariffs in Ukraine.

We do have some project in Ukraine being implemented; we have very good experience in Nezhin (Chernigiv region). With Dutch credit resources we made thermal modernization of multi-storey panel building. The result was really marvellous but the problem is to payback the investment. The energy consumption went down to 50 % but due to legislative problems the investor is facing a trouble now, the Ministry is dealing with the issue to provide the payback about 400,000 EURO, which were spent. The house has consumed 100 GCal of energy; after modernization – it consumes 50 GCal and the difference is the basis for payment of loan. If it pertains to administrative public buildings (kindergarten, hospital, etc.) it’s not a problem to come to an agreement with local government – it’s possible to resolve. As to multi-storey building it requires
willingness of inhabitants. Now it’s only experiment, tomorrow it will be the general accepted practice. Should be created the Union of Apartment owners, some alliance of owners are to be created and directly with each tenant or inhabitant should be made an agreement. The inhabitants are obliged to pay certain amount in the frameworks of the project. It’s possible to resolve issue with participation of governmental structures.

Unfortunately on the high level we do not have so far a uniform approach and understanding how we should finance such projects. And our task is till the end of 2011 we should develop such problematic issue and put forward a legislative initiative that would enable us to pass from pilot project to massive modernization of buildings. We will use 10% of inhabitants’ money; 30-40% of local and public budget and 60% will be from credits resources. We are closely cooperating with our EU partners and we see that they agree with us. They are ready to finance such projects. But once again we have the task of legislative improvements that will provide for payback of investments. We are working in this direction.

**J.-J. Dautet:** As I have told this morning our next workshop will be devoted to municipal strategies on heating and will be focused on economic issues, will be focused on payback time of different ways of heating, not only payback but also social aspect, will be focused on specific issues and enables you to make your own choice depending on situation in the country.

**Afternoon session**

**On behalf of O.Khusnutdinov:** Possibilities for energy performance certification of buildings in Ukraine

**V. Jalalyan (Armenia):** Presentation of pilot projects on elaboration of building passportization in Armenia

**G. Belozerova (Kyrgyzstan):** EPC/passportization of buildings in Kyrgyzstan

**J.-J. Dautet:** You made not only presentation but also analysis of the situation, reasons. You did not find the solution but “problem which is well analyzed is half solved”. Now you need only to solve the problem. In Bishkek the district heating was in specific situation for many points of view, specific aspect was that it in the interest of district heating to encourage customers for energy saving. It was in favour of installing water meters in flats. People also were interested in installing meters, were ready to pay. Since last year the number of water meters in flats was increasing, was it correct?

**G. Belozerova:** No. We had 2,500 - 3000 users for metering equipment installed on grant money – people were not interested in its installation for own costs. But when tariffs for heating dramatically went up in January-February 2010 - 40% of meters were installed for consumers’ money, than that tariffs provoked social turn over. So, such a gloomy experience we had.

**J.-J. Dautet:** Another possibility for energy saving when people pay according to the energy they consume: either on individual or building level – to provide the heat they needed. You mentioned several times in your presentation regulation devices but mainly in the district heating network, but probably also at the building network. Because regulating heat at the entrance of the building and balancing the eternal distribution of heat is a way to make savings with rather short payback even when energy is cheap. Do you have such experience?

**G. Belozerova:** No, we do not have this kind of experience; we do not have distribution system for central heating for apartments. It would be great to have it. I keep saying that installation of automated devices is supposed to be paid by energy supplying company, but renovation of equipment is to be covered by population. The population is too poor for that. That is why we have situation when people expect that company will resolve this problem, company wait for increase of tariffs. Tariffs are expected to be increased for modernization reasons but we have already had negative experience. It’s not our way - we cannot shift all problems to consumers. We have to think in which direction we should go.

**J.-J. Dautet:** I was just speaking about renovation of equipment for regulation with a payback like 2-3 years – rather short. Usually the dwellers do not want to pay such costs. But in such short payback time it is possible to have a kind of specific financing.

**A. Kopets:** Did upraise stop growing of prices?
G. Belozerova: After the upraise prices were decreased and so far they are stable. Each government raises prices after election. Now they are saying that prices should go up. In the frameworks of Energy Saving Program that has been discussed now, the Department for regulation is assigned to analyze energy saving tariff with incorporation energy saving measures. No decision has been made but work is in process. Presumably the tariff will go up because the prices for energy carriers will go up and we cannot slow down the process. Previously, after the prices were stopped the retired people got water meters for free and heating supply enterprises paid for that.

Discussion

A. Kopets: I have a question to GEF UNDP. Do you have the forecast for the dynamic of prices for the next ten years for all energy carriers? I would like to see all scenarios: gas, oil, coal, electricity etc. why we should deceive people and promise that prices will stop if global prices go up?

L. Vardanyan: The Ministry made some forecasts but I cannot guarantee that those forecasts will come true. I should say that official policy of our government is to use all measures to slow down the prices on energy carriers. In the course of the last ten years we haven’t increase prices for gas and electricity on government initiative - only when the Russian gas became more expensive. It is always an external initiative to raise the price. It’s pure political issue. We should be in line with global and regional tendency but it’s difficult to forecast.

J.-J. Dautet: You have presented a very comprehensive picture of the situation, of undertaken actions. What do you plan now as your priority actions intending to get concrete and significant results? What is your priority now in this area - energy saving in general?

V. Jalalyan: The project has its own components. We try to create some amendments to the existing norms in the legislating field to justify certification of the buildings. As for the Ministry – they adopted in November 2010 the so-called NEEAP (National Energy Efficiency Action Plan), which covers the period from 2010 to 2020. The plan is clearly stated schedule of step by step movement towards increasing energy efficiency.

A. Kopets: What part of multi-storey building in Armenia has condominiums? Why they failed to become well grounded?

L. Vardanyan: The idea of condominiums in the form of Union of Owners arose in 1993; and in 1997 the first law was adopted; and in 2000 – the second law was adopted on management of apartment blocks. In fact social housing was privatized and a great number of owners appeared and they were bound with necessity to provide servicing, renovation, maintenance, not mentioning energy efficiency and energy saving so far. Naturally, apartment owners had the right to sell, to use it, but they didn’t think that they would have to pay for maintenance of common property. But condominiums by the law acquire the function of manager the housing fund for apartment buildings. At the same time it simultaneously acquired a lot of functions, which is not proper to their functioning such as provision of services on renovation, maintenance. And they failed to economic reason and financial situation – how much does it cost to maintain housing. During the Soviet times maintenance cost 10 kopeks per m2 and additional 37 kopeks was subsidized from the state budget; so 37 kopeks of subsidy were eliminated and the only source of financing left – is owner’s pocket. That the reason why condominiums failed.

I’d like also to add that our state has made a decision to create a 5-year plan on maintaining and servicing housing using the state aid. For the first time since 1994-1995 when there were the last subsidies for housing, the government draw to the conclusion that in GDP they have to identify some percentage for the upgrade of the housing fund. Now the housing fund constitutes up to 25-35% of the entire capital fund of the country and this is a strategic ownership, which has to be maintained regardless whether the owners have an opportunity or not. Now we have issue of energy saving and energy efficiency. And they provide with additional burden against the budget of the owners: now the owners of the houses have to make decision themselves on apply of technologies. We doubt that with the help of those individuals we can solve these problems: state assistance
though some budget allocation or loan program have to be used. Time will show whether these measures are efficient.

A. Dukhno, “Knauf Insulation”: *Block of business view on EPC of buildings*

V. Parkov, “Danfoss”: *Block of business view on EPC of buildings*

S. Srapyan (Armenia): I wish to thank my colleagues because I have received information, confirmed my some ideas and got solutions for issues that are being discussed in my country. Among engineers and officials we have understanding that there is no way back. The energy efficiency and energy saving are the issues of yesterday; today we have to have some results. I would like to note the high level of information and presentation made by Sweden, Czech Republic and Ukraine.

For myself I noted the following: Sweden to get some results had decades of work, Czech Republic needed less time, as to Ukraine they said that in five years they organized inter-municipal cooperation. And this is very serious area of cooperation.

Ministry, which I represent, is responsible for regulations of legal support in the area of housing, for policy in housing and construction. It’s important to adopt some norm using European directives and regulations. We can translate them literally and start using them as we had an example - most of those documents have been adopted in Ukraine. If I am not mistaken – the government is using them.

Likewise there are some comments that European norms cannot be directly applied in our states. For my country I may say that we cannot apply European standards in Armenia. We can use them as recommendations. We can motivate specialists to use them; we can provide people with some incentives to use these norms.

But in a due time, when economic situation will change - we’ll be able to adopt these norms. We all have to understand clearly that without economic component, the financial flow it’s impossible to manage this huge bulk of work. We now are dealing with existing public or private buildings constructed without any single consideration of energy efficiency or energy saving norms.

For every party participating in this program please provide your recommendations taking into account its peculiarities. I understand that objective of this program is to provide recommendations for countries, but it depends on every country what to do with this knowledge. We should have recommendations how to improve legislation, norms; we have to look where we can go, in which direction and we have to establish professional training for personal in these republics. May be we have to identify certain means or grant money to use to prepare specialists, in colleges establish some courses. These things are important – we do not have proper personnel able to cope with these issues.

My colleagues from Ukraine who have established an association Display Company they have got some experience. If you won’t have proper people nothing will take place. Training of personnel is important, that’s why this issue should be the main task in this program.

P. Holub: We can bring information from EU, our countries. And definitely together with you we can see how these norms fit to your countries because not all that exists in EU can fit to economic and capacity framework in your countries. This is a subject to mutual communication and we are here to assist.

J.-J. Dautet: Display Company is founded within the program of EU – Covenant of Mayors. There were some contacts between Yerevan and this program so maybe you will be pleased to participate in it in the future.

P. Holub: I will try to wrap up today’s session. I have put down seven comments, which should not be omitted when we’ll discuss energy performance certification of the buildings.

1. Economic issues, energy efficiency in buildings, standards, certificates, financial schemes to be set up according to situation in your countries; it’s also include payback time with changes of the energy prices and tariffs;

2. We should be aware of benefits for owners of buildings, for society, for the state budget. I wish to repeat what was said this morning: in Czech Republic the economist counselling the government prepared for the Green Building Council study, which actually said that higher energy efficiency standards have a net benefit for the society. You have to overcome high initial cost but then society – every household, building owner – will save from decreased energy cost. It also decreases robustness to higher energy prices and against non-reliable suppliers, which happens when energy comes from different countries. - It’s also
includes issues of comfort, health, ventilation of fresh air because often higher energy standards come together with better comfort.

3. Definitely should be taken into account methodology: how to prepare energy performance certificate. In some countries it should be measured, in some calculated. May be it’s important to distinguish between energy performance certificate and energy audit. Because energy performance certificate should act as a market tool saying how efficient is the house and what operational costs of the house are. Energy audit will be detailed – what can be changed in the house. You have to distinguish these two tools.

4. Certification of new constructions and existing building stock should be distinguished. You cannot set up the same requirement and probably ways of the certification for new constructions and existing stock. As it has been said certification for new construction is easier as you have all data and huge investment cost for a new construction, so energy certificate is not too big burden in that costs, so it’s good to start from there and then to go to the existing building stock. The existing building stock is the main issues because it covers 99% of the houses and only 1% of new building added to housing stock each year. The existing building stock is often built in Soviet times as worst energy performance example.

5. Whether to have voluntary or obligatory certification scheme. Voluntary scheme can facilitate and foster the process of introduction energy performance certification of buildings because you do not push anybody. You just have pilot project voluntary certification scheme of public buildings and then obligatory scheme come into place.

6. Human capacity is very important issue. If such a nation wide scheme is introduced definitely it will consider education of the authorized engineers who will issue energy performance certificates. And also the state administration, which will give the authorization to these people and ensure that authorization will be taken away if somebody doesn’t follow the rules. It’s important to have a database of energy certificates.

7. Energy performance certificate is a market presentational tool. It needs to be promoted by the state authorities, so that people understand what energy performance certificate is. Graphical design of the certificate should be clear – kind of catchy for eyes.

**2nd day**

**Morning session**

J.Krivosik: Why appliance labelling: introduction to the topic

**Discussion**

N. Jollands: 1. Do you believe that it’s a cost effective way of reducing energy or you think that it’s not so believable? May be there are better ways to do this?

2. What are the barriers which to polling this labelling in place in your country?

Georgia: 1. We do believe.

2. The barriers which we face in Georgia for energy labelling is that we are at stage when people a get to know about it. This is first step. We have a several projects and several organizations are working about public awareness. After that we’ll start the labelling procedures. All domestic appliances have their own labels – European ones. As we are not producing these types of things we do not have our labelling. We have some projects to prepare and we are going to implement and go forward with this. Now the Ministry of Energy does not working on abovementioned projects. Implementation of these projects is supported by USAID, other donors and NGOs.

N. Jollands: What do you consider is the level of government support?

Georgia: The government expressed its readiness to do every positive thing. We hope that they will welcome these procedures when they will start.

Tajikistan: We have the similar situation as in Georgia – we do not have local producers. Domestic appliance products are imported from other countries. For these products to be brought in they have to be certified by Tajikgosstandard. This agency looked at the label, technical characteristic of any appliance. They have appropriate experts who do this. Besides they will test against the specified parameters in the supporting documentation. Only after this process product will be marketed and offered to consumers.
All these measures are implemented in the framework of the Energy Saving Program. This program was supported by the resolution of the government and the President on transition to the energy saving lamps. We have 7,5 mio people and in 6 months the entire country switched to energy saving lamps. We actually put a ban to incandescent lamps. We imported certified by Tajikgosstandard energy saving lamps. Vulnerable levels of population received these energy saving lamps for free. The public authorities were switched to energy saving lamps immediately. So in 6 months our country was able to switch to this new energy saving lamps and save 3 billion KWh.

In our standardization agency we have already started testing of all appliances according to labelling accepted in CIS countries. We also developed the standard: Informing consumers on energy efficiency of appliances in the housing and communal sector. The standard was developed according to ISO standard. It includes labelling on 7 levels from A to G. and we organize public awareness campaign in mass media.

J.Krivosik: Appliance labelling in the EU and other regions, overview of legislation and activities

Discussion

N. Jollands: 1. Whether the EU model the INOGATE countries should be copying or not?
2. Should INOGATE countries/your countries harmonize labelling?

Armenia: First question to previous reporter. Unfortunately in all our countries consumer is still looking at the price of the product. Consumer has to be informed and prepared before introduction these new methods and systems. The question is the following – is it always the case when energy saving feature of the product leads to increase price of the product? Is it a tendency or rule? If there is – what is the percentage? How advance features of product influences its price?

J.Krivosik: Swiss being a reach country shows that the main aspect in choosing a product by its citizens is the price. So, it’s not only Armenia, not only Czech Republic but also one of the richest countries in the world where people are selecting mainly based on the price of the product.
And therefore it’s even more important to try to have label to influence them at least to some degree. To show that future bills which you will later pay for electricity also influence your family budget. In USA system of labelling also shows not only electricity consumption in KWh but also price in local currency.
There have been some researches done – nowadays we have a lot of A-class appliances with high cost and not sufficiently high energy efficiency level. So, not always more expensive products have better efficiency. It’s not to be always the case to be more expensive, but it’s not so easy for consumer to find it.

N. Jollands: When in 80-early 90-s IES OECD countries were making the argument for putting in place standards and labelling manufacturers argued that requirements to increase efficiency would increase the price to consumers of those appliances. So we at IEA we have done an analysis which showed very clear data that it is not the case - the prices will come down.

Kyrgyzstan: We believe that one of the main obstacles in introducing energy efficiency technologies is socially oriented tariffs for the energy, for the electric power. This is one of the lowest tariffs among the other energy sources. It’s extremely difficult to make the people save if they do not pay high enough for this resource.
To change the situation, in July 2010 was issued presidential Decree on Introduction Transparency in the Energy Sector. According to this decree we have prepared a program to be soon approved by the government. And one of the most important activities will be public information of the need to save energy resources using mass media, public broadcasting. We have decided to start from some incremental steps and we have to explain people the importance of this matter.
In the first half of this year all public enterprises will have to switch to energy saving lamps. This is a first step on introducing energy saving technologies. Things we have heard are very much acceptable and we aim at achieving those goals. We have our representatives discussing of introducing of those standards and we are content that we will have them. But we have to start from the bottom level; from people, because we should have an opportunity to increase tariffs and we have to start explaining people what and how it has to be done.
As I have already said we believe if we use the labelling there will be increase in price for goods. And usually the population is looking for the price. Only few people will be looking for the label.

**J. Krivosik:** Some comments on price for electricity the people are paying. This is one of the very first conditions that have to be in place if you wish your labelling system to succeed. People are paying the price for the energy, which is based on the actual cost of producing and delivering of electricity. In Czech in 1990 price for electricity for households was subsidized – it’s called cross-subsidy that means that industry had to pay higher price to cover the cost for households. And one of the conditions of transformation of our economy is - the price which is paying by every type of client to be based on the real cost. Thus, nowadays, consumer is looking for labelling.

**Kyrgyzstan:** In relation to this I should say that Kyrgyzstan has another issue: mainly we have hydro power and cost to produce energy is much less that by heat generating power plants. That’s why people do not want to pay much if the power is almost free. The plants are pre-new, so you do not have to pay a lot for depreciation. That’s why its production is rather cheap. We have to explain people that in time what equipment will become more obsolete we’ll have to pay more. Our export potential is it quite significant, that making the situation even more complex in introducing energy saving technologies.

**Moldova:** This issue is very important to the country as we do not have own energy resources. Moldova is an INOGATE member as well as EU zone for Balkan countries. That’s why we must make our legislation compatible with EU legislation. Last year was signed the law on energy efficiency. The previous year there was decree on Energy Efficiency Agency. So, we are working.

**Tajikistan:** I would like to add that when the energy saving technologies get access to the domestic market, in some countries many new goods and products are introduced in the market. They may contain many technical deficiencies despite labels available. All products that come to the country are subject to mandatory control. And only afterwards they may enter the market.

As to labelling – we all former USSR countries have Patent Information Agency. All well known brands available in the country are registered. If other companies start issue product that is in some resemblance with those products – the PIA does not issue certificate for this product and if they manage to get this document – the right holder can sue the PIA.

This is done in the frameworks with European Charter, all principles available in EU documents. Tajikistan made a lot of work in approximation to it. From the other hand the country being a member of Shanghai group, which includes WTO members, and in this context a lot of legislative work has been performed. We develop measures designed for harmonization of legislation, but we also have gap between legislation and its enforcement.

**T. Lock:** UK: organizational framework and promotion of energy saving products  
**J. Krivosik:** The Netherlands and Sweden: examples from countries testing products and visiting shops for control purposes. Czech Republic: example from transition economy

**Kyrgyzstan:** Besides beautiful labels used by distributors of products what are the measures can we have to motivate producers to manufacture energy saving goods? How you made adaptation of legislation: you approved existing laws or adopted new ones?

**T. Lock:** Motivation of manufacturers – some financial incentives to encourage better performance production, carbon emission reduction targets set – which is a lot of money – accessible to manufacturers, helps subsidize of production of those products. We are talking about money which goes directly to manufacturer to help to reduce the cost of their production. So, this is a great incentive to manufacturer to produce this sort of production.

In UK each consumer pays around 12 Euro in energy bills without knowing and this money collected and distributed. Voluntary retailer initiative – we are working with retailers who then force manufacturer as retailer is a king and manufacturer serve to retailer. And if you manage to persuade the retailer to stock only certain products, the manufacturer will have no choice but to meet those standards. Retailer will benefit by selling more expensive products.
J. Krivosik: 1. In EU manufacturers like labelling. They do not have to be persuaded anymore, they like it on their own. It’s true at the beginning when labelling was introduced they were sceptical but now they like energy labels and they promote labels on their own. When labels were introduced there was internet site in all EU languages, where was made explanation and promotion. The chief argument – they like to have common playground and that all manufacturer having the same conditions. Label and technical norms are the method to compare and prove. So label can argue in favour of the product. My arguments were based on activities of European manufacturers of home appliances, which are showing the product of higher quality.

J. Krivosik: 2. It has been the process for several years. Part of the problem was discussed at the EU level. So there were 27 member states and some of them have different opinions as to how it should be done. The problem was procedural – how it should be organized i.e. organizations which will be controlling and technical point of view – technical testing, development of norms etc. Only the change of the design of labelling was a big issue. There were done a lot of surveys in which thousand of people have been asked if they liked it and understand it. A lot of discussions lasted for several years. Now EC improves documents and then they have to be adopted by European Parliament and become valid in EU. And it is up to national government in each country what exactly they will do.

In UK they testing, visiting shops, in Sweden we saw 200 shops visited, in the Netherlands 75 products were tested. But that’s their decision. The framework of legislation is the same everywhere but practical decisions up to national institutions.

N. Jollands: Policy pass ways to an energy efficient future: monitoring, verification and enforcement of appliances standards and labelling programs; and energy performance certification of buildings

V. Bogachiov (Moldova): Examples of activities undertaken in selected INOGATE countries: Moldova

S. Gyurjian (Armenia): Examples of activities undertaken in selected INOGATE countries: Armenia

N. Jollands: Have you tested the level of consumer awareness of these labels?

S. Gyurjian (Armenia): These labels are not yet implemented, so it’s impossible to test level of awareness of consumers on something which is not yet exist. We have monitored awareness of consumers on energy performance indicators in general. It’s quite low from the point of view of understanding energy characteristics of the appliances but there is a strong wish of consumers to follow up and buy products on the basis of their technical characteristics. There should be a tool for them to explain, to transfer technical complicated definitions of energy performance into a simple tool which may be available for consumers. Our studies showed that consumers are ready to buy products on the basis of their technical and energy characteristics.

Steffen Sendler (Drees&Sommer): Business view on EPC of buildings

N. Jollands: You were talking about new buildings and how this relates to energy efficiency?

Drees&Sommer: We are talking about optimization of the existing buildings and we see that process is rather efficient. And in the future we think it will be 30/70 reconstruction, modernization and optimization. We work in both directions: existing old and new buildings.

ESCO presentation

Kazakhstan: What materials you used for isolation: imported or Ukrainian? Whether Ukraine has production of certified materials for thermal insulation?

ESCO: We tried to use local Ukrainian materials to make it cheaper. The house has 40% inhabitants – retired people, so the main point was economic reasonability. We got 10 years warranty from the suppliers of construction materials. Materials were local. And we stick to all technological rules during our work. Ex.: on two walls, which were insulated for budget money, in one year later defects were found.
Control over works was done by the most capable provider in Ukraine and we hired them to control the works. You cannot joke with buildings you must have a design of reconstruction and we developed the targeted design – a very serious issue, there are technical limitations and rules that should be abide.

Kazakhstan: You provide modernization of the house which is the old soviet-time building. And now you have 40% of savings. Do you have such problem as extra temperature in apartment?

ESCO: Yes, but we had some limitations: we didn’t reconstruct balconies, apartments. That results in the fact that we faced the problem of overheating. We use internet for management of heating point due to economy. But due to the building inertia we overheated it.

Kazakhstan: You should have your fund to pay back. How did you raise tariffs?

ESCO: There two components: energy component – cost of energy resources - and the rest. We have an agreement: existing municipal tariffs per m2 minus 3%.

Kazakhstan: What is the average price for thermal modernization per m2?

ESCO: We use individual approach and cost. But very average 100 USD/m2.

Kazakhstan: What do you use for thermal insulation of wall polystyrene?

ESCO: We consider several components: tariff, budget and result, so the optimal way was to use polystyrene.

J. Krivoshik: Phase out of incandescent light bulbs: example of a product standard prohibiting sales of inefficient products

Kazakhstan: We are planning to switch to energy saving lamps and in 2012 we’ll have ban to import incandescent lamps. How do you recycle energy saving lamps? Do you have any facilities you may come and dispose those lamps?

J. Krivoshik: Part of argumentations against these lamps was that they contain mercury, which is dangerous. And in all our countries there is a system which enables recycling. Usually in every country in Europe there is a specific company – one organization which is designed only for recycling including organization system of recycling. We have a system of fees for most of appliances, not only light sources, if you buy a new appliance you pay a small amount of money for recycling of it.

Uzbekistan: You have institutional ban for certain incandescent lamps, but there are some special lamps which used for fridges, machine buildings. How do you deal with this?

J. Krivoshik: The legislation specifies that these lamps should be used as light source but it allows special use that kind of lamps but it’s a small market.

H.-M. Suvilehto: Manufacturers of light sources are they shift all together to new light sources? Are they still producing old type of lamps? Otherwise may be it is no need to make a legislation – the market will make it.

J. Krivoshik: Is was a discussion why the legislation should prohibit the use of incandescent lamps, the answer – people will not move even if classic lamps are of G class when new ones of A class. Still people inclines for the price. The market movement was very slow, that’s why legislation was introduced.
I think that manufacturers still producing incandescent lamps mainly for other regions, not for EU anymore. From September 1, 2011 60 Wt lamps will not be solver at the shops but that does not mean that since the next day there will not be incandescent lamps at the shops. It only affects the new product entering the shop. It’s simply a prohibition to enter the market.
H.-M. Suvilehto: You say that incandescent lamps are a good heating system but I disagree because it’s up to the ceiling and we cannot control it unless we have it under the window.

J. Krivoshik: One of the arguments of the incandescent lamps was an argument that it’s good source of heating. The heat will stay in the room and there also will be some light. But if you use it in the summer – you have too much heat, which you do not like and it’s on the top of the room where you do not need light. Countries have different tariffs and if you use natural gas for heating the electricity tariff will be higher.

H.-M. Suvilehto: How you follow legislation? I saw a Danish article where they promote heat globe and it looks very much like incandescent lamps.

J. Krivoshik: In Germany there was a case when somebody started to sell incandescent lamps as heat source. It was prohibited as technologically it was the same as for bulbs. It was a marketing tool of retailers.

Tajikistan: In addition to your presentation I would like briefly to tell about our experience when we passed to the energy saving lamps in 2009 after presidential decree. Naturally there were many problems, challenges. We took European experience. There was problem of price – they are 5-6 times more expensive. There was indignation of population – energy saving lamps contains mercury. What we have to do with it later? There has been developed draft law on establishing of system of collection, transportation, storage, sell and processing of energy saving lamps as well as rules to use it. This was analyzed by government and we started an awareness campaign about advantages of such lamps. There was also a banning rule on import of incandescent lamps to the republic. People tried to make some stock of incandescent lamps. But in the course of 2 years of transition to energy saving lamps has demonstrated 1/3 decrease of energy consumption. Presently 70-80% of population is using these lamps. It’s economically cost effective. It was the first stage of passing to energy saving lamps and the second has been initiated by the government it’s starting with development of transition methods and includes energy saving devices.

J. Krivoshik: It’s interesting experience. This is global issue – the same discussions are going on everywhere: Canada, Australia, and Europe. There was part of argumentation in favour of energy saving lamps that amount of hazardous wastes enter the air from classic light bulbs is higher even if energy saving lamps are not recycled.

J. Krivoshik: Information about publications submitted and further resources