European Union TWINNING Project

«Improvement of the Policy Framework in the Sphere of Energy Efficiency and its Approximation to the Requirements of the EU Legislation»

Ukraine 2012–2013

PROJECT REPORT

(Summary of achievements)

Content of Brochure:

1. Welcome words – Mr. Grygorovskyi

The major international alliance Ukraine would like to accede to is the European Union. Usually, when considering an applicant for a membership in the EU, the European Commission, in addition to the information provided by the State, analyses the documents of other international organizations.

Young democracies are expected to use widely the mechanisms of approximation of the legal system to European standards.

The energy sphere, which is in accordance with EU legislation, includes spheres of energy saving, energy efficiency and renewable energy. The energy sphere is recognized as one of the priority areas in Ukraine in which it is necessary to ensure the adaptation of national legislation to the EU legislation.

In February 2012, the State Agency on Energy Efficiency and Energy Saving of Ukraine, which is the central body of executive power that realizes the government policy in the spheres of energy efficiency, energy saving and renewable energy, started the implementation of the European Union Twinning project "Improvement of the Policy Framework in the Sphere of Energy Efficiency and its Approximation to the Requirements of the EU Legislation".

It should be noted that the ambitious goals set by the Agency for the approximation of the national legislation with the EU legislation in the course of the project are achieved. Experts from European administrations marked the very high effectiveness of the project.

There is still a lot of work, but the State Agency on Energy Efficiency and Energy Saving of Ukraine undertakes intentionally and constantly to follow this goal.

All the best,
V.Grygorovskyi

Ukrainian Project Leader of TWINNING project
First Deputy Chairman of the SAEE

2. Welcome words – Mr. Röben and Mr. Hoeflich

Dear project partners,

Ladies and Gentlemen,

on behalf of the German Federal Ministry of Economics und Technology, I would like to underline that my Ministry greatly appreciated the opportunity to act as the leading EU Member state partner of the German-French consortium in this Twinning Project with Ukraine for the "Improvement of the policy framework in the sphere of energy efficiency and its approximation to the requirements of the EU legislation". First, because energy efficiency is one of the central aims of German energy policy pursued by my Ministry. And second, because we are in charge of European energy policy and the implementation of European energy policy guidelines and regulations in Germany.

This Twinning Project is part of the European Neighbourhood Policy (ENP) and the related Eastern Partnership (EaP). In my view, our Twinning can be seen as another important step to further improve the economic and institutional conditions in Ukraine. The project results will hopefully have an impact on the sector cooperation on energy efficiency between Ukraine and EU.

The implementation of the project will also have a positive impact in regard to our bilateral economic relations. I my view, in particular German small and medium sized enterprises can contribute to the process of modernisation of the Ukrainian industry and infrastructure. This Twinning project further improved institutional conditions in Ukraine as one element of the important framework conditions for increasing FDI. And investments of German and European technology for projects of energy efficiency might play a key role for the future economic development of Ukraine.

Since 1998, Twinning has proven to be a significant instrument to support institution building effectively in the whole spectrum of government administration. It enables the administrations of EU Member and Neighbour states to exchange experiences and to build up long-lasting partnerships. So far 11 Twinning-projects with German partners have been implemented in Ukraine. This is an impressive evidence of the close and effective cooperation between our two countries.

This Twinning Project provided know-how and experience of French and German experts to the State Agency of Ukraine for Energy Efficiency and Energy Saving (SAEE). In my view, more efficient use of energy resources is an important issue for Ukraine. The high potential to lower energy intensity is an indication of the enormous economic potential to be offered by an intelligent energy policy.

Therefore, I would like to thank all Ukrainian, French and German experts for their excellent work and assure that my ministry would like to continue a successful cooperation in the future.

Hartmut Röben, *German Federal Ministry of Economics and Technology, Head of Division "EU-Twinning incl. National Contact Point for Twinning, International Manager Training Programme"*

Dear distinguished Project Partners,

Ladies and Gentlemen,

For economic and ecological reasons, it is imperative to use our scarce natural resources and fuels more efficiently and more intelligently. Thus greater energy efficiency is the cornerstone of a safe and secure energy supply with reliable and affordable costs.

Many tools and measures for increasing energy efficiency are known. However, they have not been sufficiently applied and implemented. By energy is a significant competitive factor in production processes, it is important to reduce the correlation between economic growth and power consumption.

It was a great pleasure and honor for me to work nearly two years in the Twinning-Project "Improvement of the policy Framework in the Sphere of Energy Efficiency" as project leader for the French-German-Consortium on behalf of the German Federal Ministry of Economy and Technology. This interesting and diverse task challenged the whole project-team during the entire period in order to fulfill the ambitious work plan. Eventually we could achieve important mandatory results and benchmarks, which will allow Ukraine to follow the European way in the field of energy efficiency.

Within this Twinning Project our experts reviewed, discussed and prepared for submitting a lot of various issues and requirements of energy efficiency together with the counterparts of SAEE. We worked successfully on a lot of aspects e.g. technical standards and regulations concerning labeling and ecodesign, methods for energy-audits and energy management, the process of the NEEAP and the Law on Energy Efficiency and finally capacity building.

I'm sure that, this project is a cornerstone of the Ukrainian process, to establish an operational system of effective legislation and policy aligned to the requirements of EU legislation.

I want to thank most warmly

the EU-Delegation for funding this project and for a professional and pleasant accompaniment,

our counterparts from the State Agency on Energy Efficiency and Energy Saving of Ukraine (SAEE) for the pleasant, confidential, professional and reliable cooperation,

PAO for the helpful support and advice,

all experts from Germany and France for their profound work, know-how-transfer and flexible working methods,

the whole project-team in Kiev, personally the RTA and our valuable assistants for all work and personal involvement during the whole project,

adetef-office in Kiev for some important organizational and administrative support,

the management-office in Berlin for a perfect organization, documentation and budget-management,

and last but not least all people and institutions, who helped us in a certain way and contributed something to the success of this Twinning Project.

I feel certain that this Twinning Project and its results are a valid basis for further relations, in a spirit of partnership and to the benefit of everyone involved. I do hope that SAEE has gained advantages and benefits from this Twinning Project and will do so in future, too, in order to assist Ukraine to maintain the path of reducing energy consumption and improving energy efficiency.

Yours sincerely,

Harald Hoeflich
Project Leader

Ministry of Environment, Climate Protection and the Energy Sector
of the State of Baden-Wuerttemberg, Germany

3. State Agency of Energy Efficiency and Energy Saving in Ukraine – overview

The State Agency on Energy Efficiency and Energy Saving of Ukraine (here and after – the SAEE) was established by the President of Ukraine in 2011 through the reorganization of the National Agency of Ukraine on Ensuring of Efficient Use of Energy Resources.

The SAEE is headed by the Chairman, who is appointed on the position by the President of Ukraine.

Main tasks of the SAEE are:

- performance of the state policy in the spheres of efficient use of energy resources, energy saving, renewable energy sources development and alternative types of fuels;
- state control in the sphere of efficient use of fuel and energy resources;
- securement of increasing the share of renewable energy resources and alternative types of fuel in the energy balance of Ukraine.

According to the functions conferred by the President of Ukraine the SAEE, among other things, provides:

- energy audits system functioning and the energy management system implementation;
- functioning of the energy labeling of household electric appliances system;

Also the Agency, within its competency, is:

- participating in establishing cooperation between Ukraine and the European Union and the adaptation of national legislation to the EU legislation;
- conducting informational activities for popularization of economic, environmental and social benefits of efficient use of fuel and energy resources, renewable energy and alternative fuels, participating in educational activities in these sphere, and so on.

The SAEE implement its powers directly or through its regional offices in the Autonomous Republic of Crimea, regions, cities of Kyiv and Sevastopol. The total number of the SAEE employees is 432 persons, 303 of them – employees of territorial bodies of the Agency.

- The main legal acts in the energy efficiency sphere are:

- The Law of Ukraine “On Energy Saving”
- The Law of Ukraine “On heating”
- The Law of Ukraine “On Alternative Energy Sources”
- The Law of Ukraine “On Alternative Fuels”
- The Law of Ukraine “On combined heat and power (cogeneration) and using of the Waste Energy Potential”
- The Law of Ukraine “On Electricity” and so on.

Also, in this sphere acts about 100 decrees and orders of the Government.

4. Twining project overview

General background of the Twinning project

The overall objective of this twinning project is the establishment of an operational system of effective legislation and policy in the sphere of energy efficiency aligned to the requirements of EU legislation, which will primarily facilitate the creation of a self-enabling environment for the overall reduction of energy consumption and consumption of the primary energy resources.

The project aims to harmonize selected national legislation in the field of energy efficiency with the relevant EU Acquis / standards and to prepare the basis for its implementation. Alongside legislation, the project aims to strengthen the tools and mechanisms based on best-EU practice in order to maximize the impact of the new legislative framework.

Such tools are: increasing the use of incentive schemes boosting energy efficiency, energy audits, introducing energy management practices and partly awareness-raising on energy efficiency, efficient monitoring of energy efficiency and application of the energy efficiency standards on energy-efficient equipment.

The limited impact of state policy in energy efficiency over the past years has revealed the need to revise policy implementation tools and administrative structures.

Therefore component 3 of the twinning project focuses on institution and capacity building thus supporting enhanced implementation of EE policy in Ukraine and adaptation of organizational structures of the beneficiary to peers in EU MS.

The project supports the implementation of the chapter “Energy” of the Partnership and Cooperation Agreement from 1998 (PCA), which constitutes the basis for EU-Ukraine co-operation in this sector. Particular attention will be placed on energy consumption, in order to prevent or minimize the environmental damage resulting from these activities, on formulation of energy policy, improvement in management and regulation of the energy sector in line with a market economy, promotion of energy saving and energy effectiveness and improvement of energy technologies in supply and end use.

The European Neighbourhood Policy (ENP) was developed in 2004, with the objective of building a deeper relationship with its neighbours to the East and South, supporting their reform processes. The overall goal of ENP is to foster the political and economic reform process, promote closer economic integration, legal and technical approximation and sustainable development..Ukraine is one of the priority countries of the ENP. This twinning project helps to fulfil the priorities of the ENP and then particularly in strengthening democracy and governance.

The core element of the European Neighbourhood Policy is the bilateral ENP Action Plans agreed between the EU and each partner. These set out an agenda of political and economic reforms with short and medium-term priorities. The Joint European Union and Ukraine Action Plan was adopted in 2004.

The Association Agenda is a new practical instrument, which aims at preparing for and facilitating the entry into force of the EU-Ukraine Association Agreement. The Association Agenda was adopted on 23 November 2009 at the EU – Ukraine Cooperation Council. It sets out key priorities for reforms, which Ukraine should

address in the coming years

In order to implement policy priorities defined by ENP Action Plans / Association Agenda a dedicated financial instrument - European Neighbourhood Policy Instrument (ENPI) – has been set by the European Commission. The indicative financial envelope for Ukraine under the National Indicative Programme for the period 2011-2016 is € 470 million.

The programme finances the implementation of three priorities: good governance and the rule of law; facilitation of the entry into force of the EU-Ukraine Association Agreement; sustainable development. The EU has committed € 70 million to assist Ukraine in its declared goal of utilizing the country's significant energy efficiency potential. The corresponding Financing Agreement, signed in December 2009, includes the allocation of € 63 million towards the implementation of a Sector Policy Support Programme on energy efficiency and € 7 million of accompanying assistance.

The Joint European Union and Ukraine Action Plan foresees cooperation in the specific sectors, including transport, energy and environment, where one of key areas is related with the Energy policy convergence, especially in the field of energy efficiency and the use of renewable energy sources.

One of the priority measures is linked with the enhancement of energy efficiency and the use of renewable energy sources, including reinforcing the relevant institutions.

EU – Ukraine cooperation is also envisaged in the context of Ukraine's signature of the Energy Community Treaty. By joining the Energy Community, Ukraine undertakes to implement certain provisions of the EU Acquis communautaire concerning electricity, gas, environment, competitiveness, renewable energy sources and energy efficiency into its national legislation.

Most part of the EU financial assistance is provided via the Sector Policy Support

Programme signed by the EU and Ukraine in December 2009. The SPSP ("Support to the implementation of Ukraine's Energy strategy in the area of energy efficiency and renewable sources of energy") aims at supporting Ukraine in taking decisive steps towards energy efficiency and the assessment of use of renewable energy sources.

EU and Ukraine work together to improve legal framework for energy efficiency – 2012/2013

The State Agency on Energy Efficiency and Energy Saving of Ukraine (SAEE) and its European partners launched the

Twinning Project "Improvement of the Policy Framework in the Sphere of Energy Efficiency and its Approximation to the Requirements of the EU Legislation".

Representatives from EU and Ukrainian authorities, media and public learnt of the importance and necessity to improve the legal framework of energy efficiency.

Building an energy efficient economy has become a priority for the EU and Ukraine. With the world's rising energy prices, increasing energy efficiency means reducing energy bills. It is also the cheapest way to reduce dependence on imported fossil fuels meaning better energy security and greater independence. Increasing energy efficiency also means greater economic competitiveness: for some energy demanding industries, their very own future is at stake. Last but not least, the future of our shared planet is concerned. Increasing energy efficiency will reduce CO2 emissions, mitigating by this way the global warming.

This Twinning project aims to establish an operational system of effective legislation and policy in the sphere of energy efficiency, aligned to the requirements of EU legislation. The overall reduction of energy consumption and wastage, and the consumption of the primary energy resources is the ultimate goal. The project will help harmonise selected national legislation with the relevant EU Acquis and prepare its implementation as

per the provisions of the Energy Community Treaty, which Ukraine joined in February 2011. Finally, it will look at EU best practice to strengthen tools and mechanisms to maximize the impact of the new legislative framework with aim to facilitate the implementation of fort EU directives:

- DIRECTIVE 2006/32/EC – "on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC"
- DIRECTIVE 2010/31/EU – "on the energy performance of buildings"
- DIRECTIVE 2010/30/EU – "on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products"
- DIRECTIVE 2009/125/EC – "establishing a framework for the setting of ecodesign requirements for energy-related products"

The German-French Consortium, headed by the German Federal Ministry of Economics and Technology (BMWi), supported during 22 months the State Agency on Energy Efficiency and Energy Saving of Ukraine with a team of experts for more than 600 expert days. This common work allowed the elaboration and adoption or in course of adoption of the main legal energy efficiency framework in Ukraine:

- Law of Ukraine "On efficient use of fuel and energy resources" – on adoption,
- National Energy Efficiency Action plan – on adoption,
- On 7 August 2013, the Cabinet of Ministers of Ukraine passed Resolution No 702 «on approval of technical regulations on energy labelling».

The qualification of the SAEE's staff was strengthened by the organisation of the several seminars, conferences and six study visits to the member stats country administration. A database and a web site (http://www.twinning-energy.com) were created in order to facilitate the follow up of the twinning.

5. Component 1 – summary of achievements

Activity – Review of specific Ukrainian (draft) laws and legislation

The laws reviewed under this activity where the

- "Law of Ukraine – On efficient use of fuel and energy resources" the
- "Law of Ukraine – On energy efficiency of residential and public buildings" and the
- "Law of Ukraine – On commercial measurement – accounting of thermal energy, cold (drink) and hot water in heat supply, central water supply"

The draft Law of Ukraine on efficient use of fuel and energy resources, which has been revised several times, has been discussed in detail. Comments suggestions and recommendations for the improvement the draft law in different states in the improvement process were given to approve internally by SAEE and to submit for the official approval process.

Intensive discussions took place with experts of SAEE regarding the existing and planned Ukrainian legislation in the field of energy efficiency and the respective European requirements of the EU-Directive 2012/27/EU on energy efficiency (EED), the energy performance of buildings (Directive 2010/31/EU) (EPBD) and the EU-Directive 2010/30/EC on energy labelling.

The analysis of the "Law of Ukraine – On energy efficiency of residential and public buildings" showed that it has the character of a framework law. Concrete measures and detailed procedures, for which recommendations were given by the participating experts are therefore to be addressed in secondary legislation, standardisation etc.

Concerning the elaboration of the "Law of Ukraine – On commercial measurement - accounting of thermal energy, cold (drink) and hot water in heat supply, central water supply" according to the EED requirements the following main aspects were discussed:

- The implementation of existing regulations
- The application of suitable methods to measure energy consumption and of rules for factoring energy costs

Activity - Comparative Analysis of Ukraine's primary legislation and European Union directives on energy efficiency

An overview on European legislation with direct or indirect respect to the Twinning project was prepared and presented to SAEE. Subsequently it was decided to concentrate on the most relevant European Directives, which are: the

- Energy Efficiency Directive, the
- Energy Performance of Buildings Directive and the
- Labelling Directive

These directives have been presented and explained to SAEE. In addition, a table was prepared, in which the current or draft Ukrainian legislation was linked to these three directives.

Elements, where the Ukrainian (draft) differs from the requirements of the EU directives were identified, presented to SAEE and assistance was given to modify the laws accordingly.

The following presentations were given by German and French Experts as part of sub-component 1.1:

- Presentation about national implementation of the EPBD- Directive (German example)
- Presentation about requirements of the EED-Directive
- Presentation “Energy-efficiency directive - the German and the European approach”
- Presentation “European Harmonisation in the Construction Sector”

Sub-Component – Incentive schemes for promoting energy efficiency

Activity - Assessment and mission gap analysis

An important result of this sub-component is that the main barriers to energy efficiency in Ukraine are:

1. Low energy prices an
2. The economic uncertainty.

1.: Low energy prices:

Even with very strong and well designed incentive programmes, these barriers will be difficult to overcome. The barrier of low energy prices can only be overcome by the reduction of subsidies and introduction of energy taxes. The income from energy (fuel) or electricity taxes can be used to offset the burden of (some) taxpayers (example: Germany where the income from the tax is paid into the social security system thus increasing the cost of energy but reducing the cost of labour). Rebates for some industries or groups of the population are possible.

2.: Economic uncertainty:

Even measures, which are economically feasible and promise a reasonable payback are often not taken. The reasons given for this were:

- The time horizons are short, investors demand a payback within few years.
- Many efficiency investments do have a reliable, but not a quick return. Due to high investment costs, the payback period is often ten years or longer, for which credit financing is hardly available in Ukraine.
- There is an insecurity as to the duration of the framework conditions.
- The transaction costs for planning, designing, financing and licensing are often a barrier.

The main areas, where low energy efficiency is prevalent and where possible incentive schemes would be most effective have been identified as:

- The majority of power plants are old, inefficient and in part also badly maintained. Most of the necessary improvements and rehabilitations would need costly investment measures. There are also transmission losses downstream of the power plants through technical losses and by consumption of electricity unpaid for. In the case of coal-fired power plants, efficiency gains are also possible by more effective coal enrichment / coal washing.
- District heating: The boilers are mostly inefficient and there are considerable losses in the heat distribution piping systems. The run-down installations need costly rehabilitations or have to be replaced by new ones. The municipalities do not have the necessary investment funds. Beyond that, there are also organisational problems due to uncertainties as to the ownership of housing.
- Buildings: There is a lack of appropriate operational standards. The implementation of standards is possible only by a comprehensive system of audits, licensing and inspections. The retrofitting of dwellings and their heating systems is often not affordable by the owners/tenants. (A special problem is the rehabilitation of prefabricated slab buildings.)

The discussion of possible incentives for energy efficiency suitable for the Ukraine showed the following main outcomes:

- Pricing and subsidies: Cost-covering prices for energy have not yet been achieved in Ukraine. There are open subsidies and hidden subsidies. In member states subsidies must be justified according to the Rules on State Aid, sometimes to the satisfaction of the European Commission. In view of the social consequences, this goal cannot be achieved over night. Rather there must be a coordinated program which respects the affordability of energy, relieves the state budget and keeps only targeted subsidies, where persons or enterprises deemed worthy of support receive energy at prices below the cost-covering level. Since the cost of energy is the most important driver of energy efficiency, it is standard practice in Europe to tax certain forms of energy, thus raising the price above the market level.
- Energy Efficiency Standards and their Enforcement: The promotion of energy efficiency besides and beyond the incentives of pricing can be done by setting and enforcing standards for energy consumption and energy efficiency. Such standards are considered useful and applied in all EU states for various purposes. There are many EU policies and directives giving and demanding such standards. Examples would be: - Electricity consumption of household appliances - Energy consumption of buildings, especially of heat and many more.
- Energy audits: (see sub-component 1.3)
- Voluntary Agreements: Voluntary Agreements are strictly speaking not an incentive. Rather they are a form of making targets and standards obligatory without recourse to a direct regulation see activities 1.2.11 to 1.2.15).
- Energy-intensive industry and large combustion units: There is a wide agreement in Ukraine that there are large potentials for energy saving in heavy industry and power plants. There seem to be investments, which would be profitable under present conditions and reduce the energy consumption considerably. Such investments are large and often long-term, thus needing a stable policy and legal environment, and long-term credit. A long-term credit facility with institutional mechanisms allowing a technical-economical assessment of the investment plans and controls of their progress could be an incentive, which would perhaps trigger at least those investments, which should achieve profitability already under present conditions, but are not undertaken because of lack of money. To become effective, long-term credit needs of course a stable economic and regulatory environment.
- 6. Buildings: For new buildings, the method of choice is of course to set demanding standards and to oversee their implementation. For the existing buildings, the basis for an economic behaviour and for energy savings is the individual responsibility for energy consumption. The pre-condition of this metering. According to the officials interviewed, metering is progressing and is obligatory at least for new buildings. The most challenging problem is the promotion of energy efficiency within the stock of existing buildings as the energetic refurbishment is very costly and the owners and tenants usually lack the investment money for such improvements. There is also the legal view that the state cannot simply tighten licensing conditions on which the owner/operator has relied. For this reason, it is common practice to support the energetic modernisation of existing buildings by public money. On this subject it was recommended to take a closer look at the experience of the public German KfW-Bank in the promotion of energy efficiency in existing buildings by setting targets and by financial aids.
- 7. District heating: The modernisation of district heating plants is a priority in any energy efficiency policy for Ukraine. The Ministry of Construction is implementing a program for the improvement and modernisation of district heating, ranging from investments in more efficient boilers to installation of metering systems. The investments in energy efficiency are costly: State-of-the-art boilers are expensive, the repair and

improvement of the vast piping systems is costly and the equipment of houses and apartments with meters and regulation equipment demands also a lot of money. The institutional situation is complicated, because in this field, the national government, the regions and often the municipalities have to cooperate and to contribute investment money. A big technological step forward would be the general introduction of combined heat and power (CHP) in heat generation. The costs for such an investment include not only the steam generator and the turbines, but also the connections to the grid. The government may want to consider as an incentive a special feed-in tariff for electricity generated by CHP. The level of such a tariff need not be as high as the feed-in tariffs for renewable energies. The government could also consider a negotiated agreement with all the owners/operators of district heating systems, setting up a moderate but binding schedule for their modernisation or replacement. (In this context, a look at the German experience may be useful. Germany has a special law and special incentives for promoting CHP in general, not focussed on district heating. The main promotional instruments are the obligation for grid operators to accept electricity from such installations and to pay a certain surcharge on the electricity thus produced. There are also investment aids.)

- Energy contracting and ESCOs: Neither energy contracting nor ESCOs can be considered strictly speaking an incentive. The incentive for the energy consuming enterprise consists rather in the fact that the energy services it needs could be provided at less cost. The implementation of such incentive contracts does not necessarily need an ESCO. What is necessary, however, is a legal framework, which facilitates energy performance contracting. Strategies for promoting energy performance contracting in Ukraine could be: a) the adjustment of the legal framework in order to facilitate such contracts, b) the encouragement and perhaps even obligation of public utilities to offer such contracting and c) the creation of some model ESCOs in an industrial zone or in a commercial city, with public support. For public energy consumers, the advantage of energy performance contracting is often seen in the fact that it allows to shift the burden of financing the efficiency investments to a private company.
- Credit lines with concessional terms: The provision of loans with better than market conditions can be a reasonable instrument to promote investment in energy efficiency. This kind of subsidy needs of course a justification, which usually is seen in the fact that new and unexpected demands are placed on existing undertakings, in this case existing industrial plants and buildings. The design and implementation of such credit lines is a standard promotional action taken by the International Finance Institutions. In Ukraine there seem to be many energy efficiency investments technically possible and cost-effective, i.e. with a pay-back period of up to five years, which are still not undertaken. Whatever the barriers to such action may be, the offer of a long-term loan with a concessional interest rate may be an incentive, which tips the balance in favour of the energy savings investment. The company Ukresco is in effect handling such a credit line, which is refinanced by the EBRD and overseen by the SAEE.
- Efficiency in the use of motor fuels: A considerable share of the energy of Ukraine goes into road transport. There are many standards and incentives imaginable and practised in Europe. The administratively simplest and most effective incentive is to raise the prices of motor fuels by taxation. This is standard practice in all member states of the European Union. Other incentive programs, such as limitations of CO_2 emissions or premiums for scrapping old vehicles make sense only when applied to passenger cars.

Procurement and Voluntary Agreements – activities

Recommendations for the regulatory framework concerning public procurement in Ukraine:

In addition to the regulations already made in the Law "On Public Procurement" the following can be recommended in general:

Public procurers are bound to the rules of public procurement law, which should be: non-discrimination, equal treatment, transparency and competition. Those rules build the frame, in which aspects of energy efficiency can and should be taken into account.

- In the first place the performance specification provides a margin to involve ecological aspects in the procurement process. The performance specification can require a certain method of production, certain labels or other standards of energy efficiency.
- In the second place aspects of energy efficiency should be a highly weighted award criterion and mentioned as such in the call for bids.
- In the third place aspects of energy efficiency can be taken into account when the best offer is to be chosen. Instead of favouring the lowest purchase price, it is preferable to choose the product or service with the lowest life-cycle-costs (energy costs, maintenance costs, waste management costs) as the economically better one.

Recommendations for the regulatory framework concerning Voluntary Agreements (VA):

About Voluntary Agreements:

VA are not indispensable (only about half of MS have them)

- VAs can be categorised into three types: Completely voluntary agreements, Voluntary Agreements, but with an implied threat of future regulation and almost mandatory participation because of e.g. penalties if not conformed to
- Therefore the better name would be Negotiated Agreements

Requirements for Voluntary Agreements

- VA must be designed, negotiated and controlled by the state, which also must ascertain their effects. VA thus always need preparation and final control by a state administration.
- The implementation, operation and control of a VA should, however, be delegated to industrial bodies or consultant companies, who then have to report and prove its proper application.

- VA are practical for industries with a limited number of installations or participating enterprises. The measures for the residential and tertiary sector are hardly suitable for agreements, because of the great number of partners without a representation.

Incentives for Negotiated Agreements

- Threat of a not negotiated, demanding regulation
- A sector under pressure by government or public opinion because of e.g. environmental, health or energy security situation
- A public or private sector suffering from high energy costs
- Financial easing (1): Public funding of consultant work, including audits or Investment aids, long-term credits, soft loans, guarantees
- Carbon or energy tax with rebates

Road map for the implementation of Voluntary Agreements

The road map suggested in activity 1.2.14 is shown schematically in the following picture:

A	**Requirements regarding legislation**	
A1	Autharisation of body	
A2	Launch of monitoring and incentives	
B	**Preparation and Organization**	
B1	Identification of suitable partners	
B2	Identification of pilot action partner(s)	
B3	Negotiation with	
C	**Pilot Scheme**	
C1	Starting phase	
C2	Preliminary organisational evaluation	
C3	Operation period (and follow-ons)	
C4	Ex-post evaluation end negotiation for next phase	
D	**Further Schemes**	
D1	Starting phase	
D2	Operation period (and follow-ons)	
D3	Ex-post evaluation end negotiation for next phase	

The following presentations were given by German and French Experts as part of sub-component 1.2:

- The German Energy Agency and the Office for Implementation of the ESD
- Voluntary Agreements for the Promotion of Energy Efficiency
- Possible Incentives for Combined Heat and Power (CHP)

The following institutions were visited on study tours in France and Germany by members of SAEE:

Study Visit on Incentive Schemes (Germany) June 2013:

- Federal Ministry of Economics and Technology
- Center for trade promotion of the Chamber for trade of Potsdam
- Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
- Bank of investment of the State Brandenburg and Agency for the future of the State Brandenburg
- Energy Technology Initiative of the State Brandenburg
- KfW

Study Visit on White Certificates (France) in May 2013:

- ADEME – French Environment and Energy Management Agency
- National Department of Energy Efficiency Certificate – Ministry of Ecology, Sustainable development and Energy
- ATEE – Technical Association Energy and Environment Institution
- TOTAL and GdF
- Certification Body
- Site visit of an industrial site

Study Visit on Voluntary Agreements (Germany) November:

- Fraunhofer Institute for Systems and Innovation Research
- Agency for Energy and Climate Protection of the State Baden-Württemberg
- Institute for resources' efficiency and energy strategies
- Chamber of Commerce and Industry of Karlsruhe
- ebm-papst (fans and motors' company
- Association „Model Network of Hohenlohe for operational environmental protection and sustainable economy"
- Visit of the Scharnhauser Park (Policity, EU Concerto initiative)
- State Faction of the Association for local companies for Baden-Württemberg
- Institute of Energy Economics and the Rational Use of Energy
- Ministry of Environment, Climate and Energy Industry of the State Baden-Württemberg

Subcomponent 1.3: Energy Audits and Energy Management

I. Immediate Objectives of the Subcomponent

The Twinning Contract provided the main line of Objectives, the related activities and the achieved results.

Twinning Contract, Annex A1

Article 3 and 4:

- Energy Audits implementation scheme and associated legislation reviewed
- CEN standards on energy management standards transposed into Ukrainian Technical Regulations
- Legal and Regulatory framework for the provision of energy Demand-Side Management (DSM) developed
- Identification of the main obstacles encountered during the previous set up of Energy Audit System in Ukraine.
- Discussion with the policymakers about the possibility and the criteria's for setting up Mandatory Audits

The Subcomponent comprised both, Energy Audit and Energy Management (EnMS), although EnMS was not explicitly mentioned in the mandatory results as quoted above.

The European CEN Standards on Energy Audit (CEN 16247) and Energy Management (CEN 16001) were taken into account and proposed as far as they were still valid and not already superseded (e.g. CEN 16001) by the globally harmonized and approved ISO 50000 Standards.

Discussions with the responsible SAEE officers and experts took place during the whole implementation phase of the project and advice was provided during the meetings of the activities 1.3.1 through 1.3.13, through the Seminars on Energy Audit (February 2013) and Energy Management (October 2013) and during the Study tours in France and Germany where the respective experts were consulted and practical applications were demonstrated.

Ukrainian policymakers were involved through SAEE during the whole implementation phase.

The main obstacles of earlier implementation approaches were as well discussed within the seminars and it is assumed that the ISO Standards will help to overcome earlier obstacles and to allow a successful

implementation of Energy Audit and Energy Management within the Ukraine.

The following Activities were implemented through the following systematic sequence as already described in the Twinning Contract:

II. Assessment Missions and Gap Analysis of Energy Audit provisions within the Ukrainian Legal and Regulatory Framework

Ukraine Legal and Regulatory Framework

Law on Efficient Use of Fuel and Energy Resources

Based on the available information available upon the Draft «Law of Ukraine on Efficient Use of Fuel and Energy Resources», received in the English language version from the EU Delegation on April 18, 2013 and after the discussions with the SAEE experts this latest version of the Law Bill did not include a general obligation on mandatory energy audits for all types of organizations.

Article 14(1) of the draft Law reads that an «Energy Audit can be conducted on a mandatory basis or upon the initiative of economic entity».

Article 14(2) of the draft Law requires the Implementation of an Energy Audit as mandatory for defined number of sectors and cases:

- Natural monopolies
- Economic entities that apply for state support to implement energy efficiency measures funded from the state and local budgets (supported by financial incentives)
- Economic entities with at least 50% state ownership, and an annual energy consumption exceeding 1,000 toe;
- Economic entities seeking to conclude voluntary agreements in the area of efficient use of energy resources, with the 'central body of executive power responsible for implementation of the state policy in the area of efficient use of fuel and energy resources and energy saving';
- Budget funded entities, whose annual energy consumption exceeds 1,000 toe.

EU Directive 2012/27/EU

In Article 8 «Energy Audits and Energy Management Systems», the Directive 2012/27/EU defines the following obligations of Member States:

- To promote the availability to all final customers of high quality, cost-effective energy audits, which are:
  - Carried out in an independent manner by qualified and/or accredited experts according to qualification criteria;
  - Implemented and supervised by independent authorities under national legislation.
- To put in place a scheme to assure and check the quality of the energy audits carried out by energy auditors;
- To establish transparent and non-discriminatory minimum criteria for energy audits (defined in Annex VI of the Directive);
- To ensure that enterprises (except SMEs) carry out an energy audit at least every four years;
- Energy audits may stand alone or be part of a broader environmental audit;
- Energy audits may be part of an energy or environmental management system, certified according to relevant European or International Standards;
- To develop programmes to encourage SMEs to undergo energy audits and the subsequent implementation of recommendations from these audits;
- To encourage training programmes for the qualification of energy auditors.

One central aspect of these stipulations is that enterprises that are not SMEs shall have the mandatory obligation to carry out an energy audit, as defined in Article 8(4) of the Directive:

«Member States shall ensure that enterprises that are not SMEs are subject to an energy audit carried out in an independent and cost-effective manner by qualified and/or accredited experts or implemented and supervised by independent authorities [...].»

Recital 24 of the Directive, takes a reference is to European and international standards which should be taken into account when implementing mandatory energy audits, such as: EN ISO 50001 (Energy Management Systems), or EN 16247-1 (Energy Audits), or, if including an Energy Audit, EN ISO 14000 (Environmental Management Systems).

Article 16(1) of the Directive, finally, stipulates that:

«Where a Member State considers that the national level of technical competence, objectivity and reliability is insufficient, it shall ensure that, [...], certification and/or accreditation schemes and/or equivalent qualification schemes, including, where necessary, suitable training programmes, become or are available for providers of energy services, energy audits, energy managers [...].»

Conclusions

Primary Legislation

The recent Draft Law on Efficient Use of Fuel and Energy Resources only partially complies with the stipulations of Article 8(4) of Directive 2012/27/EU, that 'enterprises that are not SMEs are subject to an energy audit carried out in an independent and cost-effective manner by qualified and/or accredited experts or implemented and supervised by independent authorities ensure that enterprises (except SMEs) carry out an energy audit, at least every four years'. The requirements of the EU Directive which refer to energy audits as part of a broader environmental audit or of an energy or environmental management system are not reflected in the draft law, neither are there any stipulations which would foresee programmes to encourage SMEs to undergo energy audits and to implement the recommendations from these audits.

This means that the new Law on Efficient Use of Fuel and Energy Resources needs to be harmonized with stipulations of Directive 2012/27/EU in order assure compliance and consistency.

Secondary Legislation

Government regulations on Energy Audits

There are a number of regulations which were adopted in the Ukraine and which are currently in force:

- Order of the State Committee of Ukraine for Energy Conservation no. 49 dated 12.05.1997 "Transitional regulation on the procedure for conducting energy survey and certification of specialised organisations for conducting it";
- Order of the State Committee of Ukraine for Energy Conservation no. 27 dated 09.04.1999 "Regulation on the procedure of organisation of energy surveys";
- Order of the State Agency on Energy Efficiency and Energy Saving of Ukraine (SAEE) no. 28 dated 21.03.2012 "on approval of the Agreement for cooperation between the specialised organisation, certified by SAEE for conducting energy audit and the Central Energy Audit Team of SAEE";
- Order of the State Agency on Energy Efficiency and Energy Saving of Ukraine SAEE no. 56 dated 20.05.2010 "Standard procedure – General requirements for organising and conducting energy audit".

In the course of preparing the Seminar on Energy Audit in February 2013 the selected and translated Ukrainian Standards and legislation were discussed.

It turned out that many of them are still in force as they were not withdrawn officially but not anymore in practical use.

It is quite obvious that these procedures and standards were very elaborate, fine-structured and detailed. They try to provide very detailed procedural solutions for many as possible assumed cases of organizations, processes and sectors.

The Standard 4713:2007 on Procedures and Requirements for Organizations of Works in Industrial enterprises have a proper structure of Standards with the respective systematics, chapters and contents. As example for the quite detailed structure and standard procedure Chapter 5.4 provides some insights where 6 different types of Energy Audits are described and the different ways to conduct them. All other and subsequent chapters need to meet similar degree of detailed description in order to keep the whole Standard Procedure document consistent.

The Order on the Standard Procedure 'General Requirements for Organizing and Conducting Energy Audit', No. 56 dated on May 2010, follows this format and provides correspondingly detailed descriptions and this document is comprising 85 pages including e.g. a number of examples, data tables and evaluation schemes.

It is obvious that these detailed procedures pose a challenge to any auditor if all these steps should be met

in all cases and specific situations.

It should be reflected and discussed to allow more flexibility in proceeding Energy Audit in order to make it broadly applicable and cover any realistic case in pragmatic way. Quality criteria and assurance should be well-kept.

European and international standards for Energy Audits

According to Recital 24 of Directive 2012/27/EU „Energy audits should take into account relevant European and International Standards, such as EN ISO 50001 (Energy Management Systems), or EN 16247-1 (Energy Audits), or, if including an Energy Audit, EN ISO 14000 (Environmental Management Systems)".

In order to further facilitate the implementation of this recommendation, the EU Commission has issued Mandate M/479 to CEN / CENELEC and ETSI to elaborate standards regarding energy auditing (relating to Directive 2006/32/EC). These standards include:

- EN 16247-1: Energy audits – Part 1: General requirements
- prEN 16247-2: Energy audits – Part 2: Buildings (draft)
- prEN 16247-3: Energy audits – Part 3: Processes (draft)
- prEN 16247-4: Energy audits – Part 4: Transport (draft)

On the international level, ISO is currently developing standard ISO/CD 50002 «Energy audits», which will essentially reflect the stipulations of the EN 16247 series.

Comparative Assessment for Standards for Energy Audits and Conclusions

Based on a first comparison of DSTU 4713:2007 with EN 16247-1 (general requirements) and prEN 16247-3 (processes), it appears that:

DSTU 4713:2007 and EN 16247-1 show many parallels in structure and contents. Examples are e.g. the quality requirements and the energy audit process / procedures defined in both documents.

On the other hand, there are also many differences, which mainly refer to details, like, e.g., the exact scope of energy audits (as defined in the process / procedures of energy audits) and other specific requirements. In general, DSTU 4713:2007 appears to be more prescriptive than EN 16247-1.

Similar parallels and differences exist between DSTU 4713:2007 and the draft standard EN 16247-3 (processes). The list of data to be collected, with regard to production processes, is more detailed in prEN 16247-3, while the measurement plan stipulated in prEN 16247-3 is more comprehensive, yet less prescriptive with regard to the measurement plan.

Conclusion:

As conclusion, it appears that the gap between the existing Ukrainian National standard and the international Standards such as the European EN 16247 series mandated and recommended by the European Commission or the more recent ISO Standard 50002 can be closed and that they can be treated in a compatible way.

The CEN Standard 16247 series or the ISO 50002 could be used as the mandatory internationally harmonized Standard being part of the future secondary legislation in the Ukraine and the existing Ukrainian Standards can be used as Guidance for those organizations, sectors and processes where they fit and can be applied in a meaningful way.

III. Assessment Missions and Gap Analysis of Energy Management provisions within the Ukrainian Legal and Regulatory Framework

Ukraine Legal and Regulatory Framework

Law on Efficient Use of Fuel and Energy Resources

The latest Draft of the Law on Efficient Use of Fuel and Energy Resources includes some provisions regarding «Energy Managment».

In accordance with Article 13(1) of the draft, implementing an Energy Audit shall be mandatory for all enterprises and other organisations with an annual energy consumption of > 5,000 toe.

Article 13(3) of the draft requires that:

- Energy Management shall be introduced in accordance with relevant national and international standards;
- Enterprises and other organisations which have implemented Energy Management attested by the procedure established by SAEE, shall not be subject to mandatory Energy Audits;
- The procedure for implementation of Energy Management shall be established by the Cabinet of Ministers of Ukraine.

The requirements of Article 13(3) are all in line with the requirements of Directive 2012/27/EU, they go even goes beyond of what is required according to the Directive.

Secondary Legislation

Government regulations in the field of energy management

In contrast to various regulations («Orders») in the field of energy audits, there is currently no secondary legislation in force with regard to energy management.

In accordance with Article 13(3) of the draft Law: «the procedure for implementation of Energy Management shall be established by the Cabinet of Ministers of Ukraine.»

Recommendations for future Secondary Legislation on Energy Management

In order to comply with the requirements of Directive 2012/27/EU (and its transposition by the new Law on Efficient Use of Fuel and Energy Resources), the future secondary legislation should include at least:

- Mandatory guidelines for the implementation of energy management systems, referring to relevant standards, in particular the new national standard equivalent to EN ISO 50001, including minimum requirements;
- Rules for the certification of energy management systems;
- Rules for the qualification and accreditation of organisations entitled to certify energy management systems;
- Guidelines for providing incentives to SMEs for implementing energy management systems.

National Ukrainian standards for Energy Management

Currently, the following Ukrainian national standards exist:[1]

- DSTU 4472:2005 «Energy saving. Energy management systems. General requirements.»
- DSTU 4715:2007 «Energy saving. Energy management systems of industrial enterprises. Composition and scope of works at the stage of elaboration and implementation.»
- DSTU 5077: 2008 «Energy saving. Energy management systems of industrial enterprises. Audit and control of the efficiency of operation.»

[1]For this analysis, English translations of DSTU 4472/2005 and DSTU 5077:2008 were available.

All these standards are of voluntary application.

Conclusion:

As conclusion, it appears that the gap between the existing Ukrainian National standard and the international Standards such as the earlier EN 16001 and the meanwhile harmonized EN ISO 50001 series mandated and recommended by the European Commission can be treated in a compatible way.

The ISO 50001 could be used as the mandatory internationally harmonized Standard being part of the future secondary legislation in the Ukraine and the existing Ukrainian Standards can be used as Guidance for those organizations, sectors and processes where they fit and can be applied in a meaningful way. They can be of add-on support for the ISO Standard 50004 Guidance on the Implementation.

IV. Harmonized ISO Standards on Energy Audit and Energy Management

Relationship Energy Audit and Energy Management

Energy Audit

Energy Audit is a systematic compilation, measurement or estimation of energy resource and consumption data and the assessment of the Energy Profile of an Organization. The Energy saving potential and possible measures will be discussed. Recommendations will be developed to reduce the energy consumption and organizational measures as well if they can contribute accordingly.

Insofar Energy Audit is a Snapshot of the Energy situation within an organization, a technical Report and proposed measures for improvement. If it will be accepted, measures implemented and improvement achieved, this will be up to the decision level /Top Management of the organization.

In a negative situation, nothing would happen because of e.g. lack of financial means, organizational barriers, delays etc.

Normally the gains and the energy and cost reductions are clearly visible and appropriate steps should be expected.

Energy Management

Energy Management has a basic component which nearly the same like an Energy Audit. But Energy Management requires much more. The implementation and operation of the system, the Monitoring and

Improvement, the Recording and Reporting and establishing an Energy Policy of the organization with Energy saving objectives over defined time periods and the continual improvement process.

Insofar Energy Management is leading much further and it is a process of internalization within the organization, supported by the Top Management, put into practice by the coworkers and continually improved over time. This assures a proper implementation compared to an Energy Audit.

V. CEN Energy Audit Standard 16247 and ISO Standard 50002

The CEN Standard 16247 is still in force and should be recommended at first place. The respective ISO Standard is still under voting. The approval will be expected and then an approval process according to the Vienna Agreement will lead to superseding of the CEN Standard if the sufficient voting majority will be reached.

Generally the approved ISO Standards are higher significance and relevance because they are globally harmonized and by that they are mutually recognized as Quality Certificate and advanced Managerial Qualification of the organization and their products or services.

The structure and contents of both Standards are quite similar because the CEN Standard 16247 served as a template when ISO 50002 was elaborated. Most contents were taken into account and the Standard was more generalized so that most ISO Member Organizations might adopt this Standard as a globally harmonized one.

VI. ISO Standard 50001 Energy Management Systems (EnMS)

Since July 2012 the ISO Standard 50001 Energy Management Systems (EnMS) came into force and it caused a considerable interest and involvement of quite a number of enterprises and organizations to implement it. This is mostly due to the drastically increased energy prices in those countries which have a full-cost coverage for energy productions and fuels.

Furthermore, financial incentives like tax reductions for energy intensive industries and exemptions from the Energy Feed-In Tariffs (Regulation on the Promotion of Renewable Energy) leads in Germany to further increased demand to introduce an Energy Management System within their respective organizations.

In most cases an Energy Audit is the start-off for such a decision to introduce an Energy Management System. This might clearly show the potential energy and cost savings when introducing an EnMS. If there

are sufficient energy saving potentials available, a change or modifications/upgrade of the technical systems and products is feasible, economically meaningful and the implementation can be reached in shorter terms, then such a decision will be strongly supported.

The principle concept is a systematic, fully described and recorded process upon data, all relevant technical and system-related information and energy users within the organizations. A so-called Baseline needs to be established and the goals for energy savings, kind and amount of primary energy, fuels and electric energy are to be determined. So the assessment, the recommendations for improvement and the specified measures within the technical systems will be worked out. The system –and organization-related changes and modifications in the organization structure and process need to be implemented. The feed-back, the training of personnel, the functional control and monitoring are also included in this full- scale process. The successful accomplishment of the self-defined objectives in Energy savings need also to be measured and assessed.

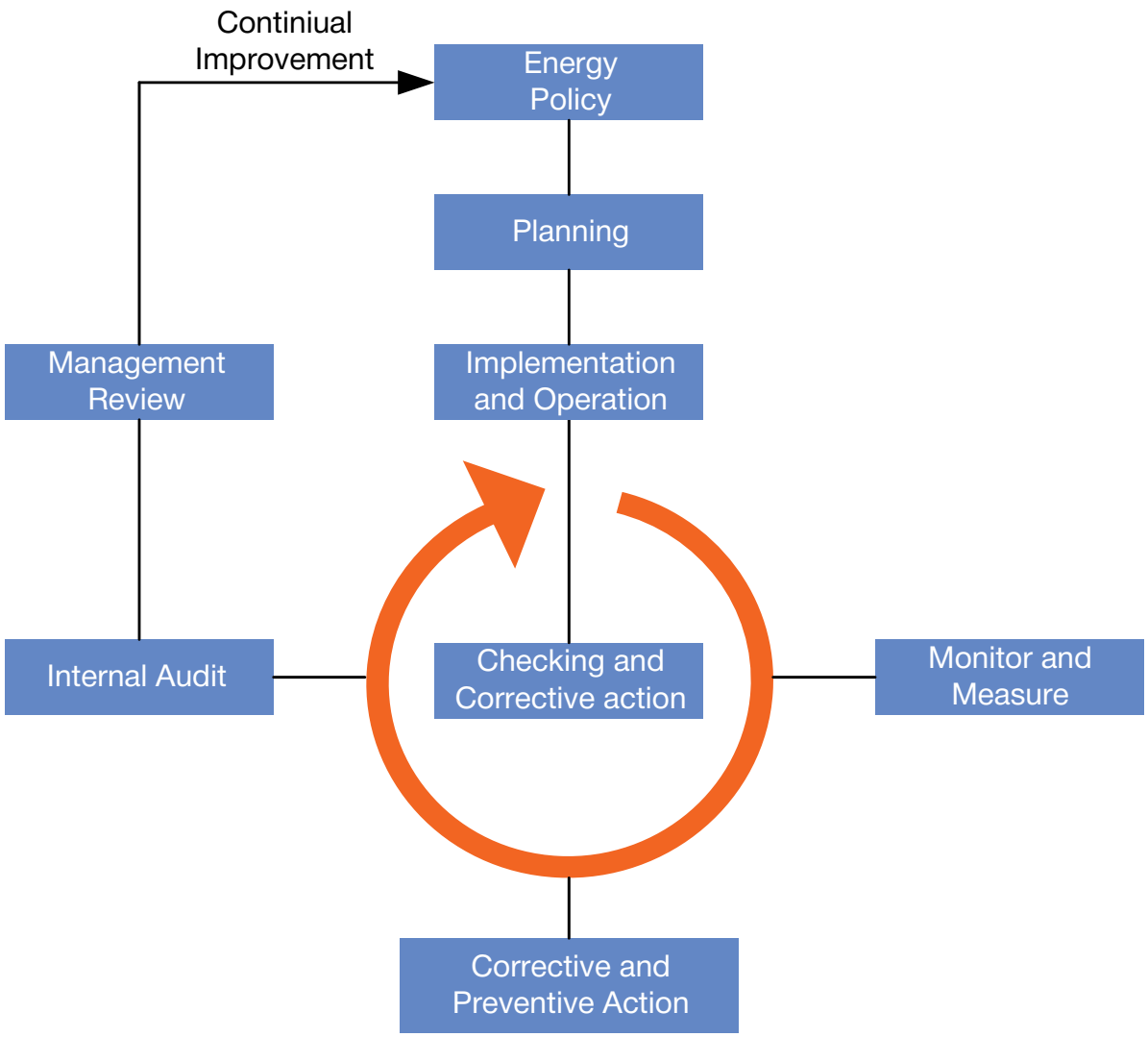
Furthermore a continual improvement process needs to be installed. The next level of objectives for further energy savings will be determined by the organization itself and the monitoring of progress and achievement to be performed.

The following scheme illustrates the principle and cyclic process of Energy Management:

Energy Management System Model

Plan, DO, Check, Act - PDCA - Cycle

(Source: ISO Standard 50001 - 2011)



The following Steps are included within this process:

1. Plan

Establishing energy-saving targets, determining the strategy, identifying measures and responsibilities,

providing the necessary resources, preparing the action plan.

2. Do

Establishing management structures for maintaining a continuous process, undertaking improvement measures (for example efficient technologies/procedures).

3. Check

Reviewing the level of target achievement and the effectiveness of the EnMS, collecting new ideas via

Energy audits, if necessary, consulting an external expert.

4. Act

Strategic optimisation by consolidating the current energy data, audit results and new information, evaluating the progress with the help of current energy market data, deriving new objectives.

Activities can take place in parallel; even the decision on which to begin an activity depends on the conditions in the respective company.

When compared to selective measures (ad-hoc energy management), continuous application of this process clearly reduces the energy-related costs of a company.

An external Audit and Certification may be affiliated. In case of full compliance with the ISO 50001 a certificate and a seal / logo will be handed over.

So it can be summarized that the advantages for the organizations are as follows:

- Considerable cost reduction
- Short payback time
- Implementation and Optimization of the system and management
- Sustainable management and production with respect to the Environment and economic future development

This will lead to a number of follow-up advantages for these organizations and enterprises such as:

- Increased competitiveness on the national, EU common market and global markets
- Highlighting the potentials for innovation, quality management and quality products
- Improved access to B2B markets and system manufacturers such as car producers
- Downstream Marketing will be supported by an established Management system

The ISO Standard 50001 on ‚Energy Management' has a number of structural similarities with ISO 14001 ‚Environmental Management', ISO 9000 ‚Quality Management' and the EU- EMAS-Eco Management and Audit Scheme.

Those organizations which have already one of such a Management Systems established will have a facilitated access and implementation process.

The ISO 50001 Energy Management System will also offer opportunities for the co-workers in terms of qualification and closer involvement of the technical and quality management processes. On the other hand this is also supports a full and in-depth implementation and quality improvements.

VII. Outlook and possible Implementation of ISO 50001 in the Ukraine

The possible transposition of the ISO Standard 50001 was already discussed under the chapter 'Assessment and Gap Analysis'.

It would bring a lot of advantages if the Ukraine will adopt the ISO 50001 within the Secondary Legislation on Energy Efficiency. Its use should be mandatory and it could be certified according to international rules. The Ukrainian methodologies could be used as technical guidance and instruction manual for the implementation of Energy Management in conjunction with the upcoming ISO Standard 50004 'Guidance'.

As far as we were informed the ISO 50001 Standard was already translated to the Ukrainian language and it is obviously under formal and final legal check for the further implementation process.

The discussions with the SAEE- Decision makers and experts, the technical Experts from KPI and other highly qualified institutions within this field of competence were excellent, constructive and encouraging that the Ukraine will achieve these goals with easiness looking back to long experience and tradition on Energy efficiency ex

6. Component 2 - summary of achievements

Component 2: Creation of EU-compliant standards for energy-using products and equipment

Objectives, activities and results

The objective of Component 2 of the Twinning project was to elaborate EU-compliant standards and regulations for energy-related products.

Component 2 comprised three Sub-components:

- Subcomponent 2.1: Transposition of existing CEN/CENELEC measurement standards regarding the eco-design of energy-related products
- Subcomponent 2.2: Introduction to eco-design
- Subcomponent 2.3: Labelling of household appliances

In accordance with the international commitments of Ukraine and the mandate and priorities of SAEE, the main focus of the Twinning project was on Subcomponents 2.1 and 2.3.

In the framework of Subcomponent 2.1, relevant European harmonised measurement standards were identified and are ready for adoption as Ukrainian national standards.

The core activity of Subcomponent 2.3 consisted in advice by the Twinning experts to SAEE with regard to the elaboration of Technical Regulations to transpose the EU Energy Labelling Directive 2010/30/EU and Commission Delegated Regulations for energy labelling for a series of energy-related products.

The main results of the cooperation are shown in the following table:

Major achievements

- On 7 August 2013, the Cabinet of Ministers of Ukraine passed Resolution No 702 «On approval of technical regulations on energy labelling», transposing Directive 2010/30/EU on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products, and Commission Delegated Regulations 1060/2010 and 1061/2010 with regard to energy labelling of household refrigerating appliances and household washing machines respectively.
- Technical Regulations transposing Commission Delegated Regulations with regard to energy labelling of air conditioners, televisions, lamps and luminaires, household tumble driers, household dishwashers, water heaters and space heaters are under preparation and in different stages of adoption.
- The corresponding European harmonised measurement standards have been identified and are ready for adoption as Ukrainian National Standards.
- Stakeholder meetings and seminars were held, in order to assure transparency and collaboration among all key actors.
- A study visit to Germany provided SAEE staff with first-hand insights into current activities and developments in energy efficiency standards and labelling in a EU member state.

Energy labelling: a cornerstone of EU energy policy

Energy labelling is a cornerstone of EU energy policy. Energy labelling in the European Union started in 1992 with Council Directive 92/75/EEC on the indication by labelling and standard product information of the consumption of energy and other resources by household appliances. Between 1994 and 2003, labelling and consumer information requirements were enacted for a series of energy-using products, including household electric refrigerators, freezers and their combinations, household washing machines, household electric tumble driers, household combined washer-driers, household dishwashers, household lamps, office equipment, household air conditioners and household electric ovens.

With the new Labelling Directive 2010/30/EU of 19 May 2010, the successful EU labelling scheme got an additional momentum. A new label design, additional energy efficiency classes and revised methods of measurement and calculation are key features of the new approach. Regulations for individual energy-related products are now implemented by Commission Delegated Regulations, which undergo only formal scrutiny by the Council of Ministers and the European Parliament, and the elaboration of Commission Delegated Regulations for energy labelling is closely related to the development of Commission Regulations with regard to ecodesign requirements of these products.

So far, the following Commission Delegated Regulations for energy labelling were enacted:

- Commission Delegated Regulation 1059/2010 with regard to energy labelling of household dishwashers
- Commission Delegated Regulation 1060/2010 with regard to energy labelling of household refrigerating appliances
- Commission Delegated Regulation 1061/2010 with regard to energy labelling of household washing machines
- Commission Delegated Regulation 1062/2010 with regard to energy labelling of televisions
- Commission Delegated Regulation 626/2011 with regard to energy labelling of air conditioners
- Commission Delegated Regulation 392/2012 with regard to energy labelling of household tumble driers
- Commission Delegated Regulation 874/2012 with regard to energy labelling of electrical lamps and luminaires
- Commission Delegated Regulation 811/2013 with regard to energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar device

- Commission Delegated Regulation 812/2013 with regard to energy labelling of water heaters, hot water storage tanks and packages of water heater and solar device
- Commission Delegated Regulation 664/2013 with regard to energy labelling of vacuum cleaners

European harmonised measurement standards

In order to implement the Commission Delegated Regulations for energy labelling, European harmonised measurement standards are required, which allow the measurement and determination of all technical parameters whose compliance is stipulated in the regulations.

For this purpose, the European Commission has mandated the European standardisation bodies CEN, CENELEC and ETSI to elaborate state-of-the-art harmonised measurement standards for all products which are subject to eco-design and labelling regulations. While most of these harmonised standards are already available, others are still in the process of elaboration or awaiting approval and publication.

Energy labelling in Ukraine

Taking into consideration Ukraine's process of approximation to the European Union, the Ukrainian Government has based its national energy standards and labelling policies on the respective EU schemes. Within the system of central Government bodies of Ukraine, the State Agency on Energy Saving and Energy Efficiency (SAEE) of Ukraine, has the legal mandate to lead the process of setting up the national energy standards and labelling scheme.

Starting from 2002, SAEE elaborated eight national energy labelling standards for household appliances, which are in line with the requirements of the *Acquis Communautaire*. Until 2011, the following Technical Regulations were enacted, and are applied on a voluntary basis:

- Energy labelling for domestic appliances, adopted by Decree of the Cabinet of Ministers of Ukraine no. 5, of 6 January 2010 (harmonised to Directive 92/75/EU).
- Energy labelling for domestic refrigerators, freezers and their combinations, adopted by Decree of the Cabinet of Ministers of Ukraine no. 107, of 16 February 2011 (harmonised to Directive 94/2/EU).
- Energy labelling for domestic washing machines, adopted by Decree of the Cabinet of Ministers of Ukraine no. 108, of 16 February 2011 (harmonised to Directive 95/12/EU).
- Energy labelling for domestic lamps, adopted by Decree of the Cabinet of Ministers of Ukraine no. 1144, of 27 December 2008 (harmonised to Directive 98/11/EU).

In addition to these Technical Regulations on energy labelling, the Resolution of the Cabinet of Ministers of Ukraine no. 787, of 3 of September, 2008, «On approval of the technical regulations on maximal allowed consumption of electric power by the devices of refrigeration» defines minimum energy performance standards for household refrigerating appliances, in accordance with Directive 96/57/EC. These requirments are mandatory, and an amendment which aligns these minimum requirements with Ecodesign-regulation 643/2009 was proposed.

The absence of mandatory labelling requirements results in lack of visual information on energy consumption classes and prevents consumers from making an informed choice regarding energy efficiency when purchasing domestic equipment. Consequently, the full harmonisation of the Ukrainian legal framework for energy labelling to the Aquis Communitaire – and in particular to the recent EU legislation in this field – is a priority of SAEE. This is also a requirement stemming from the Energy Community Treaty, to which Ukraine is a party.

Strategy for the transposition of the EU Energy Labelling Directive and Regulations

As a party to the Energy Community Treaty, Ukraine has assumed the obligation to implement Directive 2010/30/EU and regulations for energy labelling of energy-related products.

During initial discussions, SAEE and the Twinning project jointly developed a strategy, which primarily focussed on the transposition of the Energy Labelling Directive 2010/30/EU, and subsequently on the adoption of labelling regulations for individual energy-related products.

In order to make this strategy viable and effective, several aspects had to be taken into consideration, i.a.:

- To implement both Directive 2010/30/EU and labelling regulations in the framework of Ukrainian national legislation;
- The need to respect both national legislation and the stipulations for the EU Directive and Delegated Regulations, and to find solutions in case of conflicts;
- To harmonise the proposed activities with the annual working programmes on labelling of SAEE;
- To avoid the implementation of EU regulations that will be replaced by new regulations in the near future;
- To give priority to the regulation of energy-using products that have a high share in the national energy consumption of Ukraine and that offer substantial savings potentials.

Elaboration of Technical Regulations

In accordance with this strategy and criteria, the following activities were realised by SAEE, with the assistance of the Twinning experts:

In the first place, SAEE elaborated drafts for the following Technical Regulations, which amend the existing Technical Regulations no. 5 of 6 January 2010, no. 107 of 16 February 2011 and no. 108, of 16 February 2011, mentioned above:

- Technical Regulation on energy labelling of energy related products
- Technical Regulation on energy labelling of household electric refrigerating appliances
- Technical Regulation on energy labellling of household washing machines

The draft technical regulations were discussed in the «Labelling Working Group» with representatives of the Ministry of Economic Development and Trade, the State Inspectorate for Consumer Protection and relevant technical bodies, in order to clarify and solve any conflict with national legislation.

Following the mandatory administrative procedures, the three Technical Regulations were enacted by Resolution no. 702 of the Cabinet of Ministers of 7 August 2013 «On approval of technical regulations on energy labelling» and will enter into force on 9 April 2014. This means that suppliers and distributors of household refrigerating appliances and of household washing machines will have to comply with the requirements of the Technical Regulations and the products offered to consumers shall bear the respective label as shown in the following figure.

Energy label for household electric refrigerating appliances (classified in energy efficiency classes A+++ to C)

Energy label for household washing machines

Furthermore, SAEE and the Twinning experts established a list of further products to be regulated with priority, taking into consideration the obligations from the Energy Community Treaty and the assumed energy saving potentials of these products. In addition to household refrigerating appliances and household washing machines, the following products were chosen and draft Technical Regulations were elaborated:

- Air conditioners
- Televisions
- Lamps and luminaires

The technical regulations for these products have been discussed with the «Labelling Working Group» and have entered the administrative procedures for approval by the authorities concerned.

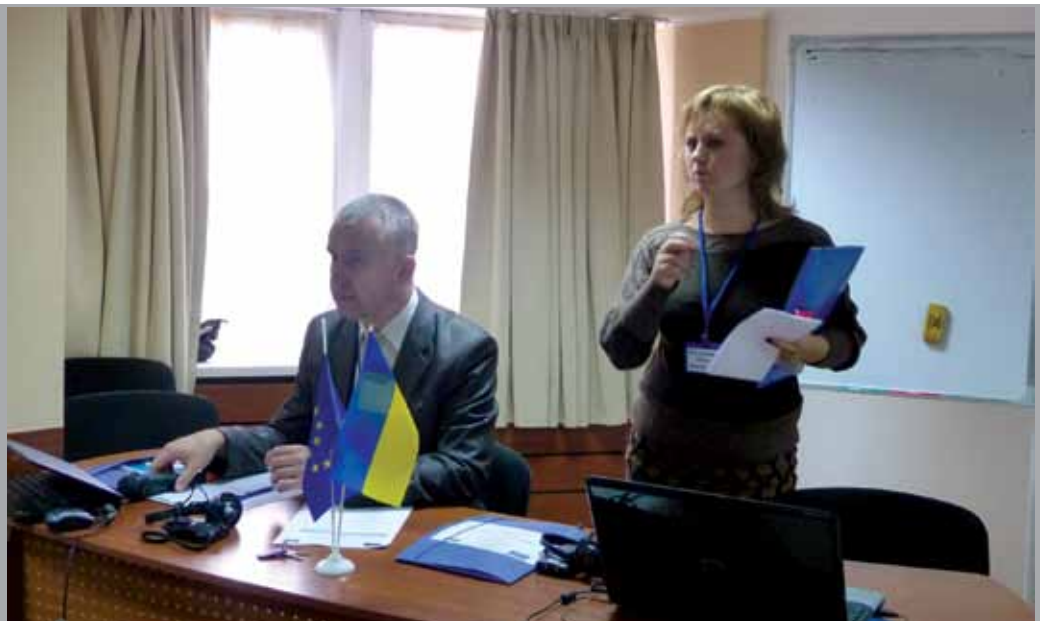
As a final step, the Twinning experts provided assistance to SAEE in preparatory activities with regard to the following additional products:

- Household tumble driers
- Household dishwashers
- Water heaters, hot water storage tanks and packages of water heater and solar device
- Space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar device

In parallel with these activities corresponding European harmonised measurement standards were identified. While some of the standards are still in the process of elaboration by CEN/CENELEC or awaiting approval and publication, the standards listed in the following table are available and are ready for adoption as Ukrainian National Standards. The table includes applicable standards for measuring the energy performance, for determining the noise level and for measuring the energy consumption in low power modes and standby that have been published by the competent European standardization body.

Standard	**Denomination**	**Current status**	**Date of availability**
EN 62552:2013	Household refrigerating appliances – Characteristics and test methods	published	03.2013
IEC 62552:2007 + поправка 2008	Household refrigerating appliances – Characteristics and test methods	published	2007 / 2008
EN 60456:2011	Clothes washing machines for household use – Methods for measuring the performance	published	03.2011
EN 50242:2008/A11:2012	Electric dishwashers for household use – Methods for measuring the performance.	published	09.2012
EN 50242:2008	Electric dishwashers for household use – Methods for measuring the performance.	published	2008
EN 61121:2013	Tumble driers for household use – Methods for measuring the performance.	published	02.2013
IEC 61121:2012	Tumble driers for household use – Methods for measuring the performance.	published	2012
EN 1458-2:2011	Domestic direct gas fired tumble driers of types B22D and B23D of nominal heat input not exceeding 6kW – Part 2: Rational use of energy	published	11.2011
EN 14825:2013	Air conditioners, liquid chilling packages and heat pumps, with electrically driven compressors, for space heating and cooling – Testing and rating at part load conditions and calculation of seasonal performance	published	12.2013
EN 15218:2013	Air conditioners and liquid chilling packages with evaporatively cooled condenser and with electrically driven compressors for space cooling – Terms, definitions, test conditions, test methods and requirements	published	10.2013
EN 14511-1/2/3/4:2013	Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling – Part 1: Terms and definitions, Part 2: Test conditions, Part 3: Test methods, Part 4: Requirements	published	2013 - 10/11/12

EN 12900:2013	Refrigerant compressors – Rating conditions, tolerances and presentation of manufacturer's performance data	published	10.2013
EN 62087:2012	Methods of measurement for the power consumption of audio, video and related equipment	published	02.2012
EN 60704-1:2010	Household and similar electrical appliances. Test code for the determination of airborne noise. General requirements.	published	03.2010
EN 60704-2-14:2013 EN 60704-2-4:2012 EN 60704-2-3:2002 EN 60704-2-6:2012	Household and similar electrical appliances. Test code for the determination of airborne noise. Particular requirements for refrigerators, frozen-food storage cabinets and food freezers / washing machines and spin extractors / dishwashers / tumble driers.	published	05.2013 06.2012 03.2002 10.2012
EN 60704-3:2006	Household and similar electrical appliances - Test code for the determination of airborne acoustical noise - Part 3: Procedure for determining and verifying declared noise emission values	published	12.2006
EN 12102:2013	Air conditioners, liquid chilling packages, heat pumps and dehumidifiers with electrically driven compressors for space heating and cooling - Measurement of airborne noise - Determination of the sound power level.	published	10.2013
EN 50564:2011	Electrical and electronic household and office equipment - Measurement of low power consumption	published	05.2011
EN 50563:2011	External a.c.-d.c. and a.c.-a.c power supplies - Determination of no-load power and average efficiency of active modes	published	10.2011



Stakeholder meetings and seminars

In addition to the meetings or the «Labelling Working Group», SAEE organised two seminars for stakeholders, including representatives of suppliers and distributors of energy-using products.

The first seminar took place in October 2012, and was attended by 25 participants. The main purpose of the seminar was to announce SAEE's intention to introduce mandatory energy labelling of energy-related products, in line with the current EU labelling and standards schemes, in order to facilitate suppliers and distributors to prepare for compliance with the new regulations. The following table includes the main topics presented and discussed during the seminar.

Seminar on Labelling, 25 October 2012 – Main Topics

- Energy Labelling in the European Union and Requirements under the Energy Community Treaty (Dr Floris Akkerman, Twinning expert)
- Development of EU Harmonised Standards – Measurement Standards for the Performance of Energy-related Products (Mr Heinz-Jochen Poremski, Twinnng Expert)
- The Introduction of Energy Labelling for Household Appliances (Ms Kateryna Chernyavska, SAEE)
- State Market Surveillance – General Non-food Products Safety (Ms Anna Evtushenko, State Inspectorate for Consumers Rights Protection)

A second seminar took place in November 2013. This seminar was directed in particular to suppliers and distributors of household refrigerating appliances and of household washing machines, with the purpose to familiarise them with the requirements stemming from the respective Technical Regulations enacted by Resolution no. 702 of the Cabinet of Ministers.

Study visit

From 18 – 24 November 2012, a delegation of SAEE visited public and private entities in Germany, who are involved in various activities in the field of energy labelling and standards, including: policy making, implementation of EU labelling regulations on the national level, European and international standardisation, consumer awareness, promotion of most energy efficient products, green procurement and product research. The following table provides an overview of the organisations visited by the delegation.

Study visit to Germany – Organisations visited

- Federal Ministry of Economy and Technology (BMWi)
- Chamber of Industry and Commerce (IHK) of Potsdam
- Berlin Energy Agency (BEA)
- German Energy Agency (dena)
- Bosch-Siemens Household Appliances (BSH)
- German Institute for Standardisation (DIN)
- OSRAM (lamp manufacturer)
- Bavarian Energy Agency «Energie Innovativ»

A collaborative effort

The achievements of Component 2 of the Twinning Project are due to a collaborative effort led by SAEE, which involved SAEE staff, the Twinning experts, members of the «Labelling Working Group» and other stakeholders, as shown in the following table.

Key participants and stakeholders involved in the activities of Component 2

State Agency on Energy Efficiency and Energy Saving of Ukraine (SAEE):

- Mr Alexander Tron, Director of Department of State Regulation
- Mr Alexander Venediktov, Deputy Director of Department of State Regulation
- Ms Kateryna Chernyavska, Head of Standardisation and Labelling, BC-Coordinator of Component 2: Creation of EU-compliant standards for energy-using products

Twinning experts:

- Mr Wolfgang F. Lutz, B.&S.U., Germany
- Dr Floris Akkerman, Federal Institute for Materials Research and Testing (BAM), Germany
- Mr Heinz-Jochen Poremski, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), Germany

Members of the Labelling Working Group:

- Representatives of SAEE, Ministry of Economic Development and Trade, State Inspectorate for Consumer Protection, Technical Committee «Standardisation of Electrical Household Equipment and Appliances», State Enterprise «Ukrmetrteststandard»

Stakeholders:

- Representatives of suppliers and distributors of energy-using products, European Business Association (EBA)

Due to this collaborative effort, first, yet decisive, steps were realised towards the full implementation of a state-of-the-art energy labelling scheme in Ukraine, which is fully harmonised with current EU legislation in this field.

The energy labelling scheme will result in new consumer awareness, facilitate trade between the EU and

Ukraine, provide incentives for manufacturers of household appliances and other energy-related products to improve the energy efficiency of their products, and – last but not least – result in substantial reductions of energy consumption in the residential sector.

7. Component 3 – summary of achievements

Component 3 of the Twinning project

The twinning project consists of three main components on the selected spheres of cooperation. Component 3 focussed on the institutional framework and a peer review of SAEE with EU energy agencies in other Member States. The objective was to strengthen Ukraine capacity to manage developments in the field of energy efficiency.

General Framework for functional review of SAEE

Improvement in energy efficiency is one of the most pressing priorities of energy policy in Ukraine. However, despite numerous papers, plans and strategies, improvements have been marginal. The amount of energy used for each unit of goods and services produced is still 3.8 times higher than the European Union average.

The implementation of energy efficiency improvements by households and companies as well as state authorities lacks behind in EU as well as international comparisons.

Market failures inherent in energy markets – such as incomplete information over current and future energy costs, a lack of (long-term) financing, under-pricing of environmental damage, myopic consumers and investors need to be addressed in a consistent policy framework that aims at increasing energy efficiency. This is usually the core task of the ministries and government authorities responsible for energy efficiency in the European Member States.

These government institutions are usually supported by national and regional energy (efficiency) agencies in EU MS.

Releasing the huge EE potential in Ukraine will require administrative and regulatory reform and full implementation of international treaty provisions. Effective competition, alongside a progressive move towards market prices, will also help Ukraine attract investment to develop the sector.

Actually responsibility for energy efficiency policy is vested in numerous government ministries and agencies. This makes coherent and consistent energy efficiency policy formulation and implementation difficult. The government needs to strengthen the capacities of the lead ministry on energy efficiency (at the moment the ministry of economy) to enable it to more effectively co-ordinate with the other relevant bodies.

This is indispensable in order to quickly and effectively realize Ukraine's large energy efficiency potential and benefit from related opportunities to foster economic growth and employment.

SAEE could play an important role as national EE agency like for example the German dena or French Ademe and could also become an important regional player if using their regional offices as regional EE agencies like for example regional EE agencies of the German "Lä nder" (federal states).

The institutional framework for energy efficiency in Ukraine has undergone a number of changes.

The National Agency of Ukraine on Ensuring of Efficient Use of Energy Resources (NAER) established in 2006 was replaced by the State Agency on Energy Efficiency and Energy Saving (SAEE) in April 2011. SAEE is tasked with various functions related to setting/assessing technical standards, developing draft laws and technical regulations, monitoring and control functions and dealing with renewable energy deployment. There is also a series of tasks to deal with public relations, mass media and so called "popularization", but these remain few in the long list of other tasks.

The responsibility for energy efficiency was moved from the Cabinet of Ministers to the Ministry of Economy and Trade, which must approve draft legislation developed by SAEE. Due to the re-organisation, there was a standstill of much of the energy efficiency work. Currently an evaluation of government institutions and an administrative reform is underway and it is possible that the set-up of the agency responsible for energy efficiency will again be subject to change. Especially the abolishment of the "inspectorate" function and the now somewhat unclear role of the regional branch offices of SAEE is under discussion.

Each relevant ministry also has its own energy efficiency programme and local authorities are developing regional energy efficiency programmes. Co-ordination related to energy efficiency is mainly on an ad hoc basis: though the SAEE should be acting as a coordinator and facilitator, this role is not really working; no formalised structure for on-going co-ordination and information sharing has been established.

Some non-governmental organisations and several research and educational institutes are active in energy efficiency. These organisations have played a large role in promoting energy efficiency and contributing to awareness-raising. There are numerous international and bilateral programmes for promoting energy efficiency in Ukraine, ranging from awareness campaigns and subsidised loans to large-scale investments and retrofits.

The assessment shows that SAEE is well established according to most of the tasks related to them and competently staffed for most of its actual tasks except some capacity building deficits (knowledge of professional English only 7-8 % of staff, modern IT/web site needed, management and technical training for some of the staff, especially juniors and regional staff is needed on international policy issues related to EE).

Management level of SAEE gives the opinion that staff is sufficiently trained and professional (which can be verified related to educational levels and actual tasks) but several general training needs are assessed in the professional field directed to customers like team building skills, communication skills, language skills (important when dealing with FDIs). Also individual management skills like time management, negotiation skills and project management skills are requested and will prove useful when new tasks like coordination

of finance programs, international cooperation and also dealing with UA and international clients will grow.

When promotional issues become more important, customer related services like expertise and support will also become more important. Therefore these training needs should be tackled by a HRD plan and the option for external training courses for suitable staff.

In comparison to EE performance structures in EU MS SAEE needs to build capacities and capability to focus on promotion of EE towards customers and clients, awareness raising activities for special target groups and general support and expertise for the general public, local municipal administrations, public sector institutions and the commercial and industrial sector as well.

The regional offices could provide an important support and services function for the promotion of EE.

Benchmarking with peers – Energy Agencies in EU Member States

Reducing energy consumption and eliminating energy wastage are among the main goals of the European Union (EU). EU support for improving energy efficiency will prove decisive for competitiveness, security of supply and for meeting the commitments on climate change made under the Kyoto Protocol. There is significant potential for reducing consumption, especially in energy-intensive sectors such as buildings, manufacturing, energy conversion and transport.

At the end of 2006, the EU pledged to cut its annual consumption of primary energy by 20% by 2020. To achieve this goal, it is working to mobilise public opinion, decision-makers and market operators and to set minimum energy efficiency standards and rules on labelling for products, services and infrastructure.

To promote, encourage and implement EU objectives, plans and directives, EU supported the development of a network of energy agencies in EU MS on all levels, facilitating the establishment of a great number of regional and local energy agencies via i.e. the SAVE and later on IEE programme. Historical background of energy agencies in EU

The SAVE Programme is a European Commission initiative that started in the 1990s to support local authorities in the energy field. The aim of this programme was to stimulate, for the first time a 'bottom up' approach to energy management by encouraging local and regional action on energy efficiency including the use of local energy resources and sustainable development at the local level. To achieve this aim, SAVE co-funded the creation of autonomous Energy Management Agencies at local and regional levels. These Agencies have cooperated with FEDARENE (European Federation of Regional Energy and Environment

Agencies) and ENERGY-CITIES (Network for of local authorities) and ISLENET (European network for energy and environment on islands).

Since 2004, energy agencies have been created under the Intelligent Energy Europe – PROGRAMME. Energy agencies aim to contribute to the implementation of the European, national, regional and local energy policies, leading to changes in the decision makers' and citizens' behaviour. Thereby moving towards efficient use of energy, improved knowledge of renewable energy and triggering investments in renewable energy especially at local and regional level. The Intelligent Energy Europe – Programme supports the Covenant of Mayors initiative by funding relevant projects..

Energy agencies advise local authorities on all aspects of sustainable energy, as well as providing technical assistance in the design of energy projects and the dissemination of information. These agencies support local development by acting as an intermediary between the local/regional authority and local/regional players in the energy market.

In all EU MS there exist numerous energy agencies on central (national), regional and local level.

In few EU countries there is one National Energy agency, which is completely state owned, manages under supervision of a ministry and carries out legal and control tasks on behalf of the government. This type of more "administrative" energy agency is mainly found in new MS in Eastern Europe (former communist States). A typical example is the Romanian ANRE, which is perhaps the most similar to the Ukrainian SAEE.

Most of National Energy Agencies in EU MS are organized differently and manage different tasks, more in the way of a public-private advice and support body with strong emphasis on self financing, international networking and implementing real projects and without control functions. Typical examples are the Finnish Central agency, the various UK agencies like the Scottish one and as an example of potential candidate countries the energy agency of Iceland.

Between these positions you find various types of agency organization and structure from more centralized, governmental bodies (example ADEME from France) towards private - public institutions like Polish KAPE or German dena.

The national agencies are usually supported by regional structures in all bigger EU MS (example: France, Germany, Italy, UK). These regional energy agencies are either organized as independent legal bodies, implementing regional programmes and working on behalf of regional administrative structures like in UK or Germany o r are organized as territorial units of the national energy agency like in France.

Regardless of their legal organization, the regional energy agencies provide valuable assistance, advice and support to the clients on regional level. Many of them act as info points and/or help desks for regional municipalities, public institutions, enterprises, R&D community, NGOs and the public.

They are usually responsible for the running of regional EE networks, public relations, information and communication and campaigning. They also act as kind of liason offices towards the national energy agencies for more general or legal topics.

As an example the organizational structure of the ADEME agency is explained below in more detail.

The French Environment and Energy Management Agency is a public agency under the joint authority of the Ministry for Ecology, Sustainable Development and Energy and the Ministry for Higher Education and Research. Its mission is to encourage, supervise, coordinate, facilitate and undertake operations with the aim of protecting the environment and managing energy.

The organizational structure consists of three central departments in Angers (49 staff), Paris (75 staff) and Valbonne (06 staff); 26 regional branches, three representative offices in France's overseas territories and one representative office in Brussels.

46 % of the employees work in the 26 regional branches, around 400 staff. The professions represented at ADEME include engineers (40%), secretaries and managers (30%) and communications, training and documentation professionals(10%). The responsibilities and tasks of ADEME on behalf of the national government are organized by a framework contract (5 years period, actually the contract for 2011-2016).

The agency operates in three strategic directions with the aim of turning the concept of sustainable development into a concrete reality:

- Adhering to a list of appropriate criteria to guarantee consistency in its policies and actions within the scope of its sustainable development programme.
- Helping contacts and partners by offering methods and tools adapted to their needs.
- Implementing an internal "ADEME: Setting the Example" programme.

France's National Strategy for Sustainable Development aims to encourage socio-economic players to adopt sustainable-development integration strategies in their policies and activities. ADEME's mission falls within this framework. The agency is primarily concerned with the following areas:

- Raising public awareness (i.e. government, local authorities, NGOs, citizens and prospective citizens) regarding the issue of sustainable development.
- Helping to develop and implement action programmes like Agendas 21.
- Assisting companies, local and administrative authorities by developing environmental management procedures.
- Promoting sustainable consumption by encouraging demand for and supply of environmentally friendly products.
- Contributing to defining implementing the programme, "The State Sets the Example".

ADEME relies on three main areas of expertise to achieve its missions:

- Science and technology: to seek out environmentally friendly solutions.
- Expertise and advice: to guide decision-makers in their projects and choices.
- Results and experience in the field: pooled in the agency's own Resource Centre to promote the circulation of best practices.

ADEME fosters partnerships to support its initiatives with major corporations, local and regional authorities and NGOs and counterpart organizations outside of France.

The major challenges set within the scope of France's energy policy are to manage energy demand, extend our range of technological sources of production and supply, develop research in the energy sector, and guarantee the provision of energy transportation and storage infrastructures adapted to consumption requirements. ADEME's activities are in line with France's national policy, and cover two additional objectives:

- To encourage the public and socio-economic players to save energy, particularly in sectors that consume high quantities of energy on a daily basis (households, offices, shops and transport).
- To promote renewable energy sources (biomass, solar power, geothermal energy and heat pumps).

The agency operates in various ways:

- By supporting research programmes on clean, economical transport systems (electric vehicles, biomass fuels, particulate filters and so on), energy efficiency of buildings (including heating, hot water, cooling, ventilation and lighting systems) and new energy technologies.
- By providing financial and technical assistance for feasibility studies that enable developers to deploy more efficient energy solutions.
- By promoting the implementation of illustrative, motivational operations regarding the efficient use of energy, making these operations known.
- By giving the general public specific information on existing technologies (white goods labelled "low consumption", energy-efficient boilers, individual solar-powered water heaters, heat pumps, insulation techniques, room thermostats and "green" tires and fuels) and energy-saving best practices via our Energy Info Points *(Espaces Info'Energie)*. The agency recently launched a three-year campaign – dubbed "There's no time to lose - things are heating up" – to rally public support on the issue of saving energy.

ADEME's activities in the energy field mainly target national and regional cooperative efforts. The agency provides its expertise, campaigning resources and funding to various partners, including:

- Local authorities.

- Government bodies, such as the technical departments of the supervisory ministries.
- Industry professionals (providers and producers of energy, energy service companies, equipment manufacturers and installers etc.).
- Public and private research bodies.
- Trade organizations, such as France's building-sector federation and various other trade organizations.
- Large developers, such as the HLM Office.
- Certification bodies (AFNOR, QUALITEL and so on).
- Consumer associations.
- Banks.

In addition to the 26 regional departments, ADEME's statutory decree states that "regional prefects are the territorial delegates of ADEME as far as its action in the region is concerned". That means that the regional administrations are also involved as part of the "regional energy agencies network" and perform certain delegated tasks.

The SAEE has signed a number of cooperation agreements with similar agencies in other countries (French ADEME is an example). SAEE also gained experience by visits to other energy agencies in EU MS.

SAEE participated in a number of visits to the Swedish Energy Efficiency

Agency to study the experience of their Swedish counterparts in the establishment

of regional energy efficiency offices as opposed to operating under a single

centralized agency.

The agency of the Dutch Ministry of Economic Affairs implemented a project to assist SAEE in the development of a communications strategy by strengthening the skills of SAEE Press and Communication department.

SAEE and the Austrian Energy Agency (AEA) have signed a memorandum of

understanding on energy efficiency and renewable energy sources. Specifically,

the agencies agreed to open educational centers for training managers and experts

in the field of energy conservation and energy efficiency.

In addition, the parties agreed to cooperate in improving municipal heating systems and housing utilities through the introduction of new technologies and equipment, in particular with the use of bio energy and cogeneration technologies.

For further information:

State Agency on Energy Efficiency
and Energy Saving of Ukraine:
Mrs Olena Kazlovtseva
Head of Legal-Support Department
e-mail: kaelena@inbox.ru
phone: +38044 590-59-69

Member State Twinning Project Team:
Alexander Efremov, Resident Twinning Adviser
e-mail: efremovtwinningua@gmail.com
phone: +38096 825 78 33