



ENERGY COOPERATION BETWEEN THE EU, THE LITTORAL STATES OF THE BLACK & CASPIAN SEAS AND THEIR NEIGHBOURING COUNTRIES



# **FINAL REPORT**

## **NATIONAL ENERGY STATISTICS ACTION PLAN FOR THE REPUBLIC OF ARMENIA**

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**“INO GATE Technical Secretariat and Integrated Programme in support of the  
Baku Initiative and the Eastern Partnership Energy Objectives”**

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## 1. INTRODUCTION

A unified approach to activities related to energy statistics is needed for various reasons – it helps policy makers in the decision making process, reduces administrative workload when collecting and supplying data, reduces efforts of organisations in explaining differences between different datasets, helps general public to understand the energy situation in their own country, as well as in other countries. Detailed, complete, timely and reliable statistics are essential to monitor the energy situation both at the country level and at the regional level.

At the beginning of 2012, the EU launched a technical assistance project to address energy statistics in the countries in the INOGATE area (Belarus, Moldova, Ukraine, Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan, and Tajikistan).

The assistance will be implemented during the following 2,5 years through the ITS project (*INO GATE Technical Secretariat and Integrated Programme in support of the Baku Initiative and the Eastern Partnership Energy Objectives*) and its specific Component D: *Support to statistical cooperation*.

The main aim of the ITS project and Component D is to assist the Partner Countries (PCs) in developing their institutional frameworks for energy statistics, in order to harmonise them with international standards, and to improve the methodologies applied in data collection and compilation of energy statistics, energy balances, energy prices and energy (efficiency) indicators.

One of the main activities of the ITS project is the development of Energy Statistics Action Plans (ESAPs) and their adoption by the Partner Countries (PCs). ESAPs will be used as a guideline for implementing certain activities under the project, as well as for monitoring their success. The Energy Statistics Action Plans consist of the following main segments:

- evaluation of the current status of energy statistics and energy balances and creation of the Energy Statistics Country Profile;
- assessment of the required measures and activities needed to streamline the efforts towards the alignment of energy statistics with the rules and procedures applicable in the relevant international organisations (IEA) and in the EU (EUROSTAT);
- selection of the specific measures and activities to be supported by the ITS project through the technical assistance aimed to increase transfer of know-how and skills and the creation and strengthening of the institutions involved in energy statistics system organisation. In addition to the above mentioned, the ITS project has prepared several sets of horizontal activities (workshops, conferences, study tours, networking) which will complement the activities related with ITS technical assistances and be synchronised with them.

The Energy Statistics Action Plans refer mostly to the ITS project period, but the ITS experts have also included suggestions for the period after the project closure.

The Energy Statistics Action Plans envisage an active participation of the PCs' relevant institutions in implementing the activities proposed by the ITS project, as well as in monitoring the success of the project.

## 2. CONCEPT AND METHODOLOGY

In order to develop the Energy Statistics Action Plan in each PC, the ITS experts responsible for the implementation of *Component D: Support to statistical cooperation*, have developed and applied a uniform methodology based on the principles of equality of all the PCs and on the optimum usage of the resources needed for the implementation of specific activities. This means that the ITS experts have tried to shape the implementation of the activities in the following 2,5 years in such a manner that it provides maximum achievable results.

The methodology comprises the following steps and tasks:

- to assess of the institutional framework (legal regulation and institutional organisation) for energy statistics;
- to review reporting systems and the energy data collected from the sources that were made available by bureaus of statistics and other responsible institutions in the PCs, as well as from other relevant available sources, such as the publications of the IEA and from sources of official energy statistics; and to check and verify findings from other sources (including other departments of bureaus of statistics, ministries, agencies and/or other entities involved in monitoring and forecasting energy data);
- to evaluate uniform surveys prepared and submitted by the ITS experts to each PC, to identify gaps in data collection and in the applied procedures and methodologies against the IEA requirements, to develop benchmarks for specific segments of the energy statistics system and to identify specific groups and the level of development;
- to propose concepts and methodologies for the establishment of a reporting/surveying systems, compilation, aggregation and dissemination of the energy data in accordance with the assessment of each PC's actual capacity, in order to enable the synchronisation and harmonization of time schedules for specific activities in other PCs;
- to create Energy Statistics Action Plans proposals for each PC, referring to the period of the following 2,5 years and based on a uniform list of specific tasks and applicable measures that are required to overcome an identified gap in all the PCs – both in advanced countries and in those lagging behind the process;
- to estimate the technical, financial and human resources needed to overcome gaps and missing statistics and to set priorities for further actions and activities supported by the ITS project.

The main areas of cooperation between ITS project and PCs will be the implementation of specific activities, which fall into the scope of the following key actions:

- Strengthening of the legal and institutional framework,
- Development of a reporting system based on international (IEA/ EUROSTAT) standards,
- Energy balances compilation and submission of the questionnaires to the IEA,
- Development of a reporting system for monthly/quarterly energy statistics,
- Development of a reporting system on energy prices,
- Development of a reporting system on energy and energy efficiency indicators.

This Energy Statistics Action Plan is based on the common efforts between ITS expert team and Armenian representatives aimed to define the sequence of needed actions and to set the priority actions, which will provide the maximum and the most efficient contribution to the progress toward harmonisation of the Armenian statistics with the international standards.

ITS expert team had developed the draft proposals for ESAPs, which had later been sent to the relevant institutions in the Partner Countries in order to receive their feedback and opinion on the proposed activities, as well as their suggestions for the further ESAP improvements. Suggested comments from PCs were additionally discussed and were integrated into the final Energy Statistics Action Plan.

### 3. ENERGY STATISTICS COUNTRY PROFILE

#### 3.1. Legal and institutional framework

The *Law on the State Statistics* determines the organisation of state statistics in the Republic of Armenia and regulates the relations regarding the obligatory data collection, processing, accumulation, compilation and protection. Also, the Law defines the relations and obligations connected with data analysis and exchanges related to the social and economic processes, population and spheres of its activities, and the presentation (publication) of statistical information.

The *Law on the State Statistics* defines the National Statistical Service (NSS) and its territorial and functional units, which implement state statistics. The NSS implements activities of public interest; it is not dependent on state and local self-government bodies of the Republic of Armenia.

The main functions of the National Statistics Service of the Republic of Armenia include the following activities:

- collecting, processing, summarizing and publishing statistical data,
- co-operation with state and local self-government bodies in collecting of statistical information,
- developing and improving statistical methodologies and coordination of data collection and dissemination according to international standards and classifications,

- organising statistical surveys,
- carrying out population and agricultural censuses every 10 years,
- establishing, maintaining and updating the business-register,
- ensuring data security and statistical confidentiality,
- providing users with statistical information,
- ensuring the transparency and access to aggregated statistical information and metadata,
- co-operation with international organizations and national statistical offices.

The supreme body of governance of the Service and its units is State Council on Statistics (hereinafter referred to as "the Council"). The President of the Service, at the same time, holds the post of Chairman of the Council. Council creates the policies in the domain of state statistics, designing, regulation and the organisation of long-term activities, monitors the implementation of the Program of State Statistical Work, as well as coordination of the administrative statistics in the Republic of Armenia stipulated by the Program of State Statistical Work.

The Council confirms the draft of a three-year program of state statistical work, the annual program of state statistical work within a month after the adoption of the State Budget of the Republic of Armenia and confirms the regulations and structure of the Service and its territorial and functional units. In addition, the Service monitors the implementation of the program of state statistical work and confirms the report on implementation of annual program, adopts the legal acts in the domain of statistics in cases stipulated by the Law, confirms its internal rules of procedure and implements other powers stipulated by the Law.

The current Three-year Program of State Statistical Work for 2010 – 2012 contains the set of activities related with energy statistics development and energy balance compilation based on the European standards.

Activities on energy statistics are currently the responsibility of the Industry Statistics Division. The last energy balance was compiled in 1989 and in that time NSS's organisational structure included the Division of Energy Statistics. This Division was abolished in 1990.

The institutional organisation for collecting energy data includes, besides National Statistical Service of the Republic of Armenia, the Ministry of Energy and Natural Resources (administrative register), the Customs Service, the Armenian regulator of energy market, electricity producers (120 HPPs, 2 TPPs, NPP, wind power plant and TPP based on biomass consumption) and others.

Beside the NSS, there are other stakeholders, which deal with energy statistics.

The Energy Strategy Centre is an experienced institution in the energy statistics and energy balance compilation. In 2004, the Centre had compiled the last energy balance but only for its own purposes. The Energy Strategy Centre is a subordinate division to the Institute of the Armenian Scientific Research Institute of Energy. Since 1992, the Institute is part of the organisational structure of the Ministry of Energy of The Republic of Armenia.

It should be noted that there is a EU funded twinning project entitled "Forwarding Armenian Statistics through Twinning" which started on 16<sup>th</sup> March 2011. The objective of the two-

year project is to support the National Statistical Service of the Republic of Armenia in developing a comprehensive management framework and statistical methodologies, which are in line with European Union standards. The project covers the following segments: quality management, national accounts, business statistics and business register, agricultural census, harmonised consumer price index and ICT statistics.

Since November 2011, Armenia holds observer status in Energy Community and it is expected that it will be invited to participate in the various Energy Community's programs on energy statistics.

One very important document, which significantly determines the direction of energy statistics development is the *Energy Sector Development Strategy*, adopted by the Government of Armenia in 2005 and updated in 2007. The Strategy defines mechanisms and actions for the achievement of the strategic objectives. The main four goals of the National Strategy are: development of the nuclear energy system, maximal utilization of renewable energy sources and increasing energy savings programs, diversification of primary energy resources and import/export routes, regional integration of the electricity and natural gas markets.

From the above-mentioned, it is clear that Armenian energy statistics should be developed and improved particularly in the segment of energy supply and that particular emphasis should be put on statistics of renewable energies.

In Armenia, there is an urgent need to establish a special division in the National Statistical Service, which will work with energy statistics.

### **3.2. Capacities and capabilities in energy statistics systems**

The Industry Statistics Division consists of 8 staff members, 2 of which are partially involved in the collection, processing and dissemination of energy statistics, including reporting to diverse international organisation such as UN and IEA. The lack of funding is the main reason why the Industry Statistics Division is incapable to attain the objectives set in the Three-year Work Programme for 2010 -2012.

### 3.3. Energy profile of the Republic of Armenia<sup>1</sup>

#### PRODUCTION

According to the energy balance for 2009 (IEA source) total primary energy production in Armenia amounts 825 ktoe, 79 percent of total production belongs to nuclear energy while 21 percent to hydropower.

#### IMPORT AND EXPORT

In 2009, Armenia imported 1,860 ktoe of primary energy, main imported energy forms being natural gas and oil products with a share of 77 and 22 percent respectively. Armenia does not export significant quantities of energy.

#### ENERGY TRANSFORMATION

In 2009, electricity production amounts to 650 ktoe in nuclear power plant (NPP) and 174 ktoe in TPPs (natural gas).

#### ENERGY CONSUMPTION

Total final energy consumption (TFC) amounts 1915 ktoe, the largest share in TFC has natural gas consumption (59 percent). It is followed by oil products and electricity consumption with equal shares of 20 percent.

Consumption structure is the following: industry sector uses 27 percent, transport sector 31 percent, while other sectors consume 42 percent of TFC. Share of the residential sector in total final energy consumption amounts to 77 percent.

### 3.4. Review of available methodologies applied in the process of collecting, elaborating and processing energy statistics data

The ITS expert team estimates that data on electricity in Armenia is reliable enough. The results of the TACIS program<sup>2</sup> presented in the Country report for Armenia shows that the Industry Statistics Division uses 1 monthly, 1 quarterly and 5 annual questionnaires for

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<sup>1</sup> [http://www.iea.org/stats/balancetable.asp?COUNTRY\\_CODE=AM](http://www.iea.org/stats/balancetable.asp?COUNTRY_CODE=AM)

<sup>2</sup> TACIS Statistical Programme, Country Report: Armenia, 2008



energy data collection. Monthly questionnaire consists of questions related to the turnover and number of employees, whereas the yearly is extended with questions about products, costs and similar information. Data is collected from enterprises in different formats: electronic formats, hard copy, phone interview and other means of surveying. The questionnaires are adjusted to the National Accounts requirements. The classification of enterprises corresponds to the Armenian version of NACE.

Monthly and annual data on electricity consumption are collected from all enterprises which number 20 employees or more, while enterprises with less than 20 employees are surveyed based on sampling. Data from the sample surveys are grossed-up to produce population estimates of enterprises with number of employees less than 20.

The TACIS's Country report for Armenia contains information that energy data in Armenia is published monthly and that data can be found in monthly publications such as: *Socio-economic Situation in Armenia*, *The main indicators of industry by type of economic activity* (in value, number of employees and by sectors) and *The production of the main kinds of products* (in kind). The Statistical Yearbook publishes annual energy data. In addition to these publications, special handbooks: *Industry of the Republic of Armenia for 1990-1997* and *Industry of the Republic of Armenia for 1998-2003* were published. In conclusion, the TACIS programme emphasizes the problem with the nomenclature of goods and products. *Statistics 4* of the TACIS programme supported a sample survey of industrial and transport enterprises, which was used to compile energy balances.

During the inception mission and meeting with National Statistical Service, the ITS expert team received examples of three forms for the annual collection of electricity data: for the collection of data about electricity production in power plants and electricity consumption in public and private sector.

In comparison to the data on electricity, the gathered natural gas data are less transparent. Natural gas data relies on reports from ArmRusGasProm, the company, which holds a monopoly on the gas market. The imports from Russia are used for final energy consumption, while the import from Iranian supplies is delivered directly to the thermal power plant.

The major problem in Armenia is the lack of data on consumption side of energy balance, and most particularly in agriculture and construction sector.

The UNDP implemented a survey on fuel wood and biomass, but the results were not reliable and satisfactory due to huge illegal cuttings. The only reliable official statistics on firewood is the sanitary cutting allowance as provided by law, these cuttings amount 40,000 cubic meters per annum.

There is no oil production in Armenia, oil is imported but there is neither data on oil consumption, nor on oil stocks.

### 3.5. Energy balances compilation and their submission to the IEA

The Industry Statistics Division is responsible for the energy balance compilation; however, the complete energy balance is not available. In its annual publication *Statistical yearbook* the NSS publishes the following information:

- electricity balance: production, import and consumption (industry, agriculture, transport, households and other branches), losses and exports
- electricity production generated in the thermal power plants, hydro power plants, nuclear power plant and wind plant (mln. kWh),
- capacities of the power stations (1000 kW),
- structure of the electricity consumption in industry sector by type of economic activity (%).

The data for 2011 are available on the official website:

<http://www.armstat.am/file/doc/99466673.pdf>.

There is no data on other energy forms in official publications. There is information that the authorities responsible for wood management collect data on biomass consumption, but this data is not available to the Industry Statistics Division.

### 3.6. Reporting on monthly energy statistics

Although TACIS project reported that monthly data on electricity consumption is published in different publications, the NSS of Republic of Armenia did not report this information in submitted common questionnaire. This implies that additional research on the monthly data should be done.

### 3.7. Reporting on energy prices

NSS publishes average annual energy prices for selected services. These selected services include average electricity and natural gas prices, which are supplied to selected branches of final consumers. The NSS applies specific methodology for the calculation of electricity prices, based on the type of meter.

### 3.8. Energy and energy indicators reporting

The main purpose of energy balance compilation in Armenia should be the development and monitoring of indicators on primary and secondary energy commodities, distribution and consumption for the main economic activities in the national economy. NSS reported in the submitted questionnaire that energy indicators were developed in the framework of the UN GHG inventory projects.

## 4. ENERGY STATISTICS ACTION PLAN 2012 - 2015

The Energy Statistics Action Plan for Armenia is presented in the following paragraphs as a sequence of integrated horizontal and vertical activities planned for the period 2012 – 2015. All proposed activities are specified in such a manner that they reflect Armenia’s demands for timely and reliable energy statistics data. The activities that are suggested and planned to be supported by the ITS project, through the particular Technical assistances (ITS TA), are specially highlighted. A list and a short explanation of all applicable ITS Technical assistances can be found in Annex 2.

In addition to the above-mentioned vertical activities, the main stakeholders in energy statistics will be invited to actively participate in other ITS project activities common for all the Partner Countries (PCs), such as workshops, conferences, study tours, networking and others (horizontal activities) that complement the ITS technical assistances. It is important to mention that Armenia and its responsible stakeholders are expected to ensure the availability of appropriate staff, to support their active participation in the implementation of this Action Plan, and thereby ensure the sustainability of the initiated processes.

The main goal of all these activities is to increase the capacity building in the PCs and establish a reliable and timely energy statistics system available to the growing number of energy statistics users.

Implementation plan and timelines presented in table 5-2, Chapter 5, provide a schedule of the activities to be accomplished until 2015.

ITS expert team developed a set of indicators for the monitoring of the implementation of the ESAPs during the period 2012 – 2014. The indicators are listed in the table in Annex 3 and will be filled out at the beginning of the implementation phase and at the end of the every project years (2013, 2014). NBS and ITS expert team will complete the table jointly.

The main conclusion on energy statistics in Armenia as written in the *Global Assessment of the National System of Official Statistics of the Republic of Armenia* is that Armenia needs to implement many additional surveys and improve the data quality in all segments of the energy balance. The Three-year Program of State Statistical Work for 2010 – 2012 shows Armenia’s commitment to develop energy balances, but it seems that overcoming the lack of funds for energy balance compilation is far more challenging.

Based on the energy statistics system assessment presented in the previous chapters, the ITS expert team proposes Armenia to implement a set of activities which will contribute to the improvement of energy data quality and capacity building. The main results of the ITS assistance in Armenia will be energy and commodity balances published on the NSS official website free of charge.

### 4.1. Key area 1: Legal and institutional framework strengthening

On site mission confirmed that Armenia is faced with very weak institutional organisation for energy statistics. It commits itself to improve energy statistics, but organisation and lack of funding is the main barrier in the progress.

- **Development of the program for data collection and compilation**

The aim of this activity is to create a proposal that includes specific activities related with development of energy statistics in accordance with NSS's *Statistical Working Programmes*. The proposal will be based on the detailed analysis of energy flows and of stakeholders involved in the energy system. The proposal will include the lists of the needed data, methodologies and procedures to be adopted by NSS in the following *Statistical Working Programmes*. The implementation of this activity can be supported by the **ITS Technical Assistance ITS TA - 1.2**.

- **Improvement of the institutional relationship and capacity building on the institutional organisation for energy statistics**

The aim of the development of a much firmer institutional organisation in Armenia is to gather the relevant stakeholders involved in the collection, compilation, standardisation and dissemination of energy statistics. Such organisation will contribute to the effectiveness of the statistics system and will help avoid the duplication and overlapping of the stakeholders' work.

Effective institutional arrangements are usually characterised by the designation of only one agency responsible for disseminating energy statistics, so that the NSS of the Republic of Armenia, as the officially appointed institution for collecting, compiling and disseminating statistics, should take the leading position in the governance of the national statistics system regarding energy statistics. A proper organisation must be based on a clear definition of the rights and responsibilities of all the stakeholders involved in data collection and compilation. The establishment of formalised working arrangements among the involved stakeholders will contribute to a clear, efficient and sustainable governance of the national system of energy statistics.

The ITS project foresees the implementation of a specific regional activity that will also be implemented in other PCs.

The first activity will support organisation of a national meeting, which aims to coordinate the distribution of tasks and capacities within energy statistics system. This activity will support the establishment of coordination mechanisms within energy statistics system in Armenia in order to avoid duplication of tasks and responsibilities among main stakeholders and to ensure that work is based on minimum costs and efficient use of resources. This activity also involves the facilitation of the development of a **Memorandum of Understanding (MOU)** for cooperation on energy statistics agreed between the National Statistics Service of Republic of Armenia and other bodies involved in the energy statistics system.

The second activity will include support to a national **meeting, which aims to raise awareness among decision makers, relevant authorities, energy data suppliers and users on the importance of available, reliable, timely and transparent energy statistics for national policies.**

The duration and time plan for the regional activities listed above is presented in Table 5.3.a – Regional activities (RA1– Development/improvement of the Legal and Institutional Framework).

In addition, the NSS of the Republic of Armenia and other responsible statistical bodies have the possibility to additionally implement particular activity under the ITS technical assistance in order to improve institutional relationship and increase the capacity building on institutional organisation for energy statistics in Armenia (**ITS TA-1.3, ITS TA-1.4**). This should in turn result with the establishment of the permanent communication and discussions about energy data, and will help to establish concrete relationships between relevant stakeholders involved in the collection, compilation, protection and dissemination of energy data. Also, these activities will aim to reactivate a Working group on energy balances, which was established as inter-institutional body in Armenia. The functioning and extensions of the activities of this Working group were not recorded during the ITS expert team’s on-site mission.

In addition to the proposed activities listed above, the NSS must seriously consider the **need for additional statisticians** employed for energy statistics. It is estimated that at least two persons are needed for the complete energy data analysis. Without proper organisation of human capacities in the NSS it will be impossible to implement the activities the ITS proposed.

#### **4.2. Key area 2: Development of a reporting system based on international (IEA/ EUROSTAT) standards**

- **Capacity building on the EU and International Energy Statistics Standards**

Armenia is faced with an initiative and a plan to start developing energy statistics other than electricity balances. Taking into consideration that Armenia had compiled its last energy balance more than twenty years ago, additional education and training on the standards applied to energy measurement units, conversion equivalents can be provided by **implementing special activity ITS TA – 2.1**. This activity can be supported by ITS technical assistance. This activity will include the analysis of national classification systems (good, services, activities). These systems will be the ground for the implementation of all further activities and will contribute to the improvement of the energy statistics in Armenia.

- **Improvement of the methodologies for the collection, compilation, quality control and dissemination of energy statistics**

ITS expert team intends to conduct very detailed review of the methodologies and forms applied for the collection of data on electricity production and consumption.

On the basis of the energy statistics assessment and goals of the *Energy Sector Development Strategy*, it is recommended to Armenia to start with improvement of the statistics on energy supply. That means that the NSS of the Republic of Armenia should prepare a concept and a plan for the collection of other data, other than data on electricity production,

exports, imports and losses and involve other energy companies and stakeholders in the reporting system.

This specially applies to the companies, which import, export and distribute natural gas in Armenia (ArmRusGasProm, Transgas). The natural gas system also includes the operation of the underground gas storage.

Besides natural gas, the companies participate in the wholesale of oil and petroleum products with Georgia (Max Concern, Mika Limited, Flash and others). The data on import of petroleum products should be taken from the Customs Duty.

Beside statistics on energy supply, the NSS of RA should initiate development of the statistics on energy consumption. ITS expert team considers important the developing of additional separate and more precise questionnaires for particular subjects in the energy system, e.g. separate questionnaires for the specific categories in the final energy consumers group. The new questionnaires should include questions on not only electricity consumption, but consumption of other energy forms as well.

ITS expert team will review the possibility to include in the existing questionnaires questions about the consumption of other energy forms.

In that manner the ITS expert team proposes the implementation of the **ITS TA-2.2 activity with aim to improve methodologies for energy data collection, compilation, maintenance and dissemination with EU standards.**

Additional problem in the NSS's system for data collection, elaboration and publication is weak statistics on renewable energies. Armenia has significant potential in wind energy, biomass and solar energy so, according to the Energy Sector Development Strategy and planned actions, it is expected that these renewable energies will have a significant impact on the energy balance of Armenia. Collection of the data on renewable energies will certainly lead to more accurate energy statistics.

- **Adaptation of the existing surveys to the research on energy consumption**

Energy surveys on the final energy consumption in sub sectors are time- and resource-consuming activities, so in the case of Armenia such activities are not recommended before establishing the complete reporting system on energy supply. ITS expert team considers that during the years 2013 and 2014, the NSS should work mainly on the development of methodologies for the collection of energy supply data and on available statistical administrative data on final energy consumption.

In order to reuse the systems for data collection which are already available, other than energy data, which are active inside of the NSS, the ITS expert team suggests an analysis of the possibilities to include one question on energy in the regular surveys, for example, in the regular *Living standard measurement survey*. The extension of this survey with only one question on energy consumption could significantly contribute to the final energy consumption especially to the estimates of renewable energy uses. An **ITS TA activity (ITS TA - 2.4.)** is proposed for **analysing the questions and methods for their inclusion into the regular surveys in the household sector.**

### 4.3. Key area 3: Energy balances compilation and submission of the questionnaires to the IEA

The structure and the content of the electricity balance as described in the Chapter 3.5 does not correspond to the format of the annual questionnaires (IEA/EUROSTAT/UNECE), although it has the main structural components of (IEA/EUROSTAT/UNECE) balance.

In order to facilitate the energy balance compilation the ITS expert team proposes to provide assistance through the implementation of the following activities:

- **Assistance in the energy balance compilation** (ITS TA – 3.1) based on the international and European standards
- **Assistance for the adoption and application of a user-friendly, simple software tool** for energy balance compilation (ITS TA-3.2),
- **Assistance for the submission of the 5 questionnaires to the IEA and UNSD** (ITS TA 3.3)

The activities will include a three-day training on the international standards and forms applied on the energy balance compilation, application of the simple model for the energy balance compilation and derivation of five energy questionnaires and their submission to the IEA.

The implementation of the first two items can start in the third quarter of the 2013, and the result will be the energy balance for 2012. This will comply with the *Three-year Program of State Statistical Work for 2010 – 2012* and the NSS's commitment to develop energy statistics and energy balances in Armenia.

The assistance in the compilation of the five energy questionnaires and their submission to the IEA/EUROSTAT is expected by the end of 2013.

### 4.4. Key area 4: Development of a reporting system for monthly energy statistics

At the moment, the NSS of the Republic of Armenia collects only monthly data on electricity. It is suggested to the NSS to follow and participate in the common (horizontal) activities (workshops, study tours) where this topic will be particularly discussed and where it will be possible to learn from the good practice examples. This activity could be implemented during the year 2014, but it is not suggested to start with the monthly reporting prior to the implementation of the previously listed activities. The Action Plan foresees the need for additional technical assistance in this area, but not supported by the ITS project.

#### **4.5. Key area 5: Development of a reporting system on energy prices**

The NSS of the Republic of Armenia publishes energy prices according to the concept described in the Chapter 3.7. It is proposed to review the applied methodologies and to raise the level of compliance to International standards.

In Armenia the Public Services Regulatory Commission of Armenia (PSRC) sets the tariffs for electricity, thermal energy including natural gas, transmission, distribution, system operators, services provided in the energy market, and maximum tariffs for electricity and natural gas imports.

The NSS or any other stakeholders responsible for this type of reporting will have the possibility to learn about pricing reporting from the good practice examples during the common workshops, meetings and study tours. The Action Plan foresees the need for technical assistance in this area, but not to be supported by the ITS project at the moment.

#### **4.6. Key area 6: Development of a reporting system on energy and energy efficiency indicators**

The main energy indicators are related to data other than energy statistics, like national accounts (gross domestic product, value added, population, employed persons, etc.), trade and other statistics. The reliability and accuracy of these indicators depend on the quality and consistency of all input data.

It is suggested to the NSS of the Republic of Armenia to initially explore, during the year 2013, the availability of all the data needed for the calculation of main energy indicators, and to develop indicators according to the international methodologies. During 2014, the ITS project will implement several horizontal activities related to this topic, providing training on energy and energy efficiency indicators and on the modelling of energy data.

Development of the energy efficiency indicators requires much more sophisticated statistical and modelling procedures and skills, which, according to the current situation, cannot be realised in the planned project period. So, the ITS expert team did not envisage Technical assistance for this activity.

Energy efficiency indicators, besides depending on the energy consumption, depend on a number of other factors, and require the collection of additional data not available in main statistics. They are mostly based on the information gathered from the extensive surveys on energy consumption characteristics, the technology used, building characteristics and other factors in different consumption sectors (industry, transport, households, and services). Besides a statistical analysis, energy efficiency indicators require specific professional skills, like energy modelling and similar analytical skills related to the identification of the end-use energy consumption.



In 2014, following the joint INOGATE and IEA Energy Statistics and Indicators Training in Tbilisi, Georgia (5.-9. November 2012), the ITS project plan to implement additional regional activities related with this topic such as a study tour and regional workshops (RA 5).

The study tour will include, in addition to a visit to an advanced NSI in energy statistics and energy balances, a provision of a short training/workshop on energy and energy efficiency indicators (RA 5).

Also, in 2013 and 2014, during the international conference: *Achievement of the Energy Statistics Action Plans* and workshop (RA 6) the NSS of the Republic of Armenia will be able to observe the progress and improvement of the energy efficiency indicators in some Partner Countries, which are more advanced in such analyses.

The ITS project will disseminate project results on the official web page and during the implementation together with various other communication activities planned in the framework of the INOGATE project.

If, at the end of 2013, the NSS of the Republic of Armenia estimates that it can conduct specific surveys on energy consumption on its own, then in 2014 the Action Plan for that year will be updated with the estimation of the resources needed to provide only technical assistance for this activity. The ITS project estimates that an engagement of external technical assistance for this activity will be needed, however this technical assistance cannot be provided by the ITS project.

If, at the end of 2013, the NSS estimates that it can organise and conduct specific surveys on final energy consumption, then in 2014 the Action Plan for 2014 will be updated with the estimation of the resources needed for this activity. The ITS project foresees that an engagement of external technical assistance for this activity will be needed, however this technical assistance cannot be provided by the ITS project at the moment.

## 5. NEEDED RESOURCES FOR THE ACTION PLAN IMPLEMENTATION AND SUPPORT FROM THE ITS PROJECT

In order to achieve the goals described in the previous chapter, certain resources should be available to the NSS of the Republic of Armenia and other main stakeholders dealing with energy statistics so as to implement the proposed activities.

In this Action Plan, the resources are expressed in terms of:

- Total necessary expert **Technical assistance (TA)** for all the activities envisaged under this Action Plan (man/days),
- **ITS Technical assistance - ITS TA** (man/days) and **ITS Regional assistance - ITS RA**, as support to the implementation of selected activities,

- The engagement of **local experts (ITS - LE)** for the implementation of specific tasks within particular activities (man/days),
- The engagement of **human capacities (HC)** within the energy statistics system in a Partner Country, who will actively participate in the implementation of the Action Plan (man/days),
- The estimation of a Partner Country's needs for **new additional staff (NS)** in the field of energy statistics (man/year), in case there is no such staff or the existing capacities are not sufficient to implement the targeted activities.

The estimation of all resources necessary for the implementation of the Armenian Action Plan is presented in Table 5-1.

Total **Technical assistance (TA)** is based on the estimates of the necessary professional consultation services, expressed in man/day units. These services include on-site trainings, small workshops, personal education and provision of technical reports. **Technical assistance from the ITS project (ITS TA)** is the assistance in selected activities, which contributes the most to energy statistics progress. The engagement of **local experts** under the ITS project (**ITS LE**) is envisaged mostly for cases where the implementation of energy consumption surveys is planned. The implementation of this activity strongly depends on the existence of certain prerequisites, such as supporting Programs in the NSIs, available human resources, and others. In the case of Armenia, support to the surveys on energy consumption is not planned.

In order to ensure the implementation of the activities defined in the Action Plan, the PCs need to provide appropriate staff or **human capacities (HC)**, which will actively participate in the implementation of these activities. In the absence of such staff, the Action Plan estimates the needs for the employment of **new staff (NS)**, expressed in man units. In the case of Armenia, the employment of new personnel is crucial for the implementation of the ESAP.

**The total technical assistance in Armenia is estimated to 62 man/days, and the ITS project support can provide 49 man/days or 80% of the total necessary assistance.** During the ESAP implementation, National Statistics Service is required to make its staff for energy statistics available in the total amount of about 167 man/days. There is a need for employing additional staff in NSS for the energy statistics activities.

The breakdown of resources by key areas is shown in table 5-2, while more detailed schedule of the implementation of certain activities (both horizontal and vertical), including the breakdown of resources, is shown in the table 5-3 in Chapter 5.

**Table 5-1: Resources for the Armenian Energy Statistics Action Plan 2012 – 2015 implementation**

Years	2012			2013				2014			
	total	3	4	1	2	3	4	1	2	3	4
<b>Technical assistance (TA):</b>											
Total technical assistance, man/days	62	0	0	16	1	1	20	0	4	10	10
ITS TA, man/day	49	0	0	14	1	1	18	0	4	1	10
ITS LE, man/day	0	0	0	0	0	0	0	0	0	0	0
<b>Human capacities (HC) in Partner country</b>											
Total, man/day	167	0	0	43	3	3	60	0	12	16	30
<b>Additional employment</b>											
Total, man/year	2										

**Table 5-2:** Specification of the resources for Armenia’s Energy Statistics Action Plan 2012 – 2015 implementation

Years Quarters	2012			2013				2014			
	total	3	4	1	2	3	4	1	2	3	4
<b>TA 1. Development/improvement of Legal and Institutional Framework including:</b>											
TA, man/day	5	0	0	5	0	0	0	0	0	0	0
ITS TA, man/day	4	0	0	4	0	0	0	0	0	0	0
ITS LE, man/day	0	0	0	0	0	0	0	0	0	0	0
HC, man/day	10	0	0	10	0	0	0	0	0	0	0
<b>TA 2. Improvement of the data collection, compilation, management and analyzing in line with EU and international standards</b>											
TA, man/day	21	0	0	11	1	1	0	0	4	3	1
ITS TA, man/day	18	0	0	10	1	1	0	0	4	1	1
ITS LE, man/day	0	0	0	0	0	0	0	0	0	0	0
HC, man/day	63	0	0	33	3	3	0	0	12	9	3
Surveys on energy consumption, thous. €											
<i>Industry - 0 units</i>	0										
<i>Transport - 0 units</i>	0										
<i>Households - 0 units</i>	0										
<i>Service - 0 units</i>	0										
<i>Others (agriculture, construction...) - 0 units</i>	0										
<b>TA 3. Energy and commodity balance compilation in line with EUROSTAT/IEA methodologies</b>											
TA, man/day	29	0	0	0	0	0	20	0	0	0	9
ITS TA, man/day	27	0	0	0	0	0	18	0	0	0	9
ITS LE, man/day	0	0	0	0	0	0	0	0	0	0	0
HC, man/day	87	0	0	0	0	0	60	0	0	0	27
<b>TA 4. Development of the reporting system on energy prices</b>											
TA, man/day	5	0	0	0	0	0	0	0	0	5	0
ITS TA, man/day	0	0	0	0	0	0	0	0	0	0	0
ITS LE, man/day	0	0	0	0	0	0	0	0	0	0	0
HC, man/day	5	0	0	0	0	0	0	0	0	5	0
<b>TA 5. Development of the energy and energy efficiency indicators</b>											
TA, man/day	2	0	0	0	0	0	0	0	0	2	0
ITS TA, man/day	0	0	0	0	0	0	0	0	0	0	0
LE, man/day	0	0	0	0	0	0	0	0	0	0	0
HC, man/day	2	0	0	0	0	0	0	0	0	2	0
<b>TOTAL</b>											
TA, man/day	62	0	0	16	1	1	20	0	4	10	10
ITS TA, man/day	49	0	0	14	1	1	18	0	4	1	10
LE, man/day	0	0	0	0	0	0	0	0	0	0	0
HC, man/day	167	0	0	43	3	3	60	0	12	16	30

**Table 5-3: Energy Statistics Action Plan 2012 – 2015 for Armenia: Technical assistance (TA) and Regional activities (RA)**

				2012		2013				2014			
	Main stakehold.	Needed TA, man/days	ITS support, (ITS TA)	3	4	1	2	3	4	1	2	3	4
<b>TA 1. Development/improvement of Legal and Institutional Framework including:</b>													
1.1 Proposals for the appropriate legal framework													
1.2 Energy statistics strategies and programs (short/long-term)	NSS, MENR	1	yes										
1.3 Institutional relationship between main stakeholders	NSS, MENR	3	yes										
1.4 Capacity building on institutional organisation	NSS, MENR	1	yes										
1.5 Capacity building on the integration of the energy statistics and energy planning													
<b>TA 2. Improvement of the data collection, compilation, management and analysing in line with EU and international standards</b>													
2.1.Capacity building on EU and International Energy Statistics Standards													
Introduction of the EU standards into energy statistics system	NSS	1	yes										
2.2. Development/improvement of the reporting system													
Energy supply data (production, imports, exports, international marine bunker, stock )	NSS	3	yes										
Energy transformations (electricity and heat, petroleum products, coal derived fuels, LNG, CNG, ...)	NSS	3	yes										
Final consumption (industry, transport, non-energy, other sectors: residential, services, agriculture, .....	NSS	3	yes										
Dissemination of the improved forms, data collection and elaboration from energy reporting units	NSS	6	yes										
Monthly statistics (M-3), (M-1)	NSS	2											
2.3. Development/improvement of the surveys for the final energy consumption data collection:													
Industry													
Transport													
Households													
Service													
Others (agriculture, construction...)													
2.4. Adaptation of the existing surveys to the research on energy consumption	NSS	3	yes										

2.5 Reconstruction of the data from energy surveys in the years after the reference year

**TA 3. Energy and commodity balance compilation in line with EUROSTAT/IEA methodologies**

3.1. Compilation of the commodity balances (2011, 2012, 2013):

Electricity and heat	NSS	3	yes		
Natural gas	NSS	3	yes		
Oil	NSS	3	yes		
Solid fossil fuels and manufactured gas	NSS	3	yes		
Renewable and waste	NSS	3	yes		

3.2. Application of the simple tool for the energy balance compilation:

Application and adoption of the user friendly tool for the energy balance compilation	NSS	3	yes		
Energy supply data compilation	NSS	3	yes		
Energy transformation data compilation	NSS	3	yes		
Data on final energy consumption	NSS	3	yes		

3.3. Dissemination to annual energy questionnaires to IEA:

Electricity and heat, Natural Gas, Oil, Solid fossil fuels and manufactured gas, Renewable and waste	NSS	2	yes		
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3.4. Monthly energy statistics reporting

Dissemination of monthly energy balances (M-3), (M-1)

**TA 4. Development of the reporting system on energy prices**

4.1. Development of the methodology for:

a) gas prices reporting (industrial customers and households)	NSS	2			
b) electricity prices reporting (industrial customers and households)	NSS	2			
4.2. Dissemination of the reports on gas and electricity prices	NSS	1			

**TA 5. Development of the energy and energy efficiency indicators**

5.1 Review of the data available for energy indicators compilation, assessment of the needed data

5.1 Review of the data available for energy indicators compilation, assessment of the needed data	NSS	2			
5.2 Development of the methodology for energy indicators monitoring and verification					
5.3 Adaptation, training and application of the user friendly tool for the energy indicators calculation					

REGIONAL ACTIVITIES (RA)	Duration in days	2012		2013		2014	
		3	4	1	2	3	4
<b>RA 1: Development/improvement of the Legal and Institutional Framework</b>							
1st workshop: Energy Statistics Network meeting: Development of ESAP and establishment of ESN, 25-26 September 2012	2	■					
International Conference on Raising Awareness on the Importance of Energy Statistics for National Policies, April 2013	2		■				
Support to the national meeting on the importance of energy statistics for national policies	1			■			
Support to the national meeting on division of labour and data sharing among stakeholders	1			■			
<b>RA 2: Improvement of the data collection, compilation, management and analysing in line with EU and international standards</b>							
Study tour on energy statistics and balances with special emphasis on surveys on final energy consumption	5			■			
International conference on the quality of energy data	2				■		
<b>RA 3. Energy and commodity balance compilation in line with EUROSTAT/IEA</b>							
Study tour on energy statistics and balances with special emphasis on the development of the 5 energy IEA/EUROSTAT questionnaires	5				■		
<b>RA 4. Development of the reporting system on energy prices</b>							
This activity will be combined with RA 5. activity at a later stage of the project.							
<b>RA 5. Development of the reporting system on energy and energy efficiency indicators</b>							
Study tour on energy statistics and balances with special emphasis on energy efficiency indicators	5					■	
Study tour on energy statistics and balances with special emphasis on energy indicators and planning for the energy strategies						■	
<b>RA 6. Evaluation of the achieved results</b>							
International conference on the achievements in the Energy Statistics Action Plans	2						■
Workshop on the Achievement of Energy Statistics Action Plans & other activities	2				■		

## ANNEX 1 – LIST OF THE MEETINGS DURING THE INCEPTION MISSION

### Meeting with Resident Twinning Adviser, National Statistical Service

Participants:

- Mr. Thomas Bie, Resident Twinning Adviser, Governmental Bld. # 3, Yerevan, Armenia, Mob: (+374 95) 595394, E-mail: [tbi@dst.dk](mailto:tbi@dst.dk)
- Kevin McCann, ITS
- Gloria Aguinaldo, ITS

### Meeting with UNDP Armenia

Participants:

- Mrs. Diana Harutyunyan, UNDP Climate Change Programme Coordinator, Governmental Bld. # 3, Yerevan, Armenia, Tel: (+374 10) 583 920 (14), Fax: (+37410) 583 933, E-mail: [diana.harutyunyan@undp.org](mailto:diana.harutyunyan@undp.org); [diana@nature.am](mailto:diana@nature.am)
- Dr. Aram Gabrielyan, UN Framework Convention on Climate Change, National Focal Point, Republic of Armenia, Ministry of Nature Protection, Governmental Bld. # 3, Yerevan, Armenia, Tel: (+374 10) 583 932, Fax: (+374 10) 583 933, E-mail: [aramgabrielyan@yahoo.com](mailto:aramgabrielyan@yahoo.com); [aram@nature.am](mailto:aram@nature.am), Websites: [www.nature-ic.am](http://www.nature-ic.am)
- Gloria Aguinaldo, ITS

### Meeting with Energy Strategy Centre, Armenian Scientific Research Institute of Energy (extended meeting)

Participants:

- Dr. Tigran Gnuni, First Deputy Director on Science, Honoured Power Engineer of NIS, CJSC ‘Scientific Research Institute of Energy’, 5/1, Myasnikyan av., Yerevan, RA, 0025, Tel: (+374 10) 559 829, Fax: (+374 10) 559 569, E-mail: [Tigran.Gnuni@energint.am](mailto:Tigran.Gnuni@energint.am)
- Dr. Vahan H. Sargsyan, CJSC ‘Scientific Research Institute of Energy’, 5/1, Myasnikyan av., Yerevan, RA, 0025, Tel: (+374 10) 559 724, Fax: (+374 10) 559 664, Mob: (+374 91) 909 186, E-mail: [Vahan.Sargsyan@energinst.am](mailto:Vahan.Sargsyan@energinst.am), Website: [www.energinst.am](http://www.energinst.am)
- Gloria Aguinaldo, ITS



- Alenka Kinderman Lončarević, EIPH

### **Meeting with National Statistical Service of the Republic of Armenia**

Participants:

- Mr. Gagik Anayan, Member of the State Council on Statistics, National Statistical Service, Phone: : (+374 10) 524340, 524213, Fax: (+374 10) 521921, E-mail: [ananyan@armstat.am](mailto:ananyan@armstat.am)
- Ms. Anahit Safyan, Head of the Division for the International Cooperation in Statistics, National Statistical Service, Phone: (+374 10) 524460, Fax: (+374 10) 521921; E-mail: [info@armstat.am](mailto:info@armstat.am)
- Ms. Asmik Akopyan, Chief Specialist of Industry Statistics Division, National Statistical Service, Phone: (+374 10) 523543, Fax: (+374 10) 521921, E-mail: [ashot@armstat.am](mailto:ashot@armstat.am)
- Mr. Vahan Oganosovich Sargsyan, Director of Energy Strategy Centre, Armenian Scientific Research Institute of Energy, Cell: (+374 91) 909186, Phone: (+374 10) 559664, E-mail: [vahan.sargsyan@energinst.am](mailto:vahan.sargsyan@energinst.am)
- Gloria Aguinaldo, ITS
- Alenka Kinderman Lončarević, EIPH
- Anna Petrus, ITS

### **Meeting with National Statistical Service of the Republic of Armenia (ad hoc meeting)**

Participants:

- Mr. Ashot Anayan, Head of Industry Statistics Division, National Statistical Service, Phone: (+374 10) 523543, Fax: (+374 10) 521921, E-mail: [ashot@armstat.am](mailto:ashot@armstat.am)
- Ms. Asmik Akopyan, Chief Specialist of Industry Statistics Division, National Statistics Service, Phone: (+374 10) 523543, Fax: (+374 10) 521921, E-mail: [ashot@armstat.am](mailto:ashot@armstat.am), Website: [www.armstat.am](http://www.armstat.am)
- Gloria Aguinaldo, ITS
- Alenka Kinderman Lončarević, EIPH
- Anna Petrus, ITS

## ANNEX 2 – AREAS FOR TECHNICAL ASSISTANCES UNDER THE ITS PROJECT

### 5.1. List of the activities

Key area	Indicative Technical Assistance under the ITS
<b>TA-1</b> <b>Development/improvement of the Legal and Institutional Framework</b>	<p><b>TA-1.1.</b> Development of the appropriate legal framework for energy statistics (laws, sub laws, strategies, plans)</p> <p><b>TA -1.2.</b> Development of long-term energy statistics strategies and programs for data collection and compilation</p> <p><b>TA-1.3.</b> Improvement of institutional relationship on energy statistics</p> <p><b>TA-1.4.</b> Capacity building on the institutional organisation for energy statistics</p> <p><b>TA-1.5.</b> Capacity building on the integration of energy statistics and energy planning procedures</p>
<b>TA-2</b> <b>Improvement of the data collection, compilation, management and analysing in line with EU and international standards</b>	<p><b>TA-2.1.</b> Capacity building on the EU and International Energy Statistics Standards</p> <p><b>TA- 2-2.</b> Improvement of the methodologies for the collection, compilation, control and dissemination of energy statistics</p> <p><b>TA - 2.3.</b> Assistance/capacity building during the organisation and implementation of the surveys on final energy consumption, provision of a user-friendly tool for the management and compilation of energy data gathered from the surveys</p> <p><b>TA – 2.4</b> Adaptation of the existing (household) sector surveys to the research on energy consumption</p> <p><b>TA – 2.5.</b> Reconstruction of data from the energy surveys in the years after the reference year</p> <p><b>TA – 2.6.</b> Support to the Covenant of Mayor initiatives</p>
<b>TA-3</b> <b>Assistance in the compilation of energy and commodity balances</b>	<p><b>TA – 3.1.</b> Assistance in the completion of the national energy balance for (2011, 2012 or 2013) and harmonization with EUROSTAT/IEA methodologies and standards;</p> <p><b>TA – 3.2.</b> Adaptation and training in the application of a user friendly software tool for energy balance compilation;</p> <p><b>TA – 3.3.</b> Compilation of annual energy data in defined questionnaires and submission to the EUROSTAT/IEA.</p> <p><b>TA – 3.4.</b> Development of monthly energy data reports compliant with EUROSTAT/IEA standards (M-1, M-3)</p>

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TA-4	<b>Development of a reporting system on energy prices</b>	<b>TA – 4.1.</b> Development of a methodology for gas prices reporting <b>TA – 4.1.</b> Development of a methodology for electricity prices reporting <b>TA – 4.2.</b> Reporting on gas and electricity prices
TA--5	<b>Development of a reporting system on energy (efficiency) indicators</b>	<b>TA – 5.1.</b> Review of data available for energy indicators compilation, assessment of the needed data <b>TA – 5.2.</b> Development of a methodology for energy (efficiency) indicators monitoring and verification <b>TA – 5.3.</b> Adaptation, training and application of a user friendly tool for calculating energy (efficiency) indicators

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## 5.2. Brief description of the indicative Technical assistances (TA) under the ITS project

### TA- 1. Development/improvement of the Institutional and Legal Framework

#### TA -1.1. Proposals for the appropriate legal framework for energy statistics

This activity aims to identify gaps in the existing legal framework for the collection, compilation, maintenance, dissemination and confidentiality of energy data, and to propose the content of new laws.

#### TA -1.2. Assistance in the development of long-term energy statistics strategies and programs for a timely and reliable data collection and compilation

This activity includes proposals for the development of the following programs:

- collection and compilation of data from energy suppliers, energy industries, energy consumers (final energy consumption surveys);
- elaboration of the procedures for the collection of data from intermediate sources, analysis of the overlapping with other requests;
- development of a list of required activities and identification of the stakeholders involved in their implementation.

#### TA -1.3. Development of the institutional organisation

The establishment of an appropriate institutional organisation among relevant stakeholders involved in the collection, compilation, standardisation and dissemination of energy statistics is crucial for the “energy statistics system effectiveness” and will result in the following:

- a data collection system based on “minimum cost” and on the avoidance of the duplication of the stakeholders’ work,
- coordination mechanisms for monitoring the performance of the national energy statistics system,
- additional motivation of relevant stakeholders to actively participate in the system.

#### TA -1.4. Capacity building on the institutional organisation for energy statistics

This activity will be implemented by organising common meetings with relevant stakeholders in order to provide capacity building in the NSI and of other staff involved in the NSS:

- educating statisticians/experts in the NSIs, the responsible ministries, energy suppliers and industries, energy agencies/committees, energy planning and policy commissions about their roles and obligations in the institutional organisation,

- initiating common discussions and a dialogue about the national statistics legislation or relevant administrative regulation and institutional organisation, in order to establish a solid foundation for a good quality and timely energy statistics,
- increasing the awareness on the importance of timely and reliable energy data.

#### TA -1.5. Capacity building on the integration of energy statistics and energy planning procedures

The aim of this activity is to additionally educate experts and statisticians from the NSIs, responsible ministries, energy suppliers and industries, energy agencies/committees, energy planning and policy commissions about the importance of the integration of methodologies applied to short-term and long-term energy planning and of an accurate, reliable and timely reporting of the official energy statistics and balances.

### **TA -2. Improvement of the energy data collection, compilation, maintenance and dissemination in line with EU and international standards**

#### TA -2.1. Capacity building on the EU and International Energy Statistics Standards

This activity will provide trainings in the standards applied to energy measurement units and conversion equivalents, energy commodity flows relevant in energy statistics: production, external trade, international marine bunkers, stocks, fuel transformation and final consumption.

#### TA -2.2. Improvement of the methodologies for the collection, compilation, quality control and dissemination of energy statistics

The following list of activities comprises actions, which will be provided through on-site training and expert assistance for:

- detailed identification of energy flows in the production, supply, transformation and consumption sectors,
- development/improvement of forms for administrative energy data reporting (annual, quarterly, monthly),
- development/improvement of information collecting from statistical data sources (census, surveys),
- development of data compilation methods: data validation and editing, calculation of missing data, estimation of population characteristics,
- development of a database for the organisation and management of energy data,
- development of a dissemination policy (reference period and data dissemination timetable, dissemination formats, metadata and quality reports).

#### TA -2.3. Assistance during the organisation and implementation of the surveys on final energy consumption

The following list of activities comprises actions that can be provided through on-site training and direct expert assistance for the following:

- definition of the sample size and the selection of a sample, the design of the questionnaire, training and education of interviewers, development of a database for the organisation of data, analysis procedure, final energy balance compilation,
- adoption of a model for the validation, editing, calculation of missing data and estimation of the final energy consumption ,
- target sectors: industry, households, services, transport, construction, agriculture,
- identification of actual consumers, e.g. in the household sector.

#### TA -2.4. Adaptation of the existing surveys in the household sector to the research on energy consumption

In cases where the NSI conducts a regular, periodical (annual) survey in households on living standards, consumption etc., and where surveys on energy consumption are not envisaged in the Action Plan, a proposal for adding specific questions to the questionnaires applied in these surveys will be developed, as well as a methodology of elaborating the data gathered and the results achieved.

#### TA -2.5. Reconstruction of data from energy surveys in the years after the reference year

In cases where the energy consumption surveys will be implemented, in the years after the reference year, a calibration of data on energy consumption from the surveys and of updated data collected from administrative and other sources will be performed through on-site training and assistance.

### TA- 3. Energy balance compilation

#### TA -3.1. Assistance in the completion of the national energy balance, harmonisation with EUROSTAT/IEA methodologies and standards

This includes on-site training and assistance in the development of the framework for the compilation and harmonisation of data on fuel and energy products during the reference period.

#### TA -3.2. Adaptation and training in the application of a user-friendly model (software tool) for the energy balance compilation

This includes the development of a user-friendly tool for energy balance compilation, as well as the training of the staff in the NSS and providing instructions on its use. The tool will work as an open source model, which enables the presentation of energy data in a table format (columns – energy products, rows – energy flows).

### TA -3.3. Compilation of annual energy data in defined questionnaires and submission to the EUROSTAT/IEA

This activity envisages capacity building and assistance in the completion of the five joint Eurostat/IEA annual energy questionnaires for the years 2012/2013.

### TA -3.4. Development of monthly energy data reports compliant with EUROSTAT/IEA standards (M-1, M-3)

This activity will result in the development of appropriate methodologies for the reporting of monthly energy data, in line with the Regulation 1099/2008 on energy statistics, and of their reporting to the IEA.

## TA – 4. Development of a reporting system on energy prices

### TA -4.1. Development of a methodology for gas prices reporting

This includes the development of appropriate methodologies for the collection and compilation of gas energy prices, according to the Directive 2008/92/EC on the transparency of gas and electricity prices charged to households and industrial end-users.

### TA -4.2. Development of a methodology for electricity prices reporting

This includes the development of appropriate methodologies for the collection and compilation of electricity prices, according to the Directive 2008/92/EC on the transparency of gas and electricity prices charged to households and industrial end-users.

## TA – 5. Energy (efficiency) indicators compilation and monitoring

### TA -5.1. Review of data available for energy indicators compilation

This activity intends to review all available data in the NSI, energy agencies and other institutions, in order to evaluate the possibility for the development of energy indicators. This will include possibilities for the compilation of energy efficiency indicators, basic indicators on the security of supply, environmental issues etc.

### TA -5.2. Provision of methodology for energy (efficiency) indicators monitoring

On the basis of available data and of a plan for gathering new data, a clear and transparent methodology for monitoring and verifying energy savings and improving energy efficiency will be developed.

#### TA -5.3. Development of a user-friendly tool for calculating energy (efficiency) indicators

The PCs will be provided with an easy-to-use and cost-effective tool for calculating energy (efficiency) indicators.

#### TA -5.4. Training in the use of the methodology and software for the energy (efficiency) indicators compilation

This activity will result in providing the representatives of the institutions competent for monitoring and verification of energy savings with training in using this methodology.



## ANNEX 3 – INDICATORS FOR MONITORING THE ESAP'S IMPLEMENTATION AND SUCCESS

ACTIVITY	status 9/2012	status 09/2013
<b>Development / improvement of Legal and Institutional framework</b>		
Number of needed new or improved legal documents (primary and secondary) related to energy statistics	0	
Available methodology for the energy statistics and energy balances compilation harmonized with IEA/EUROSTAT standards (yes/no)	yes	
Number of needed short/long-term development plans for energy statistics	0	
Number of experts and statisticians employed in energy statistics in the NSS and the NSI (central and regional offices)	?	
Number of experts and statisticians educated during the workshops/seminars organised by the IEA/EUROSTAT or other relevant institutions during the last five years	?	
Number of common meetings among the key energy statistics stakeholders (data collectors and providers) held during the last five years in order to discuss energy statistics issues/energy efficiency issues.	??	
<b>Improvement of the data collection, compilation, management and analyses in line with EU and international standards</b>		
Applied International standards on economic activities and International standards on products and services in energy statistics (yes/no)	yes	
Number of forms officially applied in the collection of energy data/number of forms to be improved/number of new forms needed	7/3/4	
Developed and implemented methodology of the surveys on energy consumption during last 5 years in (yes/no):		
- household sector	no	
- industry sectors	no	
- services	no	
- agriculture/construction	no	
<b>Assistance in energy and commodity balance compilation</b>		
Compilation of energy and commodity balances harmonized with EUROSTAT/IEA standards	no	
Needed application of a simple software tool for energy balance compilation (yes/no)	yes	
Submission of the energy questionnaires in defined formats to the IEA (0-5)	0	
Number of improved energy questionnaires submitted to the IEA	0	
Short-term (monthly) energy statistics compiled in line with the EC Regulation 1099/08	no	
<b>Development of a reporting system for energy prices</b>		
Reporting on electricity and gas prices (yes/no)	no	
<b>Development of energy (efficiency) indicators</b>		
Available special methodology and a simple software tool for the compilation of the disaggregated energy efficiency indicators	no	
Number of energy efficiency indicators defined in the current methodologies/number of energy efficiency indicators needed	1/35	

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## ANNEX 4 – CONTACT DETAILS

Contact details of the person(s) who reviewed Draft /Proposal:

**Institution:** NATIONAL STATISTICAL SERVICE of the REPUBLIC of ARMENIA  
**Address:** Government Building 3, Republic Sq., Yerevan, 0010, Armenia

**Name and Surname:** Mr. Ashot Ananyan  
**Department:** Industrial Statistics Unit  
**Position:** Head of Unit  
**Date:** 16/02/2013

**Institution:** NATIONAL STATISTICAL SERVICE of the REPUBLIC of ARMENIA  
**Address:** Government Building 3, Republic Sq., Yerevan, 0010, Armenia

**Name and Surname:** Ms. Hasmik Hakobyan  
**Department:** Industrial Statistics Unit  
**Position:** Chief Specialist  
**Date:** 16/02/2013

## ANNEX 5 – PROPOSED MANNER OF ADOPTION OF ESAP

Please choose any of the following:

- Memorandum of understanding (MoU)** - a formal alternative to a gentlemen's agreement between the National Statistical Institute (NSI), Ministry responsible for policy making in the energy sector and the INOGATE Technical Secretariat on the implementation of the Energy Statistics Action Plan.
  
- Document of approval to be signed by responsible authorities in the NSI and Ministry will be enclosed with the final ESAP.
  
- Other manner of adoption, please suggest:  
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