INOGATE PROGRAMME

ACTIVITIES, RESULTS AND IMPACT OF THE EUROPEAN UNION’S INOGATE PROGRAMME

JUNE 2015

ARMENIA, AZERBAIJAN, BELARUS, GEORGIA, KAZAKHSTAN, KYRGYZSTAN, MOLDOVA, TAJIKISTAN, TURKMENISTAN, UKRAINE, UZBEKISTAN

Multi-Annual Report
2012-2014
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Note: In this report, the Republic of Moldova is referred to as “Moldova” and the Kyrgyz Republic as “Kyrgyzstan”.

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FOREWORD
by the European Commission

Increasing security of energy supply while reducing the carbon footprint is a top priority on the political agenda of the European Union as well as on that of its partners in the Neighbourhood. International cooperation in the energy sector is therefore key. The EU has a keen interest in promoting reforms aimed to strengthen security of energy supply, to diversify sources of supply, to increase energy efficiency and promote renewable energy within the EU and in partner countries.

This applies in particular to the cooperation of the EU with the Neighbourhood East and Central Asia. Rich of abundant hydrocarbon reserves, this region is emerging as an important contributor to global energy supplies and thus to world energy security. A well-developed national policy framework, targeted investments, and improved energy management practices, focusing particularly on energy efficiency and inspired by successful experiences in the Member States of the EU, are needed to satisfy the growing demand for energy in a sustainable way.

The EU-funded INOGATE programme which brings together 11 countries of Eastern Europe, Caucasus and Central Asia and focuses on security of supply, energy market convergence, sustainable energy and investments, provides an efficient framework for the necessary international cooperation. INOGATE has been one of the main Development and Cooperation instruments used to deliver on the goals set under the Baku Initiative (2004) and the Astana Energy Roadmap (2006).

However, the picture and the role of the region have drastically changed since the programme was set up in 1996. We have assisted to asymmetric developments and a diversity of preferences in the energy sector has emerged, based on each country’s political and economic interests and aspirations. Georgia, Moldova and Ukraine have signed an EU Association Agreement with provisions for Deep and Comprehensive Free Trade Agreements in 2014. In addition, Ukraine and Moldova became also members of the Energy Community, while Georgia is a candidate and Armenia has observer status. At the same time, these four countries are, together with Azerbaijan and Belarus, members of the Eastern Partnership. The countries east of the Caspian Sea have substantially strengthened economic and trade ties with markets in Asia.

In this complex set up, INOGATE has supported regional activities as well as country-specific activities, always responding to the needs of participating countries. Almost 20 years after the kick-off of the programme, this multi-annual report allows us to measure the impact of such joint efforts. To mention just a few of the many achievements presented in this document: the improvement of partner countries’ expertise in the collection and use energy statistics, essential for the definition and implementation of sound and result oriented energy policies; the adoption of specific legislation, establishment of clearer targets and increased awareness in energy efficiency and renewable energy; the translation and adoption by partner countries of international electricity and gas standards; the significant reduction of gas losses in Central Asia.

Christian Danielsson
Director General for Neighbourhood and Enlargement Negotiations
Welcome to our Multi-Annual Report which covers the activities, results and impact of the EU’s INOGATE Programme that were achieved during 2012 to 2014. These last three years have witnessed many changes to the INOGATE Programme, as a whole, and to the INOGATE Technical Secretariat (ITS) in particular, both in terms of its focal areas and in the ways it works with its Partner Countries.

In 2012, the mandate of the Secretariat was expanded to include technical advisory activities in addition to its established coordination and communication activities. The introduction of energy statistics as a new area of work with Partner Countries also started in 2012. This proved to be an untapped area of work and it has produced rich and promising results in a relatively short period. The Secretariat also extended and broadened its reach with expanded offices in Ukraine and Georgia and a strong country network of experts in each country.

This Multi-Annual Report presents INOGATE in facts and figures. It provides the big picture, describing its activities, results and impact by thematic area and includes the priority areas for 2015-2016.

In 2014, the INOGATE Technical Secretariat, in close cooperation with the European Commission and its Partner Countries, undertook a review of lessons learnt and working procedures which culminated in the adoption of new ITS strategy and regional and country work plans by the Partner Countries at the INOGATE Annual Meeting in October 2014. The main idea behind this new strategy was to focus INOGATE’s assistance on areas of work that were producing most results and that demonstrated commitment to implementing reforms by beneficiaries as a result of receiving this assistance. The Secretariat has been given an extension until April 2016 in order to implement the priority activities in the agreed regional and country work plans. The Secretariat aims to consolidate results and bring to a successful close the 20-year legacy of the INOGATE Programme, with the maximum possible value for its Partner Countries.

We hope this report gives you a feel for the important contribution we believe INOGATE is making to the Partner Countries in ensuring energy security for its citizens – as well as affordable, reliable and clean energy.

Adrian Twomey
Team Leader
**INOGATE HIGHLIGHTS**

INOGATE is one of the longest-running energy technical assistance programmes funded by the European Union, working within the policy frameworks of the Baku Initiative and the Eastern Partnership. It cooperates with 11 Partner Countries from the Eastern Partnership and Central Asia to support a reduction in their dependency on fossil fuels and imports, improve the security of their energy supply and mitigate overall climate change.

**HIGHLIGHTS OF INOGATE RESULTS OVER THE YEARS:**

- **INOGATE delivered** over 200 draft regulatory documents and technical reports, analysing and recommending improvements to the legislative and regulatory framework in the energy sector in Partner Countries. Over half of these have been transposed into new regulations.

- **INOGATE helped** several Partner Countries improve their tariff methodologies, making them more cost-reflective. A regional study on tariff methodologies provided recommendations to improve the methodologies; together with targeted support, these actions have resulted in tariff reform measures being taken by Armenia, Azerbaijan and Moldova.

- **INOGATE has stimulated** a promising dialogue for improving electricity cross-border trade both in the Caucasus and in Central Asian regions. In the Caucasus, the dialogue is expected to result in a roadmap for the southern Caucasus electricity market, while in INOGATE facilitation has led Central Asian countries to seriously consider the introduction of the EU methodology for inter-TSO (transmission system operator) compensation mechanisms.

- **INOGATE pioneered** gas loss reduction in Central Asia by introducing modern gas technologies and methodologies. This resulted in a reduction of gas leakages in the transmission system of about 15 billion cubic metres (bcm) over four years (2010-2014), a saving of almost EUR 3 billion.

- **INOGATE facilitated** the adoption of modern and cost-effective methodologies and practices to reduce technical gas losses in the transmission infrastructure by the gas companies in Partner Countries. Georgia, Tajikistan and Uzbekistan, particularly, adopted new practices in identifying, estimating and reducing technical gas losses following the recommendations of a regional study developed by INOGATE.

- **INOGATE enabled** the adoption of 15 regulatory framework documents related to national environmental legislation in the oil and gas sector of Central Asian countries.

- **INOGATE published** a ground-breaking status report in 2012 measuring progress made by Partner Countries against the agreed objectives of the Baku Initiative. Between 2012 and 2014, INOGATE cooperated with the International Energy Agency (IEA) to upgrade this report to a new compendium publication which provides insight on the energy policies and sector developments of Partner Countries for use by the international community and potential investors.

- **INOGATE opened up** the path for harmonisation of energy standards in Partner Countries by facilitating the understanding of over 100 priority gas standards and by supporting the creation of technical committees for standardisation in Partner Countries. Over 350 gas and electricity standards have been since adopted.

- **INOGATE provided** the tools and methodologies for data collection and compilation of all energy statistics (annual and monthly), balances and energy efficiency indicators between 2012 and 2014. This is making energy statistics in Partner Countries more reliable and facilitating evidence-based energy planning.
INOGATE PROJECTS
Projects active in the period 2012-2015

February 2012 – April 2016
Budget: €19,576,230
www.inogate.org

New INOGATE Technical Secretariat and integrated programme in support of the Baku Initiative and the Eastern Partnership energy objectives

The INOGATE Technical Secretariat (ITS) builds in-country capacity and gives technical and regulatory advice on energy security, energy markets development and operations; implementation of energy efficiency and renewable energy policies; energy planning through the use of improved energy statistics; energy efficiency and renewable energy investments. The short- and medium-term technical assistance, provided at regional and country level, is featured in this report.

April 2013 – April 2016
Budget: €4,000,000
www.casepresee.org

Sustainable Energy Programme for Central Asia: Renewable Energy Sources – Energy Efficiency (CASEP)

This project is improving the preconditions for regional integration of an efficient and sustainable energy system by facilitating the creation of legal and regulatory frameworks in Central Asia for introducing energy efficiency and the use of renewable energy sources.

September 2011 – July 2015
Budget: €2,150,000
www.covenantofmayors.eu

Supporting the participation of Eastern European and Central Asian Cities in the ‘Covenant of Mayors’

The Covenant of Mayors is a European Commission initiative launched in February 2008 to seek the commitment of local and regional authorities in reaching the EU 2020 energy and climate goals. This successful instrument has been extended to the east (COMO-East) in 2011. So far, 150 cities from Eastern Europe, the South Caucasus and Central Asia have joined the community of 6,200 signatories.

January 2010 – March 2014
Budget: €4,449,650
www.inogate.org

Energy Saving Initiative in the Building Sector in Eastern Europe and Central Asia (ESIB)

The ESIB project provided key legislative support for the development and enforcement of energy efficiency legislation in the building sector, including housing and condominium policy and homeowners’ association legislation. Its 22 demonstration projects ranged from energy audits and retrofitting designs through to development of investment-grade projects for financing under energy efficiency credit lines.

December 2008 – December 2012
Budget: €9,310,000
www.moseff.org

Identification and Promotion of Energy Efficiency Investments (Moldova & Ukraine)

INOGATE funds were used as grants to support the EBRD’s Moldovan Sustainable Energy Financing Facility (MoSEFF) in the amount of EUR 6.06 million and the Ukraine Energy Efficiency Programme (UKEEP) in the amount of EUR 3.25 million. By the end of 2014 the MoSEFF programme had financed 152 projects with a combined loan volume of EUR 31.25 million. The financed projects save 24.5 GWh in electricity and 95 GWh in fuel, corresponding to savings of about 300 GWh in terms of primary energy and a reduction of 66,000 tonnes of CO₂ emissions.

INOGATE COORDINATION

The INOGATE Programme is coordinated by the European Commission and the respective ministries in charge of energy in Partner Countries through their appointed Country Coordinators. Annual meetings and project steering committees allow projects to be aligned and to respond to Partner Country needs.

Two complementary coordination mechanisms, introduced in 2012, support this infrastructure: the Energy Statistics Network and Technical Expert Groups, linking the technical assistance and capacity building to the people who will be responsible for leading and implementing reforms in their countries. A network of country experts, one in each Partner Country, ensures the closest possible cooperation with local stakeholders.

INOGATE VISIBILITY

The INOGATE website (www.inogate.org) has been redesigned to make it more user and search-friendly, improving accessibility to its extensive content collected over 18 years! Information on activities and materials produced can be searched by project, by country and by thematic area.
Rising concerns over global warming and depletion of fossil fuels have created growing awareness of global energy and environmental challenges and influenced the energy policies of many countries. The development of innovative strategies and policy instruments are needed in order to reduce greenhouse gas emissions. Moving to low carbon economies through sustainable energy development requires, in turn, the introduction of more efficient technologies, a more efficient use of existing energy sources and an appropriate framework for competitive markets.

Working closely with the ministries and state agencies in its Partner Countries, the Secretariat shares the best EU practice in energy policies, structures and technologies, strengthens the capacities of institutions and helps governments to develop viable energy policies and regulations to enhance energy security, competitive energy markets and economic growth, and promote sustainable development.

Regionally, an INOGATE workshop and study tour to Vienna, Austria and Bratislava, Slovakia (2013), raised awareness on the role of an independent energy regulatory authority in the electricity and gas sector, which is necessary in the medium term for fairer and more transparent markets. EU tariff setting methods were combined with strategies for reforming Partner Countries’ tariff systems and methodologies to take into account socially vulnerable groups. Regional seminars addressed cross-border trade, with an emphasis on trade in electricity (Brussels, 2013) and on gas (Venice, 2014). A regional study tour on bio-energy and policies in sustainable energy and renewable energies improved the capacity of the participants to develop and to carry out effective and profitable operations in the area of bio-energy.
Armenia: A set of commercial quality indices and proposals were included in new relevant secondary legislation and have improved the quality of service for consumers.

Azerbaijan: A road map on district heating until 2020 is being developed to create greater efficiency and an environment for increased investment; this has not yet been adopted.

Belarus: Current legislation to promote renewable energy in heat and electricity generation has been improved.

Georgia: The first 10-year transmission network development plan prepared by Georgian State Electric (GSE) in its capacity as the transmission system operator (TSO) was reviewed. INOGATE assisted the Ministry of Energy in understanding the implications for electricity and gas markets as a result of joining the Energy Community. Ministry staff were also trained on applying EU directives and legally binding obligations for sustainable energy, renewable energy sources and energy efficiency.

Kazakhstan: Legal, economic and technical recommendations were developed regarding generation adequacy, a system to test the feasibility of responding to its own long-term demand, as well as for cross-border trading with its neighbours. Through the CASEP project, it has created a legal and regulatory framework for promoting energy efficiency and a feed-in tariff for various types of renewable energy sources, creating a more favourable investment climate.

Kyrgyzstan: The country fuel and energy balance was compiled and analysed; the results are included in Kyrgyzstan’s new Energy Strategy for 2035.

Tajikistan and Kyrgyzstan have been aided by CASEP to develop national strategies for renewable energy and energy efficiency to create favourable conditions for the development of sustainable energy.

INOGATE’s assistance and support to Georgia substantially facilitated the process of becoming a full member of the Energy Community Treaty.

George Gegechkori, Head of International Relations Department at the Georgian Ministry of Energy

COUNTRY ACHIEVEMENTS

INOGATE and INOGATE-related energy projects have provided technical assistance in response to country requests for support. Some highlights of these activities and the results achieved are set out below. Unless otherwise indicated, all projects were carried out by the INOGATE Technical Secretariat.

SPOTLIGHT ON INOGATE RESULTS & IMPACT

A major thrust of INOGATE is to promote the membership of its Partner Countries in the Energy Community Treaty. The signatory country commits itself to implementing the relevant EU energy acquis communautaire, developing an adequate regulatory framework and liberalising its energy market.

Responding to Georgia’s request, INOGATE held a workshop for 28 high-level decision makers to help them understand the legal requirements of membership. On 20 February 2014, the European Commission and Georgia launched negotiations for Georgia’s accession to full membership.

These preparations will result in Georgia completing its membership negotiations by 2016 and INOGATE continues to facilitate this process. “This assistance is very important” says George Gegechkori, Head of International Relations Department at the Energy Ministry. “We are working with oil, electricity and gas suppliers and try to introduce changes carefully. Their contractual obligations will be considered so as not to harm the industry.”

“INOGATE has been very trustworthy and helpful advisor to the Ministry of Energy over the last couple of years. Their assistance and support to Georgia substantially facilitated the process of becoming a full member of the Energy Community Treaty.”
INOGATE Programme | Multi-Annual Report 2012-2014

ENERGY MARKETS

CONTEXT

All INOGATE Partner Countries face increasing challenges in providing affordable and reliable energy for all their users. National and regional energy markets must be competitive to give energy companies an incentive to provide better products and services and to give consumers choice.

To enable an increased flow of electricity and gas between the Partner Countries, a high degree of inter-connection is required. Electricity and gas market rules in each country must be amended to encourage cross-border trading and flows. Important existing barriers to cross-border cooperation include the different level of liberalisation of national markets in electricity and gas, as well as the continuing aim of each Partner Country to acquiring energy independence.

INOGATE assists Partner countries in achieving the greatest approximation of their electricity and gas legislation, both primary and secondary, to that of the European Union, thus opening their markets to competition and investment. Regional optimisation of resources is an integral objective of this process of convergence of national markets to the EU framework.

REGIONAL ACHIEVEMENTS

INOGATE supports a framework for improving cross-border trade and cooperation in the electricity and gas sectors for the three regional markets – Eastern Europe, the Caucasus and Central Asia. The activities of Partner Countries vary and the investment required is substantial. Regional cooperation has increased with Central Asia becoming more conscious of the cooperation required. INOGATE also promotes networking and exchange of experiences with European organisations such as the European network of transmission system operators for electricity (ENTSO-E) and the European network of transmission system operators for Gas (ENTSO-G). INOGATE workshops and study tours have increased awareness of the role of an independent energy regulator and provided methodology and strategies for tariff reform, while considering vulnerable groups, leading to a greater use of sustainable energy and a broader mix of energy. In Central Asia, INOGATE training and dialogue facilitation have led Central Asian countries to seriously consider the introduction of the EU methodology for inter-TSO (transmission system operator) compensation mechanisms, helping to restore electricity flows in Central Asia.
Armenia, Belarus and Kyrgyzstan received support in reviewing their grid connection procedures to improve functioning for investment in renewable energy sources. Armenia has now proposed rules on connection to the electricity and gas networks to improve distribution.

Georgia: The internal electricity market was analysed and reviewed and a new model compliant with the 3rd Energy Package of the European Union was proposed. Georgian State Electric (GSE) worked with INOGATE to present a 10-year transmission network development plan similar to those prepared by EU TSOs and the ENTSO-E. This development will bring greater transparency and aid investment-related decision-making. It will also lead to improved cross-border trade and increased reliability of the electricity supply.

Kyrgyzstan: Rules for connecting consumers and suppliers to electricity and gas distribution networks and renewable energy sources were developed, thus encouraging investment by setting out a clear framework for investors. The role of the energy regulator is also being strengthened by development of a legislative and regulatory framework for greater functional independence.

Moldova: An automatic system for monitoring the quality of services is being developed, with monetary compensation for disrupted services to be included in final customer tariffs. Reporting requirements to monitor the investment activities of companies will provide greater transparency.

Tajikistan has exchanged experiences with the European Union and Partner Countries on the measuring and recording of modern gas metering, and their maintenance and metrological support to improve gas metering and reporting practices.

Uzbekistan was guided in the study of existing electricity market models in Europe and in neighbouring Partner Countries, analysing its barriers to trade to increase trade in electricity in the Central Asian region.

INOGATE assistance was crucial for the development of the relevant Ukrainian methodology on ancillary services. The recommendations of EU experts in this area were both important and useful for us. We still use this work and, in the near future, plan to apply these recommendations for the procurement of hardware and software for Ukrenergo.

Dmytro Olefir, Head of the Department of Technical Facilities, Ukrenergo

To work towards a competitive market for the procurement of ancillary services in the electricity sector in the Ukraine, INOGATE analysed benchmark services in EU Member States and provided a study with specific recommendations adapted to Ukraine. Among its recommendations was the introduction of the methodology for procuring additional electricity during peak demand based on market rules. This would reduce costs and improve the quality of services. As a result, the beneficiary, NEC UkrEnergo, made this methodology obligatory for all market players, thus increasing transparency and enhancing competition in the market for ancillary services in the Ukraine. The impact of this change will produce significant financial savings and operational efficiency. It will be in place on 1 July 2017.
ENERGY TARIFFS

CONTEXT

The tariff paid by every consumer of energy includes, among other things, its delivery, extraction or import (for gas) and generation or import (for electricity). To guarantee the quality and security of the energy supply, the tariff rate must be sufficient to recover the costs of the infrastructure and provide a reasonable return on the capital invested.

There is a large variation in current tariff methodologies in the Partner Countries. In those that are members or considering membership in the Energy Community, the tariffs are globally well designed, and assistance is targeted at specific issues, such as cost calculation, energy mix and appropriateness of tariffs for the local context. By contrast, in those countries that maintain a traditional, vertically integrated structure, assistance comes in the form of capacity building and providing advice on the underlying disciplines.

INOGATE has undertaken a tariff review of its Partner Countries to establish their current status and to advise on possible steps to reform their tariffs according to the central tenets: fairness, transparency, coverage of reasonable costs, efficient allocation of the costs between customer classes, provision for investment and provision of a reasonable return for the owners.

REGIONAL ACHIEVEMENTS

A regional seminar on tariffs (2013) presented EU methods for tariff setting and development of strategies for reforming the tariff system, taking into account socially vulnerable groups. A regional study on electricity and gas tariffs identified gaps and provided methods of improving current methodologies in place in the Partner Countries. These proposals have resulted in tariff reform measures being taken by Armenia, Azerbaijan and Moldova. The report has been shared with the Partner Countries in 2014 and is being further revised based on their comments in 2015.

Tariffs are a practical way of paying for all the services involved in bringing energy to the consumer.

For the first time, the Review of Energy Tariffs in INOGATE Partner Countries, 2015 benchmarks gas prices across all the countries, forming a basis for comparison.
The people’s attitude and the quality of service requirements is changing [in Moldova].

Lilian Barcaru, Head of the Quality Division, National Agency for Energy Regulation

Armenia: The part of the tariff methodology dealing with remuneration for reactive power (or control of the power factor) in large consumer installations was developed to provide an incentive for reducing technical losses in the distribution system and improving the security of the electricity supply. The network remuneration methodology also included a review of current practices and the development of clear recommendations for the adoption of a set of rules for connection to electricity and gas distribution networks, to ultimately improve the functioning of both networks.

Azerbaijan’s Tariff Council received proposals for improvement of secondary legislation in areas of regulation and tariff setting to reduce losses in the electricity and gas sectors.

Belarus: INOGATE recommended improvements on procedures for connection to the grid, based on EU experience, to reduce uncertainty for investors.

Moldova: Legislation requiring distribution companies to automatically compensate customers for poor service when breaching regulatory thresholds was drafted. A definition of technical loss percentages with an agreed improvement strategy to make tariffs commensurate with reasonable loss reduction targets was also proposed. In the further interests of transparency, proposals were developed for the regulator to monitor companies’ investment activities.

SPOTLIGHT ON INOGATE RESULTS & IMPACT

With INOGATE support, Moldova is introducing an automatic compensation system for instances when electricity suppliers do not provide service. Disruption or disconnection from the grid will now be calculated and reflected in the client’s final bill of the year, providing an incentive for the supplier to be as reliable as possible. “The people’s attitude and the quality of service requirements is changing” says Lilian Barcaru of ANRE, the national regulator, although the attitude of suppliers still needs to be changed. This innovation will be “equally beneficial to consumers and providers, strengthening mutual trust”, believes Barcaru.
ENERGY STANDARDS

CONTEXT

Standards enable access to markets and build trust, ensure good practice, increase competitiveness, protect consumers, improve efficiency and reduce risk. They also facilitate technology transfer among countries. A lack of harmonisation can lead to trade barriers due to non-compliance of safety and product quality between countries. Standards work together with the policies and regulations of companies, countries and regions.

Lack of harmonisation of standards and codes in the electricity and gas sector between the European Union and Partner Countries, and between the countries themselves, has been a major obstacle to the convergence of energy markets to date. The differences between Soviet GOST standards currently applied in Partner Countries, and European and international standards in use in the EU result in incompatible and sometimes conflicting energy infrastructure and products. Partner Countries interested in harmonising their system with the EU will have to adopt European and international gas and electricity standards, amend existing technical regulations and develop new secondary legislation.

REGIONAL ACHIEVEMENTS

In 2009 and 2010, INOGATE supported the translation of 112 EU and international standards – 48 oil and 64 gas standards – identified as a priority by the Energy Community Secretariat and the Technical Association of the European Natural Gas Industry (MARCOGAZ), within the framework of the Euro-Asian Standardization Council (EASC), which counts all Partner Countries among its members. These standards cover different areas related to gas analysis and calibration of gas equipment and pipes. Twelve of these standards were voted in the EASC to become Interstate EASC Standards and were transferred for immediate application to the national standards bodies (NSBs) of the Partner Countries that requested them. The other 100 standards which were also transferred to the national standards bodies will require their review by technical committees as a first step to their harmonisation.

Interested Partner Countries were also supported in their effort to harmonise their standardisation system with EU best practice, and to develop a road map and action plan. These documents provide guidance for the countries and include a list of key standards to be adopted, which go beyond the 112 already translated, covering areas of safety, equipment specification and measurement of energy. Once these standards are adopted by the NSBs, which will support Partner Countries in their compliance with EU directives, they will become immediately available for institutions and companies.

A number of seminars, conferences and study tours familiarised Partner Country delegates with EU standardisation systems, bodies responsible for standardisation (ISO, CEN/CENELEC, BSI) and private companies that establish standards for the energy industry worldwide. Partner Country representatives benefited from a study tour to London (2013) to observe UK best practice in standardisation and a study visit to Bonn and Essen (2014) to study the German model of a semi-regulated gas sector, the standardisation of gas transmission and gas losses.
INOGATE has helped greatly to harmonise our regulations and technical standards with those of the EU.

Professor Teimuraz Gochitashvili, Senior Advisor, Georgian Oil and Gas Corporation (GOGC)

COUNTRY ACHIEVEMENTS

Armenia: A study identified which standards required harmonisation for testing and certification laboratories for small hydro power plant equipment to support their aim to become a regional provider in this area.

Georgia: A national technical committee for harmonisation of its electricity and gas standards was established and 117 gas and 137 electricity key standards were adopted by the end of 2013, as recommended in Georgia’s Road Map and Action Plan. The remaining gas standards will be adopted by the end of 2015 by endorsement method, which transfers the responsibility of their implementation to gas companies.

Ukraine has increased its pace of adoption of key standards through the creation of a Technical Expert Group on Standardisation. Its aim has been to mediate between gas and oil companies, the Technical Regulation Department of the Ministry of Economic Development and Trade, the Ministry of Energy and Coal Industry and the NSB, thus identifying which key standards to adopt and when. By the end of 2012, 30 gas key standards were adopted with a further 24 adopted in 2013-2014 (of which 17 were part of the 112 translated standards). In the case of electricity standards, 75 key standards were adopted in 2012, with an additional 86 adopted in 2013 and 27 in 2014.

SPOTLIGHT ON INOGATE RESULTS & IMPACT

Georgia’s long “standardisation vacuum” is being addressed with the assistance of INOGATE. This gap was created between Soviet-style GOST standards which are incompatible with the newly adopted EU standards in gas and electricity. Over the past two years, Georgia’s newly-formed Technical Committee for Standardisation adopted 112 European and international translated oil and gas standards transferred by the EASC with support from INOGATE. The remaining key standards, recommended for adoption in Georgia’s Harmonisation Road Map and Action Plan, are at different stages of adoption as national standards and will be ready to be used by companies soon. Sulkhan Tabaghua, Secretary of Georgia’s National Committee of the International Electrotechnical Commission remarked: “All these meetings, workshops and training sessions played an important role in gaining insight into the best European and international experience in this field.”
The efficiency of energy transportation plays an important role in the security of a country or region to power its economic development. Energy transportation must be efficient and technically effective. Within the gas sector, Partner Countries are concerned about the level of technical and non-technical losses in their transportation and distribution of gas, in some places amounting to 20 to 25% of total gas transmitted. The largest technical losses occur on borders in gas metering and compressor stations. In the distribution network, they are due to prolonged underinvestment in upgrading and maintaining the network.

EU best practice methodologies and technologies for measuring, detecting and reducing gas losses are being introduced. The Secretariat also helps increase the capacity of gas company personnel in pipeline construction supervision, assessment of pipelines, risk assessment, proper operation of metering stations, etc. and responds to specific country requests for assistance in installing meters and pressure regulators in the distribution sector. It also provides software to control flows and the balance of supply and demand.

A regional study was carried out on EU technologies and methodologies to combat gas losses and built capacity among policy makers and gas industry practitioners on the reduction of methane leakages in gas pipelines. The aim is to reduce both gas losses and greenhouse gas emissions. The report was shared with the Partner Countries in 2014 and has been highly valued by the gas companies. As a result of the proposed solutions on identification and reduction of gas losses, Georgia, Tajikistan and Uzbekistan adopted and included in their programmes the new cost-effective practices in identifying, estimating and reducing technical gas losses.
Our Soviet-era pipelines need special monitoring and maintenance works to keep them safe, and construction of new pipelines in line with international standards also requires constant upgrade of knowledge and practices.

Tato Goguadze, Head of Department for Construction Supervision, GOGC

**COUNTRY ACHIEVEMENTS**

**Azerbaijan:** Secondary legislation on losses in the electricity sector was improved to strengthen regulation and tariff setting and an advanced metering infrastructure was installed to reduce commercial losses in electricity distribution. The measurement and recording of gas flows is also being upgraded, in line with EU standards to reduce gas losses, increase metering accuracy and ultimately to increase revenues from gas sales. Pipeline maintenance staff was trained accordingly.

**Georgia:** 30 employees from Georgia’s oil and gas sector were trained in the maintenance and control of (unpiggable) pipelines and supervision of their construction, resulting in a safer and more reliable gas infrastructure. Two employees were trained on NDT (non-destructive testing) to improve their accuracy in diagnosing those areas of welded joints located in a pipeline’s internal layers. Their internationally-recognised certificates now permit them to work in Georgia’s NDT laboratory. The seminars also helped develop amendments to Georgia’s regulatory framework to bring it in line with the EU practice.

**Tajikistan:** A methodology for calculating technological gas losses and own consumption in the operation of main pipelines and in adapting secondary legislation on estimating gas losses was developed for Tajiktransgas. This will result in a reduction of losses in gas transmission.

**Uzbekistan** is introducing gas pressure regulators, procedures and specifications with a strategy for Uzbekneftegaz to reduce technical gas losses in distribution.

**SPOTLIGHT ON INOGATE RESULTS & IMPACT**

INOGATE has supported reduction of gas losses during transmission in four Central Asian countries, demonstrating how cooperation and sharing of information, procedures and methodology can lead to behavioural change. Through a series of three projects carried out between 2009 and 2011, four countries (Kazakhstan, Kyrgyzstan, Turkmenistan and Uzbekistan) benefited from training and laboratory equipment to detect and measure gas leaks, as well as receiving training on repairing the affected pipeline sections. The countries installed maintenance programmes that produced excellent results. The impact of this long-term work in the area of gas losses was assessed in 2014. As a result, over four years (2010-2014) natural gas leakage was reduced by about 15 bcm, a saving of almost EUR 3 billion. Environmental benefits amounted to 226 million metric tonnes of Mt CO₂ – equivalent to Spain’s entire emissions in 2013.
In today’s world, where dependency on fossil fuels is significant and environmental concerns are grave, the role and benefits of renewable energy sources cannot be underestimated. Countries are increasingly turning to developing renewable energy sources as part of their energy mix. Derived from natural processes, they can be replenished as they are consumed, reducing reliance on imported fuels and strengthening energy security. Renewables directly address the growing problem of greenhouse gas emissions.

Understanding the full potential of renewable energy is crucial for designing appropriate policies and mechanisms to foster growth and ensure robust development of the sub-sector. Partner Countries are supported in developing their renewable energy policy and legislation frameworks and in the elaboration of methodologies and guidelines, capacity building, exchange of technological know-how, networking and awareness raising.

REGIONAL ACHIEVEMENTS

INO Gate is working in the Eastern Partnership countries in comprehensively mapping renewable energy sources. This mapping tool is designed to help a broad range of players to make sound energy investment decisions and increase the number of successful renewable energy projects. It will also help policy makers to better understand the opportunities and bottlenecks in the development of renewable energy and assist in decision making on investments. The final result will be a greater share of renewable energy in the energy mix.

A regional study tour shared knowledge on bio-energy and policies in sustainable energy with the goal of increasing the share of sustainable energy in total energy production. A baseline survey on institutional and regulatory frameworks in sustainable energy helped policy makers understand the status of implementation and the steps needed to improve the national legislative framework.

Combined training courses and study visits have given Partner Countries EU experience in the assessment and financing of renewable energy projects, aimed at increasing the volume of sustainable energy in the future energy mix.
Armenia has developed a new curriculum for energy engineers with the goal of creating a future pool of experts on energy efficiency in the energy and industry sector.

Azerbaijan has improved regulation by training staff of the state agency on alternative energy and the EU experience. This will remove barriers for the development of renewable energy sources.

Belarus is proposing changes to its current legislation to promote heat and electricity generation from renewable energy sources in the light of EU best practice. The staff of BelVeb Bank received training in the assessment of energy efficiency and renewable energy investment proposals, which will increase investment in those two areas.

Georgia has received training for Ministry of Energy staff on EU directives and legally binding obligations in preparation for their application to the Energy Community. Bank employees have also been trained in the assessment of sustainable energy financing proposals; municipal employees were trained to assess landfill gas energy potential and thus reduce greenhouse gases. This is resulting in greater investment and more efficient generation of energy from waste.

Moldova: At the end of 2014, there were 62 renewable energy projects approved by MoSEFF consultants; financing was signed for 37 projects, with a combined loan amount of about EUR 4 million.

Uzbekistan, with the assistance of CASEP, is developing legislation on renewable energy and implementing renewable energy and energy efficiency projects. CASEP is helping develop the technical design for the programme of Solar PV-based electricity supply to 400 rural health clinics. This will result in greater energy security in rural areas.

COUNTRY ACHIEVEMENTS

Methane starts to build up 4 to 5 years after a landfill’s closure. To transform it into energy, a collection system has to be installed. Otherwise, gas has to be burnt.

Giorgi Shukhoshvili, Director at Georgia’s Solid Waste Management Company

Georgia is addressing its landfill problems and at the same time generating fuel for other uses. Personnel have been trained in Georgia’s three main urban areas – Tbilisi, Kutaisi and Rustavi – to measure methane emissions using portable equipment. They also learned of the importance of reducing landfill methane accumulation and its potential value in industry. As one participant said, “Previously, I had only a general idea about emissions. At the training we went into details – visited landfills and measured methane emissions using portable measuring equipment. We realised that unless you use that gas for producing energy or burning it up, it’s like a ticking bomb”. The training resulted in an increased interest in creating bankable projects in Georgia to reduce its over 50 landfills to 10 state-of-the-art factories over the next 6 to 8 years, that will separate and treat biodegradable waste through anaerobic digestion to produce methane.
Energy efficiency is increasingly seen as the most effective way of reducing energy consumption, reducing costs and building more self-sufficient energy sectors. Energy saving can enhance energy security and reduce emissions of greenhouse gases and other pollutants.

Energy efficiency is at the heart of the European Union’s energy policy; developing effective policy and legal frameworks and creating an enabling environment for energy efficiency investments is one of the goals of the INOGATE Programme in its support to its Partner Countries.

INOGATE helps its Partner Countries create greater awareness and more opportunities for using the massive benefits of energy efficiency. Working closely with local policy makers, institutions and other stakeholders is key for progress.

Through training on energy auditing methodologies and practices, investment has been increased in more than 40 energy efficiency projects. Raising awareness on the importance of energy efficiency and encouraging its uptake in the building and industry sectors are also major technical assistance actions.

Across the region, a baseline survey was carried out on sustainable energy institutional and regulatory frameworks for policy makers in Partner Countries, creating a tool for comparison and tracking of progress in improving their legislative frameworks.

Through the Covenant of Mayors Office East project (COMO-East), 150 cities in Eastern Europe, South Caucasus and Central Asia have joined the community of now 6,200 signatories. By signing, municipalities commit to prepare a sustainable energy action plan, with a view to increasing their energy efficiency and reducing their CO2 emissions by 20% by 2020. COMO-East provides information, daily support and capacity-building training to signatories.

The Energy Savings in Buildings (ESIB) project carried out 8 training workshops of journalists in the Partners Countries, training over 110 participants to draw the attention of the mass media to issues of energy efficiency and energy savings in the building sector. The project also organised children’s drawing contests on energy efficiency in the Partner Countries to raise awareness among the younger generation.
Armenia adopted a new curriculum in energy efficiency for energy engineers to create a future pool of experts in energy efficiency in the energy and industrial sector. With the support of COMO-East, the city of Yerevan joined the Covenant of Mayors in 2014.

Armenia, Belarus and Georgia: A total of 131 banking staff were trained to assess energy efficiency projects to make better use of existing credit lines that were previously untapped and to support investment in energy efficiency projects.

Azerbaijan: Staff from the Ministry of Energy and Industry were trained to assess investment projects and developed a framework for establishing an energy efficiency department. A road map on district heating anticipates increased investment in district heating. On 30 December 2013 the first Home Owners’ Association in Azerbaijan was officially registered with direct support from ESIB.

Georgia: 28 Georgian high-level decision makers were trained on EU acquis communautaire in energy efficiency and renewable energy as well as legally binding obligations for their future application to the Energy Community.

Kazakhstan and Uzbekistan were supported by CASEP in preparing a study tour on advanced technologies in energy efficiency and renewable energy sources. CASEP also helped Kazakhstan finalise a legal and regulatory framework for use of renewable energy and the promotion of energy efficiency. This will help develop legislative frameworks for energy efficiency.

Kyrgyzstan and Tajikistan received CASEP expertise in policy design and formulation to introduce energy efficiency and renewable energy at national and regional levels as a step towards a national policy for energy efficiency and renewables, thus introducing energy efficiency more effectively into the countries.

Moldova: 63 energy auditors were trained to be certified by the Energy Efficiency Agency (EEA).

Ukraine: Primary legislation on energy efficiency was reviewed by ESIB, and several energy audits were carried out as a demonstration to introduce energy efficiency measures into municipalities (Burstyn, Gola Pristan and Bliznuki), in a residential building in the town of Cherkassy and in commercial buildings in the tourism sector in the Crimea.

Technical assistance has been key in helping Azerbaijan create an Energy Efficiency Department within the Ministry of Energy, providing a framework, objectives, key tasks, structure and a short-term action plan. The government sees this as a first step which will result in the development of legislation, targets and increasing awareness of energy efficiency among its citizens. Ms Halida Masimova, Head of the Department on Energy Efficiency, Alternative and Renewable Energy Sources of the Ministry of Energy of Azerbaijan said “The ITS assistance was very important for the Ministry of Energy of Azerbaijan and we would like to continue cooperating with INOGATE in the future.”
Economic growth, attracting investment and increasing energy security are all important priorities for Partner Countries. Developing all energy sources and their infrastructure and boosting investment in renewables and energy efficiency requires a spectrum of supporting policies and measures to ensure adequate investment levels and specialised financial expertise to obtain international financing.

INOGATE is encouraging energy investments in its Partner Countries by sharing experience and providing technical expertise to banks in order to foster the investment in sustainable energy by narrowing the gap between industry and banks. A focused training programme on energy financing has given the financial sector the skills to make better investment decisions, build synergies and improve prospects for viable investments.

Together with key stakeholders in the Partner Countries, INOGATE is carrying out comprehensive mapping of the region’s renewable energy resource potential. Such a map of resources, created by analysing existing data in the countries and plugging information gaps, will be a practical tool for investors to make sound energy investment decisions.

The Secretariat has built capacity among partner countries in assessment and financing of sustainable energy, renewable energy and energy efficiency projects, thus increasing investment in these areas. A regional workshop created awareness of appropriate financing models and architectures, based on concrete experiences and local financial institutions benefited from training on financing of sustainable energy, increasing the number of IFI credit lines and resulting in greater investment in sustainable energy. Between 2010 and 2014, 131 bankers from all Partner Countries in Eastern Europe and Caucasus were trained in six training sessions with bankers. In a parallel set of nine training sessions held in Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan and Moldova, 231 industry representatives (engineers) were trained.
For the most part, industry representatives (mostly engineers and project developers) in many Partner Countries do not know how to apply to banks for funding or how to do energy audits and apply life cycle cost analysis to sustainable energy projects. This is what we focused on in helping them.

**COUNTRY ACHIEVEMENTS**

**Armenia**: 70 commercial banking staff in five banks and 13 staff in the Union of Credit Organisations received training in the financing of energy efficiency and renewable energy investment projects; credit lines are now provided for previously stagnant projects.

**Azerbaijan** now has 24 trained energy experts assessing energy efficiency and renewable energy investment projects. Capacity of staff of the state agency on renewable and alternative energy was improved on licensing and regulations to remove barriers for renewable energy development. This will increase the energy mix for the country and thus its energy security.

**Georgia** now has 27 trained Bank of Georgia employees to assess the financing of sustainable energy projects for increased investment in energy efficiency and renewable energy solutions; 26 state employees were also trained in assessment of landfill gas potential for renewable energy. Both these improvements will ultimately increase the energy mix and the energy security of Georgia.

**Moldova**: The Moldovan Sustainable Energy Financing Facility (MoSEFF) financed 152 sustainable energy projects with a combined loan volume of EUR 31.25 million and savings of 24.5 gigawatts (GWh) in electricity and 95 GWh in fuel.

**Spotlight on INOGATE results & impact**

A pioneering project in Partner Countries to obtain financing for energy efficiency and renewable energy projects has brought together two sectors that do not traditionally understand each other: bankers and engineers. Workshops and study tours with EU bankers introduced local bankers to evaluation and dealing with risk, how to apply life cycle analysis to sustainable energy and the importance of energy efficiency and renewable energy in sustaining a country’s energy portfolio. Engineers learned to determine the feasibility of energy efficiency and renewable energy projects by life cycle analysis, doing reality checks and how to present their projects for financing. These unique courses were a “first” for both the bankers and the engineers. Between 2010 and 2014, 131 bankers and 231 engineers were trained across the region. As a direct result of the training, over EUR 50 million of financing has been “unblocked” by local commercial banks under their sustainable energy credit lines.
ENERGY STATISTICS

CONTEXT

Quantifying energy resources, supply and demand is essential for ensuring energy security and developing sound and fact-based energy policies and measures. As the fundamental input for compiling energy balances and statistics, energy data must be collected and compiled using reliable, consistent and internationally recognised methodologies, definitions and processes.

Partner Countries face many challenges in collecting and compiling reliable energy data: a lack of financial and human resources, insufficient disaggregated data, old software, weak institutional structures and limited access to international best practices and standards.

Over the years, INOGATE has been shepherding its partner countries in the improvement of their energy statistics systems and the implementation of Energy Statistics Action Plans (ESAPs) to provide a road map for standardisation, capacity building and institutional frameworks for future energy balances and statistics.

REGIONAL ACHIEVEMENTS

An international conference (Copenhagen, 2013) on the role of energy statistics in national and international policies increased the knowledge of Partner Countries on the importance of compiling high quality energy statistics, balances, energy prices and energy efficiency indicators (EEI) for better energy planning and policymaking. The Energy Statistics Network (ESN) meets annually since 2012 to share experiences within the region and increase networking. Joint ITS/IEA training and study visits have also been conducted. A second conference (Zagreb, 2014) took stock of the progress made in Partner Countries since the start of the ITS project in February 2012.

High quality energy statistics are the starting point for better energy planning and policymaking.

National statistical institutes, ministries and other stakeholders showed their commitment by endorsing and implementing ESAPs, and cooperating with Eurostat, the IEA, the Energy Community and other donors.

As a result of INOGATE support, the quality of energy statistics has improved greatly in the nine countries that have endorsed and implemented ESAPs. Five countries now have official energy balances fully aligned with international standards compared with only one in February 2012. The remaining four have harmonised their energy data collection system and are now in a position to prepare their first national energy balance in 2015. The IEA has also observed a significant improvement in the completeness, timeliness and comparability of the energy statistics it collects from Partner Countries. The IEA attributes this progress, observed on a regional level, to the assistance provided by the INOGATE Programme.
INOGATE has been in Georgia for many years already and supported many joint projects, of which one of the most successful was producing an energy balance, implemented at our request.

Mariam Valishvili, Georgia’s first Deputy Minister of Energy

COUNTRY ACHIEVEMENTS

Armenia: A model for energy data collection and for compiling an energy balance was developed. A pilot survey on data collection in industry and the natural gas sector significantly improved Armenia’s official energy statistics in these strategic areas.

Azerbaijan: A household survey on energy consumption was developed and energy efficiency statistics was compiled for future, improved, demand-side energy policies and measures.

Belarus: A methodology was developed for surveying household energy consumption and compiling preliminary energy efficiency indicators to support energy efficiency policies and measures.

Georgia: Procedures for data collection were established and a methodology for monthly natural gas statistics was developed. In 2014, Georgia also completed five joint IEA/Eurostat/UNECE questionnaires and compiled its first national energy balance since 2002.

Kazakhstan: The energy data collection system was improved, and new questionnaires were added. Kazakhstan developed its first energy efficiency indicators and improved the quality of the data reported to the IEA in 2014.

Kyrgyzstan: New methodologies and questionnaires were developed to compile energy balances according to international standards. Kyrgyzstan completed five joint IEA/Eurostat/UNECE questionnaires.

Moldova: Procedures were established for collecting energy data as well as a structure and methodology for compiling its energy balance in Eurostat format. A pilot survey anticipates production of monthly energy and bi-annual price statistics in 2015.

Tajikistan: The energy data collection system was improved, with particular emphasis on final energy consumption statistics surveys. Tajstat plans to submit the completed joint IEA/Eurostat/UNECE questionnaires for the first time in 2015.

Ukraine was able to submit good quality data to the IEA and improve its interagency cooperation in the field of energy statistics, thus improving the alignment of its energy statistics with European and international standards.

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In November 2014, Georgia produced its first annual energy balance since 2002 which it considers one of its most successful achievements with INOGATE. “This energy balance in Eurostat format is an indispensable tool for planning” says Gogita Todradze of Geostat. “It is sought by both private companies and state-run agencies.” Todradze credits intensive training by INOGATE experts on energy statistics and balances, along with study visits to prominent European national statistical institutes for this achievement. Key Geostat staff attended study tours in Bulgaria, Croatia and Austria. Georgia’s first Deputy Minister of Energy, Mariam Valishvili, sees that an energy balance compatible with European and international standards opens doors to all international databases: “Energy-hungry Georgia gets a chance to reach out to the audience that consumes this type of information”.

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PLANS FOR 2015-2016

Priority activities for 2015-2016 have been agreed with Partner Countries in regional and country work plans, the highlights of which are presented below. These are now being implemented.

Energy policy: Partner Country achievements in developing energy policies will be highlighted in the Energy Policy Compendium, produced jointly with the IEA, to be presented in events across the region. Georgia will be supported in the adoption of procedures for capacity allocation on electrical interconnectors to increase cross-border trade and will develop secondary legislation on renewable energy development. Assistance is planned for Moldova to help adapt draft electricity and gas laws to Energy Community Treaty requirements and strengthen its institutions for a proposed functional transmission system operator (TSO) and develop guidelines for energy audits of combined heat and power stations and district heating systems for future legislation on energy audits. Moldovan energy service companies (ESCO) will benefit from support in developing an operational framework to improve energy efficiency.

Energy tariffs: Regionally, Partner Countries will come together to exchange mutual and EU experience on the electricity and gas sector through regulations and tariffs, licences, permit procedures, markets and monitoring. Belarus will receive support in developing a model and regulations to eliminate cross-subsidies in electricity tariffs.

Energy markets: Partner Countries will share experience in the electricity and gas sectors to better regulate future joint regional and bilateral investments in energy infrastructure and propose criteria for service quality. Armenia will receive assistance in reviewing legislation covering existing Third Party Access methodology for greater transparency, secured access to markets and increased liquidity of the energy market; assistance is planned for Azerbaijan to develop Azenerji’s cross-border exchange strategy, and its legal, regulatory and commercial aspects for cross-border trade; Georgia will be supported to adopt procedures for capacity allocation to increase cross-border trade. Support will be provided to Kazakhstan to improve access to its electricity grid by regulating access; Moldova will be supported in adapting draft ECT electricity and gas laws to the Moldovan environment and the TSO, and support for redesigning Moldelectrica as a functional TSO is on the agenda.

Energy standards: Georgia will be supported in communicating the use of EN 1594 to Georgian gas industry experts; it will also produce guidelines and implement an action plan on harmonisation of standards for electricity and gas and will develop international technical regulations and standards in the oil and gas sectors. Moldova will receive guidance to develop national electricity and gas technical committees for the adoption of standards and Tajikistan will receive support in developing recommendations on technical regulations in line with European Directive 2006/95/EC for low voltage products, as well as training of specialists in the use of EU gas infrastructure standard EN 1594.

Energy security: Georgia will be supported in the inline inspection of new pipelines and advice will be provided to the GOGC on preparing tenders, improved procedures on cross-border metering stations and upgrading of the SCADA system of transmission.

Renewable energy & Energy efficiency (Sustainable energy): Partner Countries will receive support in creating greater awareness of sustainable energy and developing policies to improve energy efficiency in buildings; they will also be made more aware of appropriate financing models and architecture and develop the capacity of their local financial institutions on financing of sustainable energy. Sustainable energy information centres will be set up in Georgia and Moldova, both to create awareness and to encourage uptake of renewable energy solutions. GeoExplorer, the geospatial mapping platform to support sustainable energy investment, will be updated and included on the INOGATE website. Azerbaijan will be guided in improving its legislation on energy efficiency in the district heating sector to increase investment and efficiency and Moldova will develop a template, methodology and guidelines for conducting energy audits for CHPs and DH systems. The Energy Efficiency Agency will receive technical assistance to organise an operational framework for ESCO legislation.

Energy investments: Armenia’s engineers will benefit from training with a focus on energy service companies (ESCO), leading to more investment in industrial energy efficiency. Armenia’s road map for energy performance certificates in the building sector will include a legal framework and institutional roles. Georgia will also be supported in developing secondary legislation on renewable energy development.

Energy statistics: Regional workshops will provide training on the calculation of energy efficiency indicators, energy balance compilation and the use of energy statistics for energy planning. The first official integrated energy balances will be ushered in in Armenia, Kyrgyzstan and Tajikistan. Other Partner Countries will receive continuing support in adjusting their energy efficiency indicator models for future compilation (Azerbaijan, Belarus, Kazakhstan, Ukraine), implementing energy surveys (Belarus, Ukraine) and moving forward on calculation of their share of renewable energy and CO₂ emissions (Georgia, Moldova) and analysing their data quality, in preparation for Quality Reports (Moldova).
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