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Energy statistics in Azerbaijan

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Azerbaijan is one of the first countries that has implemented the International Recommendations for Energy Statistics (IRES), and published "Energy Balances of Azerbaijan 2011" according to IRES, about six months after the adoption of IRES by the UN Statistical Commission in February 2011. A lot of work has been carried out in Azerbaijan to strengthen energy statistics and align it with the international statistical standards. This article describes the development of energy statistics in Azerbaijan and the experience of the State Statistical Office in implementing IRES.

The need for energy statistics is one of the main drivers for its development

The Republic of Azerbaijan is rich in energy resources, and its economy heavily relies on them, with the energy sector contributing about 50% to the Gross Domestic Product (GDP) and with exports of crude oil and natural gas amounting to 44.5 million tons and 6.2 billion cubic-metres respectively in 2010. The importance of energy in the country has also been underlined by important milestones, such as the development of a national energy strategy as a framework for a comprehensive and dynamic development of the energy sector and the establishment of the State Agency on Alternative and Renewable Energy of the Ministry of Industry and Energy in 2009 as the regulatory institution for alternative and renewable energy.

This has posed enormous demand for comprehensive, reliable, and timely official statistics for energy. In addition, due to the globalization of the energy market, it was considered fundamental to develop energy statistics in line with international statistical standards.

The political will was essential for the development of energy statistics

The improvement of energy statistics is considered, in Azerbaijan, a priority. In the "State Program on Improvement of the Official Statistics of the Republic of Azerbaijan during 2008-2012" (which is confirmed by Decree of the President of the Republic of Azerbaijan), six of the 52 planned activities identified under the section on the 'Improvement of the statistical observations, statistical indicators and their methodology in the field of real statistics' are directly related to energy statistics. This provides a strong foundation for the development and strengthening of energy statistics in the country.

There is a strong legal basis in Azerbaijan for the collection and compilation of energy statistics defined by the Law on Official Statistics of the Republic of Azerbaijan. The State Statistical Committee (SSC) of the Republic of Azerbaijan is the institution in charge of the management of implementation and coordination of the activities, and it reports both to the President and to the Cabinet of Ministers of the country about the course of the implementation of the State Program every year. The State Program also makes explicit provision so that the necessary financial resources from the state budget are allocated to the implementation of the actions identified in the State Program.

A Global Assessment of the National Statistical System of the Republic of Azerbaijan ,which was carried out by Eurostat, EFTA and UNECE in 2010, noted in its main conclusions the following: the professional independence of a national statistical system, and the principles of objectivity and fairness, are reflected in the Law on Official Statistics; the SSC has a clear mandate to collect data, including data from individuals and administrative sources; and the SSC plays a central role as a producer of official statistics and is the coordinator of the national statistical system, producing (in cooperation with regional bodies) about 80% of official statistics.

Initiatives, study visits, discussions and decisions of statistical office

Given the strong interest on the development of energy statistics in the country, the SSC encourages and promotes the active participation of its staff in international activities in energy statistics, such as meetings of the Oslo Group on Energy Statistics, events and seminars by the United Nations Statistics Division (UNSD) and the International Energy Agency (IEA); conferences and training related to the Joint Organizations Data Initiative (JODI), as well as study visits to EU Member States in order to learn from other countries' practices.

In September 2011, Azerbaijan hosted the International Workshop on Energy Statistics, which was organized by the United Nations Statistics Division for the CIS countries. This was the first international workshop on energy statistics since the adoption of IRES by the UN Statistical Commission.

Between 2007 and 2011, more than 30 decrees were signed by the Chairman of the State Statistical Committee on energy statistics as well as on energy balances. Working groups were created among different institutions and within experts of related areas within SSC to discuss the structure of the energy balances and to identify and resolve issues.

Development of energy statistics

The SSC actively participated in the preparation of IRES and, at the same time, worked on its implementation in Azerbaijan by identifying a roadmap for its implementation which included the setting up of a national system of indicators, the improvement of the questionnaires to be used for data collection, and new rounds of data collection.

The main purpose for establishing a national system of indicators was to determine the frame for energy statistics, clearly specify the definitions (in line with relevant UN statistical standards) and make information available in state language for the compilation of national energy balances. The national system of indicators consists of two parts: namely, the list of main indicators on energy statistics, and the methodological explanation of the main energy indicators. The first part identifies, for each indicator, the measurement units and the periodicity for data compilation, as well as a reference to other relevant indicators. The second part includes, for each indicator, the definition, the data collection methods (e.g. the sampling method; the coverage of the respondents in terms of their economic activity, households and etc.), and the compilation methods. The system of indicators consists of nearly 250 indicators organized under 20 sections. This system provides the basis for the preparation of the questionnaires as well as for the creation of metadata. The structure of questionnaire forms follows that of an energy balance. When planning the data collection in the country, attention is always given to reduce the response burden.

The national classification of energy products was developed on the basis of the Standard International Energy Product Classification (SIEC) in IRES. The national version of the energy product classification was prepared by the SSC and approved by the decree of the SSC Board dated 25 May 2011 and by the decree of the State Committee on Standardization, Metrology and Patent of the Republic of Azerbaijan dated 20 June 2011, № 095 after the endorsement from national agencies in charge of energy policy in the country. Following this formal adoption process, the implementation of the classification started in July 2011.

The classification for energy products fosters data comparability at the international level as well as facilitates the correspondence with other classifications used at the national level. An essential element is the correspondence with the national versions of CPA, PRODCOM, the Central Product Classification (CPC), and the Harmonised System (HS). The correspondence with CPA and PRODCOM is particularly important for Azerbaijan since these classifications are used for the collection and compilation of production and consumption statistics.

SIEC and its national adaptation provide the basis for integration of energy statistics with economic statistics: the main elements that have fostered this integration are a complete list of energy products; a clear structure of the classification; a detailed description of the categories (including the identification of exceptions); and a correspondence with other classifications.

Another important work that has been carried out in Azerbaijan was the identification of the country specific calorific values for energy products. The SSC commissioned experts from scientific institutions to identify the country specific calorific values. The Institute of Petrochemical Processes of the Academy of National Sciences of Azerbaijan carried out laboratory work and determined the calorific values of 23 energy products, which are now used for the compilation of energy statistics and balances. An example of ranges of net calorific values for selected energy products is provided herein for reference:

Net Calorific Values for some energy products (GJ/metric tons)

Kind of energy products	Azerbaijan		World[a]	
	Lower	Upper	Lower	Upper
Crude oil	43,1	45,3	40,1	44,8
Motor gasoline	43,2	46,3	42,5	44,8
Aviation gasoline	43,4	46,5	42,5	44,8
Gasoline-type jet fuel	43,2	46,2	42,5	44,8
Diesel oil	42,7	45,5	41,4	43,3
Kerosene-type jet fuel	43,1	46,1	42,0	45,0
Fuel oil	42,8	45,8	39,8	41,7
LPG	47,4	52,4	44,8	52,2

[a] Range of the 95% confidence interval of the Net Calorific values (2006 IPCC Guidelines and IRES).

The need for complete energy balances

In Azerbaijan there was a strong need to improve the structure of the energy balances. The previous layout of the balances – a heritage from the former USSR – did not reflect the recent developments in energy statistics and presented a number of shortcomings, such as the lack of detailed information on the transformation and consumption, different measurement units (e.g. conditional fuel), etc.

The SSC has adopted the format of the energy balances contained in IRES for the national energy balances and presents commodity balances for 23 energy products. The availability of detailed energy balances has fostered transparency and it has allowed for the assessment and monitoring of the energy sector with information on the structure of the consumption of energy products. It has, overall, provided policy makers with necessary statistical information for decision making and policy planning.

SSC compiles energy balances annually and publishes them in the annual publication "Energy balance of Azerbaijan," available online at www.azstat.org.

Conclusions

Enormous progress has been made in energy statistics in Azerbaijan. The adoption of internationally agreed statistical standards (as contained in IRES) and the strong political will have certainly been the determining factors to foster this fast development.

Azerbaijan is now proud of having set up an energy statistics programme that compiles energy statistics and balances on an annual basis, cooperates closely with data providers as well as data users, responds to the user's needs, provides data regularly to international organizations such as the UNSD and the IEA, and actively participates in international initiatives such as JODI. SSC has also documented the statistical processes used for energy statistics and the compilation of the energy balances following the structure of the Generic Statistical Business Process Model (GSBPM) developed by UNECE, Eurostat, and OECD.

As the Global Assessment of the National Statistical System of the Republic of Azerbaijan by Eurostat, EFTA and UNECE noted, "Energy statistics in Azerbaijan has reached a significant development and undertaken new initiatives and planned events for the near future".

The SSC will continue its work on the improvement and quality of its energy statistics.

Template for the collection of country practices in energy statistics

As part of the preparation of the Energy Statistics Compilers Manual (ESCM), the Oslo Group (see also the article below), in cooperation with UNSD, has developed a template for countries to report and share their practices in the collection, compilation and dissemination of energy statistics. The use of a common template is expected to facilitate the review and the comparisons of country practices and will feed into the drafting of chapters of the ESCM highlighting examples of country practices.

The template will cover the following information: statistical concepts and definitions; methods and classifications; statistical production process (data capture, data editing etc.); data quality and data dissemination.

The template of country practices in energy statistics is expected to be circulated to countries in early January 2012. The template will be made available online at http://unstats.un.org/unsd/energy/template.htm as well as at the Oslo Group website http://og.ssb.no/escmmainpage

Countries are strongly encouraged to submit their practices in the collection and compilation of energy statistics.

Updates from the OSLO Group

With the adoption of the International Recommendations for Energy Statistics (IRES) by the Statistical Commission during its Forty-second session, the Oslo Group on Energy Statistics is now focusing its activities on the preparation of the Energy Statistics Compilers Manual (ESCM) which is intended to provide practical guidance in the implementation of IRES and the forthcoming System of Environmental and Economic Accounting for Energy (SEEA-Energy). The 6th meeting of the Oslo Group, 2-5 May 2011, in Canberra, Australia, was dedicated to the preparation of the ESCM. In particular, the meeting agreed on a three-stage work plan: (1) Collection of country practices and textual inputs for the ESCM, (2) Consolidation of the material into a complete draft ESCM, and (3) Consultation and review of the draft. The timeline presented at the meeting envisaged finalization of the ESCM in 2013.

In relation to stage (1), the Oslo Group secretariat, in cooperation with the UNSD and selected Oslo Group members, has prepared a draft template for writing country practices. The purpose of the template is to collect and share country experiences in the compilation of energy statistics, and also giving structured input to ESCM. In addition, it is expected that the practices submitted by the countries will be made available in a knowledge-base platform. The draft template was circulated to Oslo Group and London Group members for comments in November 2011.

The main activities of the Oslo Group in 2012 will be related to the writing and collection of country practices and drafting of chapters for the Energy Statistics Compilers Manual (ESCM). The preparation of the ESCM requires contributions from both the Oslo Group and the

London Group members as the manual is intended to give practical guidance on both the IRES and the SEEA-Energy. The Oslo Group and the London Group, together with the UNSD, encourage countries to submit country practices on topics related to energy statistics that can be used as a basis for writing the ESCM. In addition, the Oslo Group secretariat and the UNSD, in consultation with countries, will identify contributors to the drafting of the text for the different chapters of the ESCM. The 7th Oslo Group meeting is planned to take place in Finland in October 2012, and will be dedicated to discussing draft text for the different chapters in ESCM. For more information, please visit: http://og.ssb.no/ogwebpage

8th JODI Conference, 10-11 October 2011, Beijing, China

The 8th International Joint Organisations Data Initiative (JODI) Oil Conference was organized by the International Energy Forum (IEF), in cooperation with JODI partner organizations: the Asia Pacific Economic Cooperation (APEC), the Statistical Office of the European Communities (Eurostat), the International Energy Agency (IEA), the Latin American Energy Organisation (OLADE), the Organisation of Petroleum Exporting Countries (OPEC) and the United Nations Statistics Division (UNSD). The Conference gathered some 80 participants from 33 countries/economies, both from the national administration responsible for the data submission, and from the user's community, such as market analysts, experts from the industry and financial sector, as well as technical experts from the specialist media.

The Conference reviewed the progress made since the 7th International JODI Conference in Quito, Ecuador, 2-5 June 2009, and discussed the preliminary results of the 3rd JODI Oil Data Quality Assessment, which particularly focused on the assessment of the quality of the additional data points collected through the extended JODI Oil questionnaire. The Conference also discussed the findings of the 3rd JODI Oil Data User Survey.

This Conference marked the 10th anniversary of JODI. The JODI Oil Database is now well established and widely used by market analysts, enhancing further oil market data transparency and contributing to oil market stability, thanks to close cooperation and ongoing efforts by JODI partner organisations as well as countries/economies participating in the Initiative.

The 8th International JODI Oil Conference identified the following actions for the further improvement and development of JODI:

•Feedback from JODI data users is crucial for JODI improvement. Data users, market analysts in particular, can already post their comments on JODI data. Such feedback provides valuable direction on means to improve JODI data quality, collection and submission. To enhance this feedback loop and to extend it to a broader audience, the JODI organisations will develop an online users' forum to facilitate interaction among users and between users and JODI organisations;

•Responding to JODI data users' requests for more detailed oil flows to be submitted by participating countries, and based on the collection exercise initiated in 2009, JODI partner organisations will work on the release of the additional data points covered by the JODI Oil extended questionnaire;

•JODI partner organisations will, in cooperation with participating countries/economies, work on implementation of systematic checks of the JODI Oil Database. Participating countries/economies need to deploy more extensive consistency checks and perform regular checks to identify and report on trends, variations and obvious errors. Data checking procedures should also be revised regularly to keep pace with development of the oil industry in participating countries/economies; metadata should also be further developed;

•JODI partner organisations will continue to disseminate knowledge on the collection of statistics through regular regional training workshops and internships which are recognized as an important element of the ongoing efforts to improve JODI. Furthermore, online tutorials on JODI questionnaire filling, JODI definitions, conversion factors etc will be developed. The JODI Manual will be also updated to incorporate definitions of additional flows included in the extended questionnaire;

•As a response to the IEF Ministers' call for the extension of JODI to annual data on upstream and downstream capacities and expansion plans, JODI organisations are currently assessing the collection of relevant annual data.

For more information, please visit www.jodidata.org

Meetings

International Workshop on Energy Statistics, 27-30 September 2011, Baku, Azerbaijan. The Workshop was organized by UNSD in close cooperation with the State Statistical Committee of the Republic of Azerbaijan. The Workshop gathered 23 participants from 10 CIS countries and 3 from international organizations. In addition, 23 participants from the local ministries attended the

workshop. Participants welcomed the adoption by the Statistical Commission of the International Recommendations for Energy Statistics (IRES), as it helped countries to give prominence to and further strengthen their energy statistics programme. Overall, a lot of progress has been made by CIS countries in energy statistics. In particular, Azerbaijan managed, in a very short time, to formally adopt the classification of energy products contained in IRES, namely the Standard International Energy Product Classification (SIEC). In general, countries expressed appreciation for these types of workshops, which provide a venue for sharing country experiences in the collection and compilation of energy statistics. Participants also emphasized the need for assistance and guidance in the collection of energy statistics and the compilation of energy balances, which are considered as priority areas in the CIS countries. In this regard, they particularly welcomed the work that is being done by UNSD, in cooperation with the Oslo Group and other international/regional organizations, on the preparation of the Energy Statistics Compilers Manual (ESCM). During the open discussion a number of issues that need additional clarification and guidance were identified by countries, such as the identification of the statistical units, the recoding of losses during extraction for natural gas (e.g. flaring, venting, re-injection), the definition of capacity, as well as the collection and compilation of production of heat from autoproducers. These issues will be addressed in the ESCM. For more information, please visit:
http://unstats.un.org/unsd/energy/meetings/

Expert Group Meeting on SEEA-Energy, 5 - 7 October 2011, United Nations Headquarters, New York, USA. As part of the preparation of the System of Environmental and Economic Accounting for Energy (SEEA-Energy), UNSD organized an expert group meeting to review the draft SEEA-Energy and advise on changes to be incorporated in the final document. The meeting was attended by 14 experts from developed and developing countries as well as experts from international/regional organizations active in energy statistics and accounts. The preparation of the SEEA-Energy has been carried out as part of the revision of the System of Environmental and Economic Accounting (SEEA) which will be submitted to the United Nations Statistical Commission (UNSC) at its 43rd session in February 2012 for endorsement. The SEEA-Energy is one of the subsystems of the SEEA. It applies the accounting rules to energy information thus allowing the linkage of energy information with national accounts. The SEEA-Energy is also planned to be finalized in the course of 2012. For more information on the meeting, please visit:
http://unstats.un.org/unsd/envaccounting/seeaE/egm/lod.htm

Upcoming meetings

43rd session of the Statistical Commission, 28 February to 2 March 2012, United Nations Headquarters, New York USA. The upcoming session of the UNSC will discuss the following two reports related to energy statistics. The first is on the compilation of Natural Gas statistics. Given the increasing importance of natural gas in the global energy mix, a number of activities are being undertaken at an international level to strengthen the quality and availability of statistics on Natural Gas. The report presents an overview of the current international activities in the collection and compilation of statistics on Natural Gas and an overview of the main problems that countries and organizations face in this area. The report also presents an outline of the work programme that UNSD, in cooperation and coordination with other international and regional organizations, intends to undertake to improve annual and monthly collections on Natural Gas statistics. The second is the report of the Committee of Experts on Environmental-Economic Accounting on the development of System of Environmental and Economic Accounting (SEEA). The energy accounts are an important component of the SEEA. The report also presents the process for finalizing the SEEA-Energy and identifies the need to have the SEEA-Energy adopted as soon as possible. For more information, please visit:
http://unstats.un.org/unsd/statcom/sc2012.htm

Editorial Notes

The Energy Statistics newsletter is a bi-annual publication, prepared by the Industrial and Energy Statistics Section of the United Nations Statistics Division, Department of Economic and Social Affairs.

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