Department of Economic and Social Affairs - United Nations Statistics Division

Energy Statistics Newsletter

Issue Number 2, March 2006

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Features:

Dear Readers,

Welcome to the second issue of the United Nations Energy Statistics Newsletter that aims to update you on activities and developments of the United Nations Energy Statistics Section, part of the United Nations Environment and Energy Statistics Branch, United Nations Statistics Division (UNSD). The newsletter covers recent meetings, publications, technical cooperation activities, as well as short reviews on topical issues. Furthermore, the Market Brief will give you an overview and brief insight of trends of specific markets. We hope that you find the newsletter useful and thank you for your support. Please be sure to register as a subscriber and to submit any comments or suggestions to ***energy_stat@un.org***.

Energy Statistics at the 37th session of the Statistical Commission (SC) "Report of Statistics Norway on Quality Components of Oil Statistics"

The energy statistics programme review was presented and discussed at the 36th session of the SC in 2005 and this year energy statistics was again on the agenda of this high level forum of statisticians from around the world. A discussion paper was presented by Statistics Norway on the quality of the oil statistics, followed by many interventions from countries outlining the importance of energy statistics and their development.

(continued on page 3)

First meeting of the Oslo Group on Energy Statistics, 6-8 February 2006, Oslo, Norway

18 countries and 5 international organizations participated at the 1st meeting of the Oslo Group, established following the recommendation of the Ad-hoc group meeting on energy statistics (May 2005, New York, hosted by the United Nations Statistics Division). The role of the group is to discuss methodological issues, to learn from good practices and to contribute to the methodological development and harmonization of energy statistics that would lead to an improvement in energy statistics at international level.

(continued on page 4)

The Joint Oil Data Initiative (JODI) World Database is available on the Web

On 19 November 2005, in conjunction with the inauguration of the International Energy Forum Secretariat (IEFS) premises in Riyadh, the Custodian of the Two Holy Mosques, King Abdullah Bin Abdulaziz Al-Saud officially launched the JODI World Database.

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Collection and compilation of Energy Statistics for the year 2004

The 2004 energy data collection is under way. Although the deadline for returning the questionnaire is past, some countries have still to send their completed questionnaires to the UN Statistics Division. The Energy Statistics questionnaire, covering crude oil, electricity and the main fuels, was sent in November 2005 to more than 150 countries and territories. We will receive additional data from OLADE, concerning Latin American countries, and from IEA, regarding OECD and CIS countries.

Despite the improvement in response rates observed in the last years, increased effort and capacity building is still needed, particularly in Africa where response rates are low and the availability of data scarce.

UNSD thanks all responding countries for their cooperation in completing the questionnaire and returning it by the deadline. Meanwhile we would like to invite those countries which have not yet sent back the 2004 questionnaire to complete and return it as soon as possible. It is important for us to have the most reliable energy data from the country itself. Please check your mailbox!

The energy team is now working on the validation and compilation of energy data and might contact your office to clarify the data submitted. The 2004 Energy Statistics Questionnaire for data collection is available online at http://unstats.un.org/unsd/energy/quest.htm , but National statistical offices, ministries of energy or other national authorities responsible for energy statistics can request a pre-filled questionnaire containing data for their countries covering the last 5 years by e-mail by contacting energy_stat@un.org .
The 2004 validated data will soon be available to other national and international organizations on request from energy_stat@un.org, in order to allow for optimal use of the collected data.

The Joint Oil Data Initiative (JODI)

Significant progress has been achieved by the seven organizations (APEC, EUROSTAT, IEA/OECD, IEFS, OLADE, OPEC and UNSD) working together on the development of this initiative since its inception; however the database is not perfect. For many countries, especially for the Top 30 producers and consumers, timeliness, coverage and reliability are already at reasonable levels. The challenge for the organizations now is to increase the coverage to other countries, to further improve the timeliness of data submissions and to continually enhance the quality of all the data.

The database is available at: http://www.jodidb.org/

The 2004 UN Energy Statistics Questionnaire for data collection is now available in Chinese, in addition to our previous English, French and Spanish versions! Soon it will also be available in Arabic. Please visit *http://unstats.un.org/unsd/energy/quest.htm*

JODI Team

APEC

EUROSTAT

IEA

IEFS

OLADE

OPEC

UNSD

18 countries and 5 international organizations participated at the 1st meeting of the Oslo Group,...

For additional information on JODI, please visit: http://unstats.un.org/unsd/energy/

Energy Statistics at the 37th session of the Statistical Commission (SC) "Report of Statistics Norway on Quality Components of Oil Statistics"

The paper presents key characteristics of oil statistics and point out crucial methodological challenges. The focus is on national oil statistics, from production of primary resources to imports/exports, stocks and use. Because of the scale of the oil market, relatively small errors in data and conversion factors can cause important errors in the statistics. Some errors are inevitable, but good practices can minimize the risk. The paper emphasizes the importance of high-quality national data as the building blocks of an international system for oil statistics.

The report can be divided into four parts which can be summarized as follows:

[1] *The current situation and the need for high-quality oil statistics*: Because oil is so influential in both global and national economies, it is crucial that planners and analysts have reliable information on oil production, trade and stock to help understand markets and project oil prices. To achieve this, every country should have internally consistent national oil statistics, which form the basis for international reporting. The report recommends that countries apply internationally accepted concepts, standards, and methods for the production of national oil statistics.

[2] *Description and discussion of national and international use of oil statistics*: National systems for oil statistics require internal consistency between different divisions of a statistical office, and between the statistical office and the industrial and organizational bodies that provide data. Good national statistical systems will ensure a consistent national energy balance, with small statistical differences, and create positive synergies for international oil statistics. The main problems arising at international level are: a) delays in receiving data; b) lack of accuracy and frequent revisions to national figures; c) differences in national definitions and measurement units, and d) the application of different methods for international aggregation.
The report expresses the need for and/or strengthening of a centralized administration for national oil statistics based on a population of economic units comprising oil companies, producing fields, refineries, and consumer groups.

[3] *Detailed discussion of the production process and quality challenges of oil statistics*: The main problems in national oil statistics are definition and technical problems. The paper looks at some of the problems related to definitions and methods, standards for classification of energy products, units of measurement, conversion factors, and other factors that influence the quality of data.

[4] *Discussion of the future development of national and international oil statistics, with recommendations for further improvements:* The report recommends that countries improve their national oil statistics, consult with stakeholders, integrate international definitions into national statistics, revise their reports when common international standards are agreed upon, document their national production routines for oil statistics, increase the qualification level of statistical staff, and introduce new concepts, such as investment in oil and gas exploration, into national reporting. At international level, the report calls for an analysis of statistical differences in reporting, and continued international cooperation to refine global data systems and improve quality and timeliness.

The full report can be downloaded from http://unstats.un.org/unsd/statcom/sc2006.htm

The Statistical Commission decided that the following actions are to be taken in the area of energy statistics:

The Commission:
(a) Commended on the progress made in the area of energy statistics;
(b) Recognized the significance of energy statistics and recommended its development as part of official statistics, including the need for greater transparency in the documentation of methods and routines used in the compilation of energy statistics. It also emphasized the need for capacity building and training of statisticians;
(c) Supported the establishment and mandate of the Oslo Group on Energy Statistics and the Intersecretariat Working Group on Energy Statistics and requested proper coordination mechanisms between them;
(d) Supported the review of the UN manuals on energy statistics and requested that this review is based on all relevant methodological work in energy statistics;
(e) Emphasized the urgent need for harmonization of energy definitions and compilation methodologies and the development of international standards in energy statistics;
(f) Supported the establishment of a broadly based review team to analyze existing methodologies and propose common concepts and definitions. It requested that UNSD submit the modalities of this review team for the consideration of the Bureau of the Statistical Commission.

First meeting of the Oslo Group on Energy Statistics, 6-8 February 2006, Oslo, Norway

The meeting comprised the following sessions:

1. Opening and introduction
2. Identification of user needs
3. Scope of official energy statistics
4. Coordination with the Inter-Secretariat group
5. National practices: Identification of best practices and problems with methodology and data collection
6. Selected methodological and quality problems in energy statistics
7. Important energy statistics systems, and needs for harmonization
8. Work plan for the Oslo group
9. How to measure changes in energy efficiency
10. Methods for improving consistency in statistics on a national level, and reducing response burden.

The discussion in session 10 indicated that there is a need for updated and more user-friendly energy statistics manuals, and some of the participants offered to contribute to the revision by writing issue papers referring to the chapters of the existing manuals. A collection of best practices on the Oslo group web site was also recommended.

There is a need to coordinate the work of the Oslo group and the Inter-Secretariat Group on energy statistics, as both groups will deal with recommendations and harmonization of principles, methods and energy product definitions.

In order to improve energy statistics it may be necessary to increase the resources in this field, and some countries will need to build a legal base for data collection. Key to this is to have a good communication with policy makers and administrators within the country, and to increase the status and priority of this important area within the statistical system.

The 1st meeting of the Oslo Group concluded with the following recommendation:
The Oslo group will focus on working towards providing drafts on the following topics before the Second meeting of the Group (which is foreseen to be in November/ December 2006):

- Review of the definitions and proposals for common definitions for energy products, with special focus on the new and renewable energy types
- Proposals and issue papers for updating the UN manual, Energy statistics: Definitions, unit of measure and conversion factors (1986)
- The collection of country practices and their use for the elaboration of the definitions/manual
- The collection of best practices for energy statistics, and energy balance compilation.

The group will work through electronic discussion forums, in addition to traditional meetings, where the drafts and all the correspondence are to be available for the participants of the discussion forum.
The next meeting in the Oslo group is planned to be hosted by India.

Further information can be obtained at the following web-site: http://www.ssb.no/english/conference/ocg/

International Energy Statistics (InterEnerStat) Meeting, Paris, 22-23 November 2005

Twenty-four major regional and international organisations, either collecting or using energy statistics participated at the InterEnerStat meeting that was hosted by the International Energy Agency.

The organisations shared their experiences and challenges encountered in the development and maintenance of strong and reliable energy statistics and underlined low awareness and commitment to the statistical function at the political level, insufficient resources and expertise as well as the need for more harmonisation and co-operation. The requirement for more detailed energy statistics is coupled with a push for increased timeliness and reliability of these energy statistics. As a response to a call from the 2005 United Nations Statistical Commission, two new working groups – the Oslo Group and the Inter-secretariat Working Group on Energy Statistics – will explore ways and means of further improving energy statistics, respectively at country and international levels.

Further information can be found at the following web-site:
http://www.iea.org/Textbase/work/workshopdetail.asp?WS_ID=230

Why an Intersecretariat Working Group on Energy Statistics?

The United Nations Statistics Division (UNSD) has been active for more than 50 years in developing energy statistics, methodology and guidelines, and providing regional training to developing countries. It has also been responsible for collecting and disseminating energy data for all countries, territories and regions of the world. The current publication, the 2003 Energy Statistics Yearbook is the forty-fifth in a series of annual compilations, and the UNSD database currently contains detailed energy statistics for more than 200 countries since 1950.

In the early 1950's, coal was the major energy carrier worldwide; other energy sources, particularly oil, gradually gained in significance from the late sixties onwards. In Europe, the European Coal and Steel Community, launched in 1952 and the forerunner of today's European Union, recognized from the outset the need for energy statistics, and this is one of the oldest activities of Eurostat. Starting from the original six member states, it now covers its 25 member states and a number of other European countries.

In the 1970's several oil crises wakened the developed world to its increasing dependence on oil. At that time, several agencies that engaged in collecting and disseminating energy information on a regional level were created, including the Latin American Energy Organization (OLADE) [1973] and the International Energy Agency (IEA) [1974]. Energy returned to the headlines in the 1990s, this time linked to development, environment and supply concerns, and a number of other related agencies were created, including the Asia Pacific Research Center (APERC) [1996], the African Energy Commission (AFREC) [2001].

Also, energy technologies are changing constantly, requiring the development of new methodologies and approaches, particularly for production of renewable forms of energy. Meanwhile data collection is becoming more complex, as markets are liberalized, more and diversified energy suppliers appear on the market, and more regional cooperation and intensified trade of energy products can be observed.

The appearance of regional and international organizations and new challenges resulted in accelerated development of methodology, and production of more energy data. Private companies also started to produce energy data at regional and international level. With thirty years of hindsight, one can see that this has lead to duplication, separate development of concepts and methods, and consequently, a lack of harmonization in some areas.

The organizations need to tackle these issues if they are to meet the increasing needs of their users, at a time when, worldwide, resources devoted to statistics are either stagnant or decreasing.

What are these increasing needs? Today, quality requirements for energy statistics have become exceptionally high, because of the unique economic, environmental, social and political significance of energy.

In order to formulate energy policies that maintain economic and social stability, prevent environmental degradation and promote sustainable development, policy makers in all countries, developing as well as developed, need to have a clear overview of their energy situation. This requires timely, detailed and reliable data on the different parts of the production and consumption chain as well as proper reporting mechanisms, sound checking procedures and adequate resources; in other words, mature and sustained energy statistics.

There is an increasing demand for data on many aspects of energy, produced according to common, accepted definitions and methodologies: a wide base of robust and consistent time series from which useful indicators can be drawn. Furthermore, the intricate link between energy, society, economy and environment means there is an increasing need to improve the integration of energy statistics with economic, social and environment statistics. Economic statistics of the energy sector; statistics on energy services; measuring the contribution of the energy sector to the national economy, the environmental implications of the production, transformation, transport and use of energy; energy and poverty; access to electricity; energy efficiency – these are only a few examples of the emerging questions that a comprehensive, integrated energy statistics system has to answer.

The indicators themselves can change depending on the message to be drawn, but statisticians must ensure the timeliness, accuracy, comparability, completeness/coverage and availability of the underlying data.

Developing countries suffered badly in the recession that followed the oil crises, and were ill-prepared for the kind of energy analysis that is commonplace in developed countries today. They were left behind, and not just in energy statistics. Routine data collection and dissemination activities remain under-funded.

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14th session of the UN Commission of Sustainable Development (CSD), 1-12 May 2006

The fourteenth session of the UN Commission on Sustainable Development (CSD-14) will take place in New York from 1 to 12 May 2006. The work programme for the CSD follows a two-year cycle. For the period 2006-2007 the focus of work is on *Energy for Sustainable Development*, *Industrial Development*, *Air pollution/Atmosphere*, and *Climate Change,* and these issues will be dealt with in CSD-14. Since these issues are closely interrelated, they are addressed in an integrated manner to enhance synergies and minimize trade-offs. CSD-14 will review progress and best practices in these areas, aiming to identify barriers to implementation and to facilitate their removal, particularly by promoting better funding and more adequate transfer of technology.

Regarding *Energy for Sustainable Development*, CSD-14 draws a link between energy and poverty, emphasizing that the provision of modern energy services has profound positive impacts on poverty eradication and standards of living. CSD's challenge is to improve access to reliable and economically viable energy services in the face of energy resource constraints and energy-related environmental impacts. To do this, the development, implementation, and transfer of cleaner technologies and alternative energy sources are necessary. However, high costs of these technologies remain a main barrier.

CSD promotes *Industrial Development*, highlighting industry's key role for sustainable development as a supplier of goods, services, and jobs. A goal of CSD-14 is to make sure that all countries, in particular least developed countries (LDC) and small island developing states (SIDS) benefit from industrial development. Specifically, CSD promotes industrial energy efficiency as a means to lower both production costs and emissions. Main barriers to energy efficiency are inadequate infrastructure and human capacities, a lack of investments and insufficient technology transfer.

Regarding *Air Pollution/Atmosphere*, CSD-14 emphasizes the necessity for integrated pollution mitigation efforts in the context of social and economic development. Main issues are the improvement of scientific knowledge, stratospheric ozone depletion, trans-boundary atmospheric pollution, and emissions related to energy, transport and industry.

Likewise, regarding *Climate Change*, CSD-14 calls for integrated strategies that take into account social and economic development needs. CSD highlights potentially adverse effects of climate change on sustainable development as well as the particular vulnerability of LDC and SIDS. The main means to mitigate climate change are new energy technologies and the adoption of more sustainable patterns of consumption and production, as promoted by the 10-year framework of the Marrakech Process.

CSD was established in 1992 to ensure an effective follow-up of the 1992 UN Conference on Environment and Development. CSD has been meeting annually from 1993 on. As the UN high level forum for sustainable development, CSD is responsible for reviewing progress in the implementation of Agenda 21, the Rio Declaration, and the Johannesburg Plan of Implementation. CSD also has a mandate to promote sustainable development-related dialogue and partnerships. Currently, CSD goes through a multi-year working program with clusters of specific thematic and cross-sector issues.

Further information can be found at:

CSD website: http://www.un.org/esa/sustdev/csd/review.htm

CSD-14 documents: http://www.un.org/esa/sustdev/documents/docs_csd14.htm

Internship

The UN ***Energy Statistics Section*** receives interns on a two-month assignment basis, three times a year, within the framework of the UN Internship Programme. The objective of this programme is threefold:

- to provide the opportunity to graduate and post-graduate students from diverse academic backgrounds to be assigned to United Nations offices where their educational experience can be enhanced through practical work assignments;
- to expose them to the work of the United Nations; and
- to provide UN offices with the assistance of highly qualified students specialized in various professional fields.

The UN Energy Statistics Section offers interns two months' work experience on energy topics and issues that are currently considered relevant in the area of energy statistics. In assigning tasks to interns, their personal interest and background is taken into account.

The Energy Statistics Section is looking forward to receive interns who are interested at working on energy statistics issues in an international environment.

To check your eligibility, how to apply, and other information about the UN internship programme, visit: http://www.un.org/Depts/OHRM/examin/internsh/intern.htm.

Publications

Our publications are now available in PDF format at: http://unstats.un.org/

The ***2003 Energy Statistics Yearbook*** is now available in pdf format on our website: ***http://unstats.un.org/unsd/energy***

> The ***Energy Statistics Yearbook*** provides internationally comparable series of commercial energy statistics summarizing world level and regional energy trends. Annual data for 215 countries and areas for the period 2000 to 2003 are presented on production, trade and consumption of energy: solids, liquids, gaseous, traditional fuels and electricity in a series of 38 comprehensive tables. In addition, per capita consumption series are also provided for all energy products. This year we have introduced bookmarks in the electronic version to facilitate navigation through such a huge publication.

To find out more about the recent yearbooks, please visit our websites: http://unstats.un.org/unsd/energy/yearbook/EYB_pdf.htm and http://unstats.un.org/unsd/energy/balance/EBEP_pdf.htm

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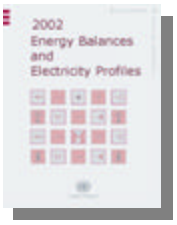


➥ The following methodological publications from the UN Statistics Division on energy statistics are available in electronic format at: http://unstats.un.org/unsd/pubs/gesgrid.asp?mysearch=energy&sort=title

Energy Statistics: Definitions, Units of Measure and Conversion Factors
Series: F, No.44
Sales number: 86.XVII.21
Available in English, French, Spanish and Russian

Concepts and Methods in Energy Statistics, with Special Reference to Energy Accounts and Balances--A Technical Report
Series: F, No.29
Sales number: 82.XVII.13
Available in English, French and Russian

Energy Statistics--A Manual for Developing Countries
Series: F, No.56
Sales number: 91.XVII.10
Available in English and French

➥ For monthly energy data on selected commodities such as production data of coal, lignite, natural gas, crude petroleum and electricity, please refer to the United Nations Statistics Division **'Monthly Bulletin of Statistics Online'** that can be found at: http://unstats.un.org/unsd/mbs/.

➥ **The Energy Indicators for Sustainable Development: Guidelines and Methodologies** is also available from the following website:
http://www-pub.iaea.org/MTCD/publications/publications.asp

Developments in Renewable Energy: Energy Statistics new focus area

Energy is the basic element for all of modern human civilization and a prerequisite for securing economic and social development. Along with national economic growth and social evolution, global energy consumption will continue to grow. Energy resource and environment issues are becoming the key issues faced by the international community. Providing affordable, reliable and secure energy is essential to ending extreme poverty and building a better and cleaner world. However, a reliable and affordable energy supply faces many challenges and is far from the norm in the developing world, where more than two billion people do not have access to modern energy services and 2.4 billion people rely on traditional biomass for their basic energy needs.

The recent significant increase in oil prices on the world energy market has shown the increased economic risk of relying primarily on imported energy by many countries. By developing local sources of new and renewable sources of energy such as hydro, wind, solar, geothermal and modern biomass including liquid biofuels, countries can create diversified energy portfolios that are less vulnerable to large price fluctuations.

Meanwhile, large scale consumption of fossil fuels has caused a series of pollution problems, some of which have become prominent global environmental problems, threatening the development of human society. Deployment of renewable sources of energy can provide an environmental friendly solution by reducing net greenhouse gas emissions and waste, as well as minimizing the pollution of air, water and soils that results from the production, transport and processing of fossil fuels. Moreover, as many renewable sources of energy are local and linked to rural areas, exploiting such sources can provide jobs in otherwise poor areas.

In terms of policy development, investment, and market growth, renewable energy shows increasing momentum and significance. Recognizing the role and importance of new and renewable energy, one of energy statistics' main tasks in the short run shall be to concentrate on the development of definitions and data collection practices on new and renewable energy. At the first meeting of the Oslo Group on energy statistics on 6-8 February 2006, UNSD underlined the importance and the current challenges in renewable energy statistics.

UNSD Energy Statistics prepared a draft document 'Comparisons of Renewable Energy Definitions in the Questionnaires of Different Organisations' which presents an overview of the definitions of renewable energy sources and products, and attempts to define the products in international classifications. The definitions used by international organizations for new and renewable products do not seem to go far enough to cover all the major products and especially the new products with strong potential, in line with the progress of technology, policy support and market investment. Many renewable products are not specified in the classifications, or are classified with different breakdowns, which increases the inconsistency in data collected for international comparison.

It is difficult to collect and monitor data on renewable energy statistics, especially for the traditional renewable energy sources such as wood and other biomass, which are mostly utilized in less developed remote areas, where statistical data are very limited and less reliable. These energy products are mainly not commercialized and only collected and consumed locally, so they are not generally adequately covered in national or regional energy statistics.

Recommendations to improve renewable energy statistics are:

- Harmonize and standardize definitions and classification in close cooperation between the different international organizations and national statistical offices;
- Analyze the resource potential/ development status/ main products/ policy/ scenario of renewable energy in countries;
- Periodically review and update the information and questionnaires used by international organizations, because of the fast development of renewable energy technologies and diversified energy sources/ products;
- *Develop and refine estimation methodology for traditional forms of renewable energy*.

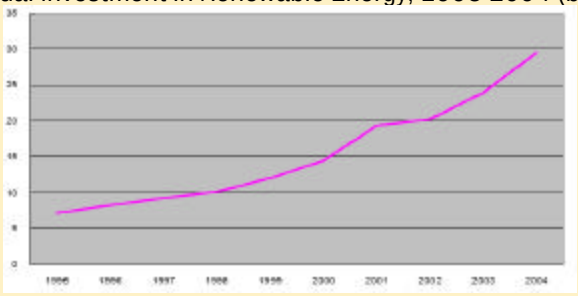
Market Brief: Renewable Energy Analysis, 1995-2004

Overview[i]

Increasing demand for energy has been a main feature of recent decades. In 2004, global primary energy consumption increased by 4.3%, while in Asia-Pacific it grew by almost 9%[ii]. The doubling of oil prices in the last two years caused major disturbances in the energy market. Moreover, there are environmental consequences of the increasing energy consumption as burning fossil fuels is the main source of greenhouse gases (GHG) emissions, identified as a cause of global climate change. In order to protect their economies from swings in oil prices, to diversify their energy supply, to promote development that can be sustained in the long term, and to comply with international commitments to reduce of GHG emissions, both developed and developing countries have placed renewable energy at the top of their agenda, as an important component of energy strategies.

Renewable energy is strongly promoted in many countries through policies and also through investment into the sector. By 2004, at least 45 countries had set up renewable energy policy targets with the aim of producing between 5% and 30% of electricity from renewable sources by 2010-2012. The world annual investment in renewable energy has grown from US$6 billion in 1995 to US$30 billion in 2004, excluding large hydropower plants. Investment in large hydropower plants represented an additional $20–25 billion in 2004, mostly in developing countries.

Figure 1: Annual Investment in Renewable Energy, 1995-2004 (billion dollars)



Source: Renewables 2005 Global Status Report, Dr. Eric Martinot *(continued to page 10)*

… ***world annual investment in renewable energy has grown from US$6 billion in 1995 to US$30 billion in 2004***

Why an Intersecretariat Working Group on Energy Statistics? *(continued from page 5)*

To give an example of what we are up against, in Africa, ten years after the adoption of the 1993 SNA[1], less then one fifth of the African countries have been able to provide six or more of the minimum required tables. Because of the strong interdependence between access to affordable energy and prosperity, urgent work is required to develop energy statistics in developing countries and to harmonize them with international recommendations.

However, countries need to learn to walk before they can run. And we need to remove the hurdles that get in their way. It is essential to remove duplicate data requests, improve manuals and handbooks, and simplify and standardize our requests to a minimum set of data required to meet the most basic energy policy needs. And we need to help countries build the statistical competences required to carry out this work. This must be done in such a way that, as countries develop, the initial work they (and we) have done, forms a corner stone on which to build the wide and solid base of consistent data that forms the backbone of energy analysis.

Conclusions:

- It is essential to increase awareness of the importance of energy analysis, and its base: energy data collection and energy balance compilation at country level.
- Countries need guidance from the international organizations working in energy statistics for compiling their national energy balances. However countries need adequate resources to compile energy balances and should cooperate with other stakeholders responsible for energy.
- It is essential that capacity building activities are well-coordinated between the different organizations, to maximize the benefits from the limited resources international organizations can put into this work.
- Responding to these requirements is the new challenge to official energy statisticians, to national statistical offices, and to international organizations active in collecting and using energy statistics.

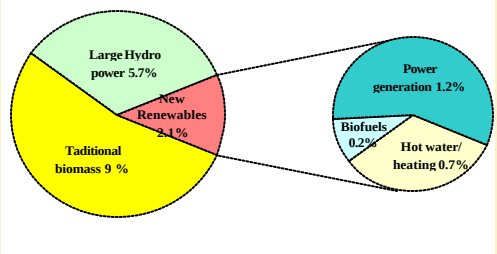
It is to meet these requirements that the Bureau of the Statistical Commission has created the Intersecretariat Working Group on Energy Statistics.

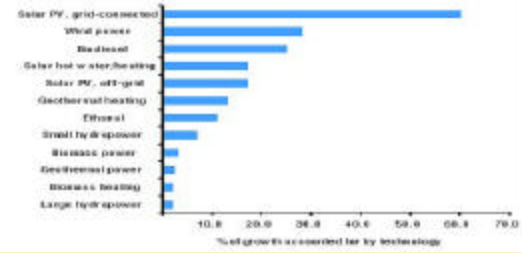
[1]Report of the IWG on National Accounts to the Statistical Commission, March 2005.

Market Brief: Renewable Energy Analysis, 1995-2004 (continued from page 9)

Review of the development of the renewable energy by type

The share of renewable energy in the world's total primary energy supply today is 17 % (including traditional biomass, large hydropower and "new" renewables such as small hydro, modern biomass, wind, solar, geothermal, and biofuels). The fastest growing energy technology in the world is the grid-connected solar photovoltaic (PV), led by Japan and Germany.





*...**in absolute term biomass will be the most important***

...China possesses more than half of the world's small hydropower capacity and added nearly 4 GW in 2004.

operations (CAFOs) are very important as they provide environmental services as well as generating energy.

Biofuels World total ethanol production was 31 billion litres in 2004 (48% from Brazil, 42% from United States, 6% from China). Brazil has been the world leader in promoting biofuels for the past 25 years. Germany leads in biodiesel, producing 1.1 billion litres in 2004 - 50% of the total world production. Other European countries have also decided to increase biodiesel production because of rising oil prices and the CO_2 emission trading mechanism.

The projected overall growth rate for biomass is relatively low, mainly because of its comparatively high starting point. But in absolute terms, biomass will be the most important source of renewable energy, due to its flexibility: it can be used directly in heating, or to produce electricity and biofuels.

Hydro

Large hydropower accounted for 16% of world's total power generation in 2004 (a total capacity of 760 GW), with a global average growth rate of 2%. Since the resource potential of large hydro is quite limited in many regions, the projected growth rate is relatively low and expected to fall in the future. The top five hydropower producers in 2004 were Canada (12%), China (11.7%), Brazil (11.4%), the United States (9.4%) and Russia (6.3%).

China has the largest installed capacity (74 GW). Large hydropower production is very dependent on rainfall levels, and is adversely affected by drought, during which water, already at reduced levels because of lower rainfall, will be released from dams to meet the basic demand for water for the population.

Small hydropower[iv] is increasing rapidly at 7% annual rate from 2000 to 2004. China possesses more than half of the world's small hydropower capacity and increased the existing capacity by nearly 4 GW in 2004. Australia, Canada, India, Nepal, and New Zealand also increased their capacities significantly in recent years. It is projected that exploitation of new potential will reach a peak during the next decade, up to 10% annually.

(continued to page 11)

Market Brief: Renewable Energy Analysis, 1995-2004 *(continued from page 10)*

…The fastest growing energy technology in the world is the grid-connected solar photovoltaic (PV), followed by wind power generation.

Solar

Grid-connected solar photovoltaic generation is the fastest growing renewable energy technology with around 60 % per year between 2000–2004, mainly in Japan, Germany, and the United States. However it started from a very small base, and is still not a significant player.

Solar hot water/heating technologies are more widespread. China accounts for 60% of total installed capacity worldwide, the European Union accounts for 11%, followed by Turkey with 9% and Japan, 7%. The Chinese market, in particular, is booming, with a 26% capacity increase in 2004. The world total installed collector area adds up to 110 million square metres, or 110 square kilometres (77 GW of heat production capacity), and almost 40 million households worldwide now use solar power to heat their water, representing around 2.5% of all the households in the world.

Wind

Wind power capacity grew by an average of 28 % per year from 2000 to 2004, led by Germany. Markets are concentrated in Germany, Spain, India, the United States, and Italy. Russia, China, South Africa, Brazil, and Mexico are now taking their first steps to develop large-scale commercial markets. Offshore wind power is just emerging in Europe with over 40 GW planned in Germany, the Netherlands and UK.

The first large-scale offshore wind farm (170 MW) was completed in 2003 in Denmark.

Geothermal

Geothermal power increased by more than 1 GW between 2000 and 2004 in the world, with most significant developments in France, Iceland, Indonesia, Kenya, Mexico, the Philippines and Russia. Most of the geothermal power capacity exists in developed countries. Because of its unique geology, Iceland leads the world in geothermal direct heating, which supplies 85 % of its total space-heating needs. Small-scale applications (heat pumps) are of broad potential, whereas technical exploitable potential is expected to increase during the next years due to technical innovation.

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[i] *Renewable Energy data used in analysis are from Renewables 2005 Global Status Report, Dr. Eric Martinot*

[ii] *BP Statistical Review of World Energy June 2005*

[iii] *Municipal Solid Wastes is not included, because the comparable information from developing countries is not available.*

[iv] *There is no consensus in definition of small hydropower. It is generally according to a definition of 10 MW, but higher in some countries such as China, which officially defines small hydro as less than 50 MW.*

Editorial Notes

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