



SAARC Energy Centre Newsletter

Fostering South Asian Energy Cooperation

July - September 2014

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Ninth Governing Board Meeting

The Ninth meeting of the Governing Board (GB) of SAARC Energy Centre (SEC) was held in Islamabad on 11-12 September 2014. The Meeting was chaired by Mr. Dinesh Kumar Ghimire, the GB Member from Nepal.

The meeting was opened by Mr. Ahmar Ismail, Director (ETS) as representative of the Secretary General of SAARC. In his opening remarks he underscored the important role of the Members of the GB with regard to ensuring that program activities are demand driven, relevant and useful for Member States. He also drew attention towards the recommendations of the Programming Committee, passed on from time to time at its different sessions, for compliance of the SEC. He stressed the need of Energy Efficiency and Energy Security. He indicated that SEC is doing commendable tasks in promoting Regional Energy Cooperation and expressed that the deliberations of the meeting would be productive and meaningful.

Mr. Shahzada Khalid, Officer In-charge, SEC welcomed the Chairperson and Members of the Board and presented the Analytical Report for the Year 2014 with details of History and Mandate of the SEC, its Programme Activities, and Administrative and Financial matters. He apprised the GB Members on the activities carried out under the supervision and guidance of its GB which Reports to the SAARC Standing Committee through the Programming Committee. He not only underscored the central role of the GB but also stressed the active involvement of GB Members in fulfilling the mandates of the Centre. The meeting concluded with a Vote of Thanks proposed by Mr. Mohammad Hossain, GB Member from Bangladesh on behalf of the Members of the GB.

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SAARC Dissemination Workshop on SEC Study on Cogeneration Opportunities in Sugar and Paper Industries in SAARC Member States

The SAARC Dissemination Workshop on **Cogeneration Opportunities in Sugar and Paper Industries in SAARC Member States** was held in Mount Lavinia Hotel, Colombo, Sri Lanka on 25-26 September, 2014 in collaboration with Ministry of Power and Energy, Sri Lanka.

A total of 19 delegates from Bangladesh, India, Pakistan and Sri Lanka participated in the workshop. The workshop was inaugurated by Mr. M. I. M. Rafeek, Acting Secretary, Ministry of Power and Energy, Sri Lanka. On behalf of Director SAARC Energy Centre, Mr. Md. Anwarul Islam, Research Fellow welcomed the delegates in the Workshop.

SAARC Energy Centre conducted a study to review existing cogeneration capacities in Sugar and Pulp & Paper Industries in SAARC Member States with a view to assessing the current cogeneration situation, the potential, government initiatives and legal framework. The study also covers technical aspects, economic drivers and environmental benefits and, barriers & constraints in implementation of cogeneration in SAARC Member States. The main objective of this dissemination workshop was to share country-wise findings and discussions on Cogeneration issues in Sugar and Paper Industries in SAARC Member States.



The delegation from each Member State made their country presentation to the participants of the workshop on the subject as well as on the overview of energy supply and demand situation in their respective country. The Workshop included various technical sessions on (i) Cogeneration Opportunities in Sugar and Paper Industries in SAARC Member Countries; (ii) Cogeneration Implementation Strategy and Way Forward in SAARC Member Countries; (iii) Status of Sugar Cogeneration in India, and Opportunities for Mutual Cooperation in SAARC Member States; (iv) Collaboration between Academia and Industry for Research on Co-Generation to Make it More Appropriate Technology; and (v) Feasibility Study of a Cogeneration Plant Using Saw Dust.

The Resource Persons, including the expert who conducted the study and Reviewer of report, for this workshop were renowned Cogeneration Experts from Infrastructure Investment Facilitation Company-Bangladesh, Cogeneration Association of India, University of Engineering and Technology-Pakistan and Ceylon Electricity Board-Sri Lanka.

In the Valedictory Session, the following **recommendations** were made after a rigorous constructive discussion among the participants.



1. Development of Regulatory Framework/ Environment for Cogeneration

A SAARC Member State, which does not have a comprehensive regulatory framework, may take up and develop the following documents.

- Guidelines for good practices in cogeneration
- Manual for developing a cogeneration project
- Model contract agreements between (i) co-generator and host, and (ii) co-generators and electricity utility
- Standard financial model for cogeneration projects

The Tariff Rate and Tariff Structure for renewable fuel based cogeneration plant connected to the national grid should be set on a favorable/preferential and attractive basis.

2. Participation of State Energy Suppliers

State energy suppliers (electricity and gas companies) should play a greater and proactive role in cogeneration by establishing partnership with potential co-generators.

3. Financing

Concessional financing windows for cogeneration projects need to be established. Wherever such windows exist, they should be active in providing technical funding assistance to the host of the potential cogeneration project.

4. Private Investment in Cogeneration

The build-own-operate-transfer (BOOT) model/public-private-partnership (PPP) allows private sector investment to flow into the cogeneration industry and therefore, BOOT developers need to be identified and promoted.

5. Institutional Structure

National committees or focal points may be established under the concerned energy/power ministry of each Member State with a view to emphasizing the use of cogeneration.

6. Cooperation between Academia and Industry

A good cooperation (cross-functional team) between academia and the cogeneration industry can be beneficial for both parties and hence needs to be encouraged.

7. Types of Cogeneration

All types of cogeneration systems should be taken up. Some of the important ones in terms of industrial sectors or technologies are Sugar industry, Pulp & Paper industry, Textile industry, Chemical, steel, Pharmaceutical & Fertilizer industries, Agro-based industries, Commercial buildings and industrial units, Sawmills, Dendro Thermal Power Plants and Special Economic Zones/Industrial Zones.

Cogeneration Facilitator

Co-ordination among the users, suppliers, financiers, developers, etc., is very important and there is a need to have a facilitator or an intermediary agency for assisting in the free flow of information, skills, technology transfer, study tours and cooperation among SAARC Member States. SAARC Energy Centre has a role as 'Facilitator' towards promotion of cogeneration within the SAARC region, by arranging seminars/workshops for awareness about opportunities and potential of each country, and facilitating for technical and financial assistance for each country.

Reported by:
Md. Anwarul Islam
Research Fellow (TT)

Upcoming SEC Events 2014

❖ Training Workshop on Power System Studies for Synchronization of Multiple Systems

This three day workshop is going to be held in Kabul Afghanistan. The workshop has been scheduled to be held on October 20-22, 2014. The workshop is being organized in collaboration with the Ministry of Energy and Water, Afghanistan.

❖ SAARC Inception Workshop on 20-Year Perspective Plan for the Power Sector of SAARC Region

The workshop is scheduled to be held in Male, Maldives on 22-23 December 2014 in collaboration with the Ministry of Environment & Energy of Maldives. The TOR for the 20-Year Perspective Plan, which is being prepared by an Expert from World Bank, will be discussed and finalized during the Workshop.

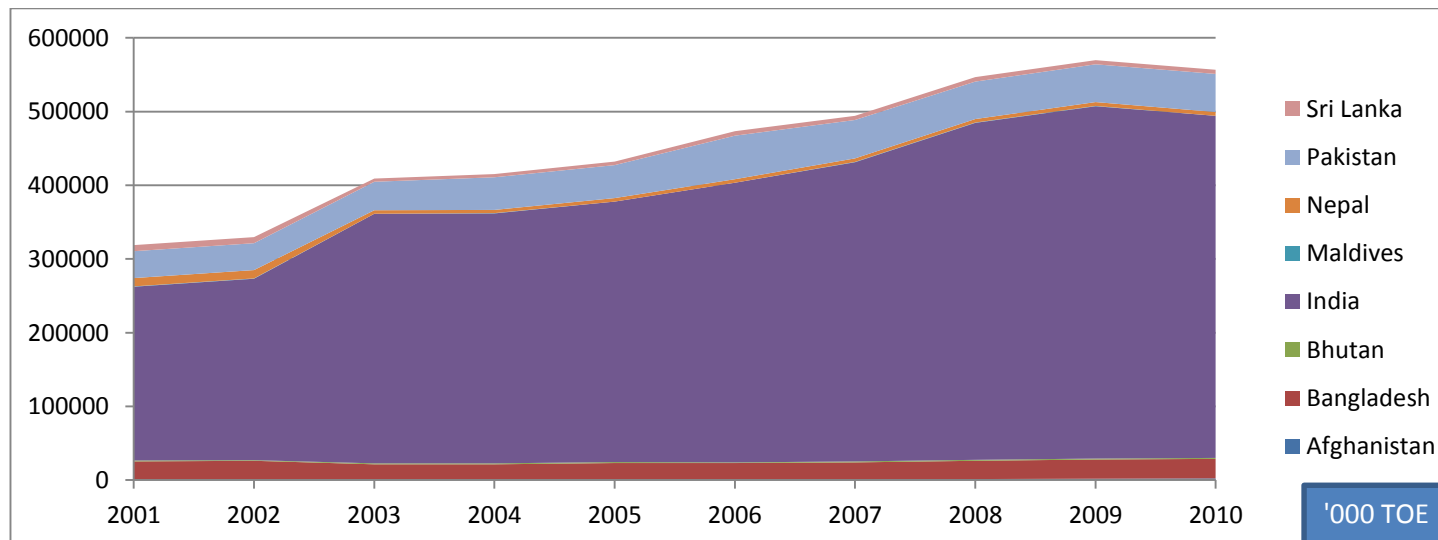
❖ SAARC Workshop on Role of Independent Media for Increasing Public Awareness in Energy Conservation

This workshop is going to be held in collaboration with the Department of Renewable Energy, Economic Affairs of Kingdom of Bhutan. The event is going to be held on December 19-20, 2014 in Thimphu, Bhutan.

❖ Webinar on Concept, Establishment and Operation of a Power Exchange for Regional Power Trading

The services of Mr. Imtiaz Ahmed Khan have been hired as Technical Consultant for this Webinar on Concept, Establishment and Operation of Power Exchange for Regional Power Trading and the subject webinar will be delivered by Mr. Rajesh K Mediratta, an Expert from India. The webinar is planned for 11 November 2014.

Final Energy Consumption in the SAARC Member States (2001-2010)



SEC Program Activities of FY 2015

Study	<ul style="list-style-type: none"> • Feasibility Study for Setting Up SAARC Regional / Sub-regional LNG Terminals • Impact Assessment of SEC's Initiatives and the Way Forward • SAARC Energy Data Bank • SAARC Study for the Development of 20-Year Perspective Plan for the Power Sector of the SAARC Region (Funded by World Bank)
In-house Study	<ul style="list-style-type: none"> • Study to Assess Renewable Energy Development in South Asia; Achievements and the Way Forward in the Perspective of Policies and Investment Opportunities • Study on Harmonizing Transmission Grid Codes of SAARC Member States to Combat Regulatory Challenges for Intra-region Power Trading/Interconnections. • Study on Optimum Power Generation Mix for a Sustainable Power Sector in South Asia. • Study on Energy Efficiency in Transport Sector in SAARC Member States.
Capacity Building	<ul style="list-style-type: none"> • SAARC Training Workshop on Experience Sharing on Coal Bed Methane, Underground Coal Gasification. • SAARC Dissemination Workshop on Comparative Study on Rural Electrification Policies in SAARC Member States • SAARC Dissemination Workshop on Study for Designing Management and Monitoring Framework for Regulatory Compliance by Power Transmission Utilities in the SAARC Region • SAARC Seminar on Application of on-grid Biogas Technologies • SAARC Perspective Workshop on the Past, Present and Future of High Voltage DC (HVDC) Power Transmission • SAARC Workshop on Energy Based Livelihoods Contributing to Economic Empowerment of the Marginalized Sectors and Women in the SAARC Region • SAARC Dissemination Workshop on the Study for Development of a Potential Regional Hydro Power Plant in South Asia • SAARC Workshop on Role of Energy in Transport Sector in SAARC Member States • Study Visit of SEC Professionals to India • Capacity Building of SEC through External Expert Services

Two Professionals join SEC



Mr. Jeebachh Mandal
Programme Leader (Energy Trade)

Graduated in Electrical Engineering from Aligarh Muslim University, India and an M. Tech in Hydro-electric System Engineering and Management from IIT, Roorkee, India, Mr. Jeebachh Mandal joined SAARC Energy Centre (SEC) as a Programme Leader (Energy Trade) on 15 September 2014.

Mr. Mandal has served the Government of Nepal for eighteen years. Designated Senior Divisional Engineer, he has been working in the capacity of Chief of 'Rural and Alternative Energy' Section in the Ministry of Energy. He has also worked as Deputy Division Head at the Joint Nepal-India Project Office for the Study and Investigation of Saptakoshi High Dam and Sunkoshi-Kamala Diversion Multipurpose Hydropower project. He has expertise in planning and development of hydropower projects, transmission line projects, Solar PV and Bio-mass projects. Mr. Mandal has also had part time teaching and research experience in the areas of Power System Planning and Reliability Engineering.

He has participated and represented Nepal in a number of workshops, conferences, seminars and trainings in Canada, China, Germany, India, Indonesia Malaysia, Norway, Singapore and Thailand.



Mr. Suresh Shrestha
Research Fellow (Energy, Transport and Environment)

Graduated in Mechanical Engineering from Aligarh Muslim University in India and an MBA from Lahore University of Management Sciences (LUMS) Pakistan, Mr. Suresh Shrestha joined SAARC Energy Centre as a Research Fellow (Energy, Transport and Environment) on September 15, 2014.

Prior to joining SEC, he was a part of Water and Energy Commission Secretariat (Government of Nepal) designated as Senior Divisional Engineer, where he was also the Programme Coordinator for the Nepal-German Joint Project "Nepal Energy Efficiency Programme (NEEP)" and Project Counterpart in IAEA supported project "Enhancing National Capacity to Develop Sustainable Energy Policy"

During his tenure in WECS, he had been fully engaged in an Integrated Energy Planning including Energy Information System, National Energy Strategy, Energy Efficiency Strategy and Biomass Energy strategy. Mr. Shrestha has been trained in Energy Efficiency and Energy Statistics from IEA; and Energy Modeling from IAEA.

He also has the experience of working in the past as an engineer in the Department of Transport Management with the responsibility of vehicular pollution control.

Expert Group Meeting on Developing the APEF Energy Data and Policy Information Portal

At the first Asian and Pacific Energy Forum (APEF) held at Vladivostok, Russian Federation in May 2013, Ministers and senior government officials adopted the Ministerial Declaration and the Plan of Action on Regional Cooperation for Enhanced Energy Security and the Sustainable use of Energy in Asia and the Pacific.

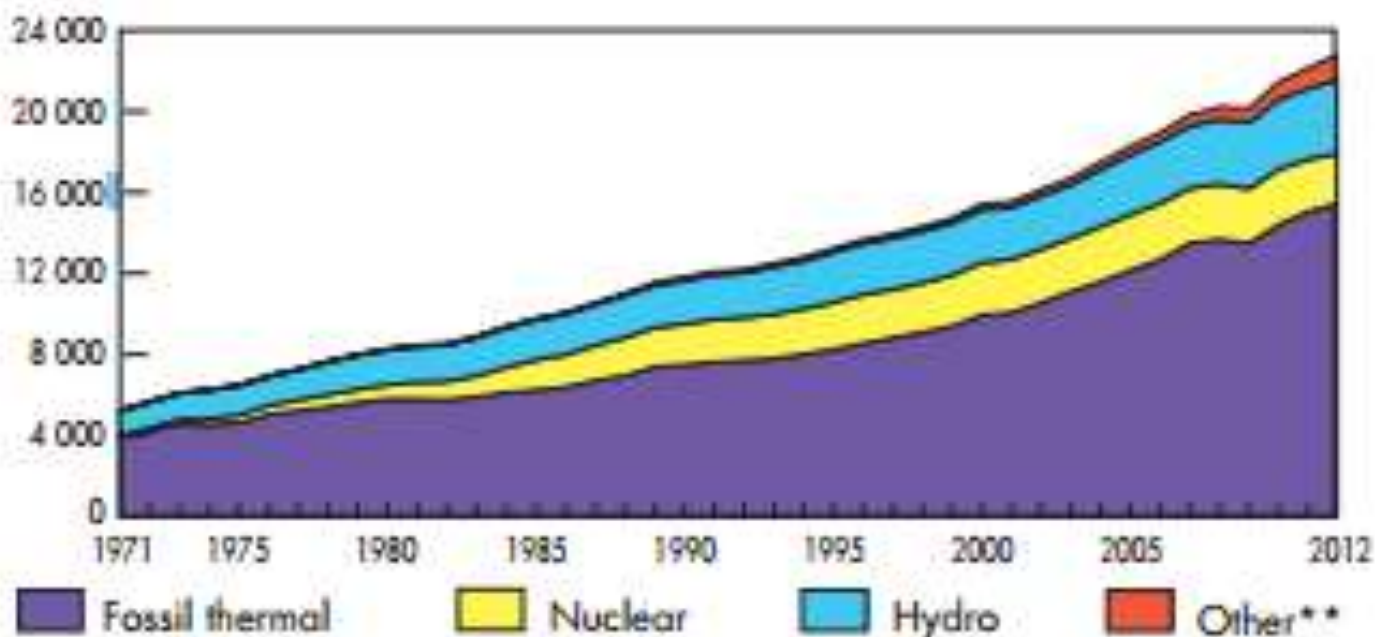
In this connection, the UNESCAP secretariat is developing the APEF Energy Data and Information Portal. The Expert Group Meeting which was held in Bangkok, Thailand on August 26-27, 2014 was directed at gathering feedback on the development of this portal. With a vision of a sustainable energy future, the APEF Data & Information Portal will offer centralized and user-friendly access to data and information, which will provide the foundation for research and analysis on regional energy and policy challenges.

The objective of the meeting was to draw the points from the meeting's dialogue and provide the secretariat with further direction for the portal's development to ensure a highly relevant and well-designed knowledge tool.

The issues like the Energy Practitioners and their information needs were highlighted in the event. The participants were shared the APEF Portal, where the Functionality, User Interface and Scope of Content were reviewed. The information needs for the Energy Practitioners, how data and policy information would be collected and managed were the highlights of the meeting. The meeting also emphasized on the sustainability considerations along with the potential linkages and partnerships.

Mr. Ahsan Javed, Research Fellow (RE) represented SAARC Energy Centre in the meeting.

World Electricity Generation by fuel (TWh)



*Excludes electricity generation from pumped storage.

**Includes geothermal, solar, wind, heat, etc.

***In these graphs, peat and oil shale are aggregated with coal.

Source: IEA

Energy Consumption and Supply Situation in Nepal

The main energy base for Nepal is biomass. Fuelwood is the predominant energy carrier contributing to more than 70 percent of energy consumption in the country. The inefficient use of biomass on one hand questions the sustainability of biomass supply, while on the other; it has the negative impact on human health of the users because of the indoor air pollution that crops up from the inefficient use of biomass. With exception of some lignite deposits, the country does not have its own reserves of coal, oil and gas. The country is entirely dependent on imports for petroleum products. With the rapid urbanization, the consumption of petroleum products is increasing which has resulted in a situation whereby the total import of petroleum in Nepal now has exceeded the country's total imports resulting in a miserable trade deficit.

Endowed with more than 6000 rivers, Nepal has a huge potential of hydropower, but only less than one percent has been so far harnessed. Today only about 60 percent of the population has an access to electricity. On top of that, the supply is very unreliable and insufficient, because of which the people are compelled to face power cuts of as long as fourteen hours a day in dry season, as most of the hydropower in the country is run-of-river type. Nepal's average annual per capita electricity is only 130 kwh, which is one of the lowest in South Asia. The households, the industrial and commercial sectors are badly impacted by power shortage in the country.

Despite its huge potential, hydropower will need some time to take its momentum. The deferred investment in electricity infrastructure has caused the commercial and industrial entities to increasingly operate costly diesel generators. This has also adversely impacted the competitiveness of the industrial sector and at the same time has put pressure on foreign currency reserves of the country.

Beside water resources, Nepal is a country endowed with high potential for renewable energy resources like solar and wind as well. As the country is located in favorable latitude and receives ample amount of solar radiation, it has a huge potential of solar energy. As Nepal has a much diversified landscape from high mountains to flat plains, the geographic characteristic and the scattered and sparse settlement will not allow the grid electricity to reach the entire Nepalese population and decentralized electricity is inevitable.

Energy is mostly consumed in non productive sector-the residential sector. More than 80% of energy is consumed in the Residential sector, followed by Industrial Sector which consumes about 8% of the total energy consumption in the country. Similarly, transport sector consumes a little more than 7% and commercial and agricultural sector consume about 3% and 1% respectively.

Water and Energy Commission Secretariat, Government of Nepal had recently conducted a national level survey of Energy Supply and Consumption in Nepal. The energy information below is the excerpts from the Energy Data Sheet published by Water and Energy Commission Secretariat, Nepal.

Energy Supply Situation in Nepal (2011/12)

Biomass Resources Supply Situation

Sources	Total Quantity	
	Million Tons	Million GJ
Fuelwood production	12.9	216.075
Wood fuel production from fruit trees	0.184	3.08
Production potential of agricultural residues	23	288.88
Production Potential of dry dung	15.7	170.97

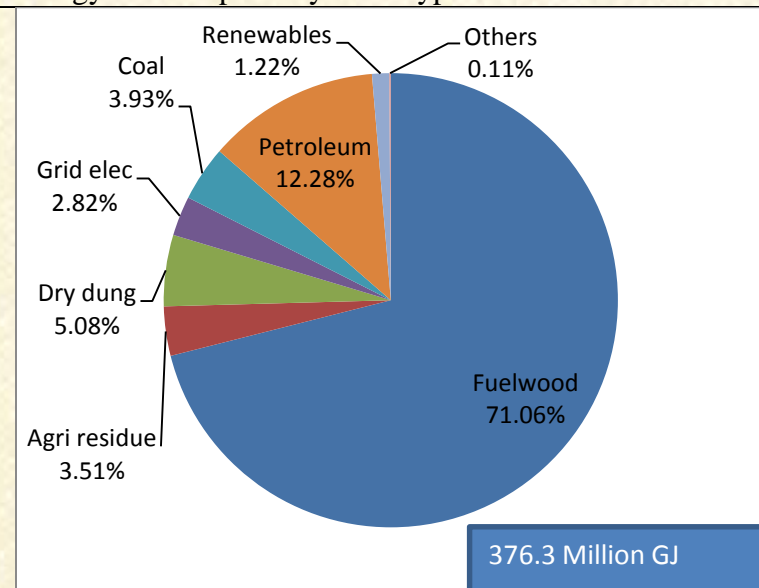
Hydro Power Plants

Hydro power	Installed Capacity (MW)
Small, Medium and Large Scale Hydro Power	762.03
Mini hydro	15.95
Micro hydro	18.65
Pico hydro	3.18

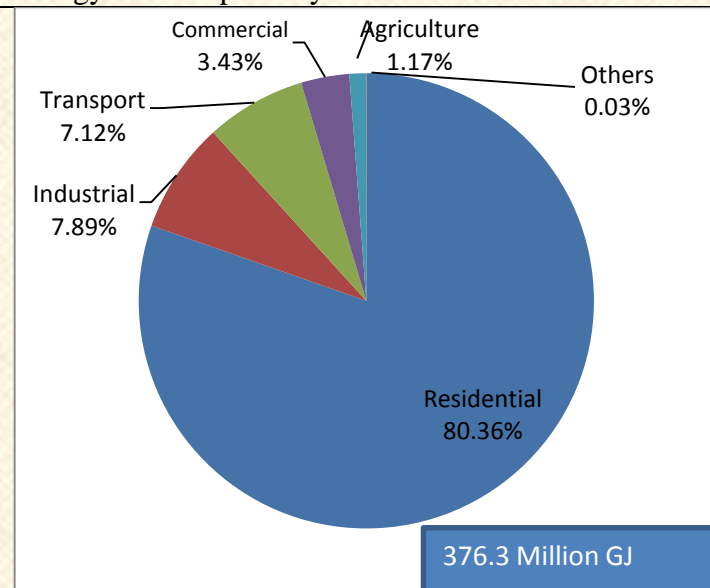
Biogas Plant and Solar PV

Total installation of biogas plants	258648
Installation of Solar PV	7445304 Wp

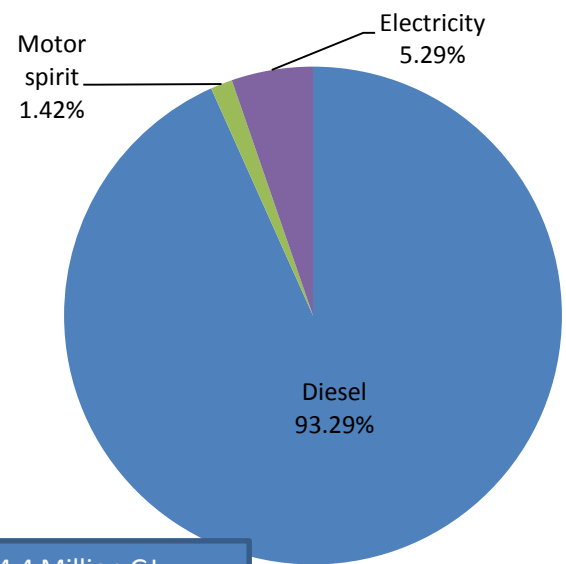
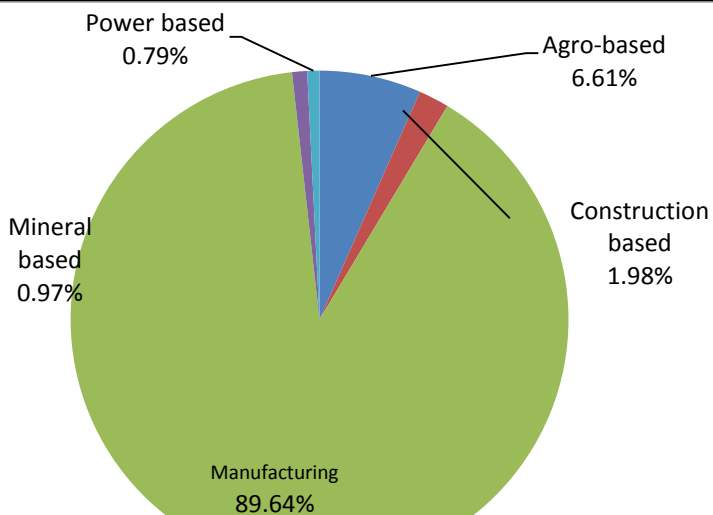
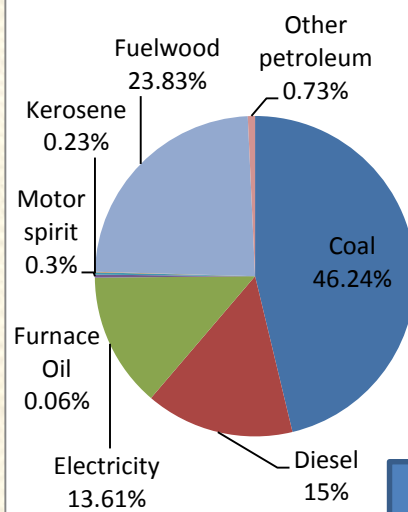
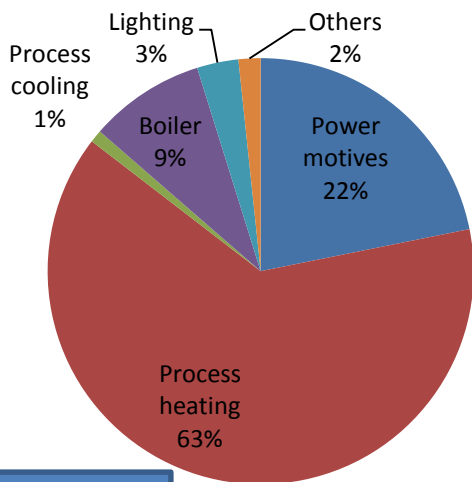
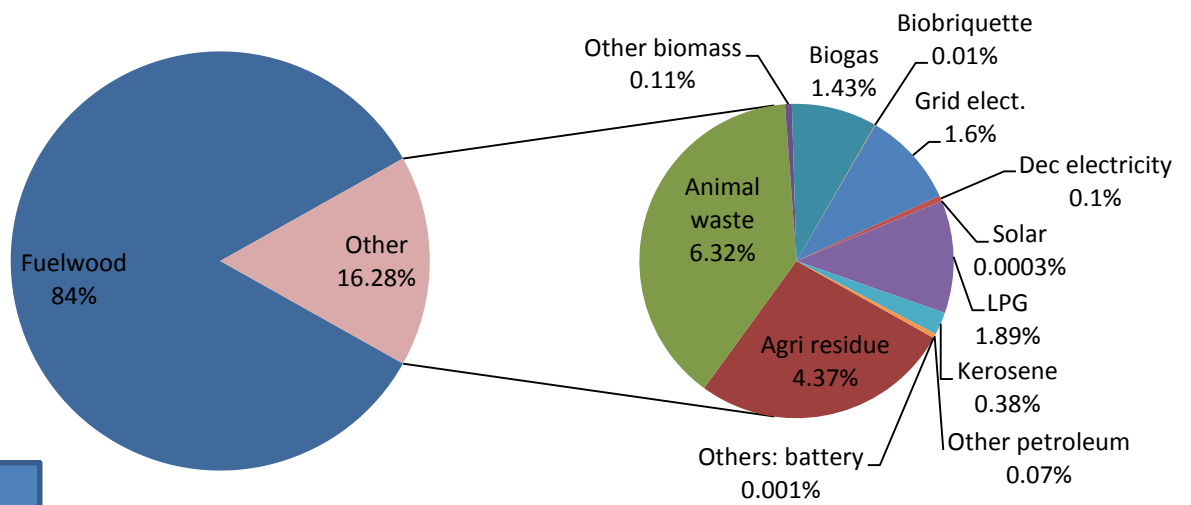
Energy Consumption by Fuel Type

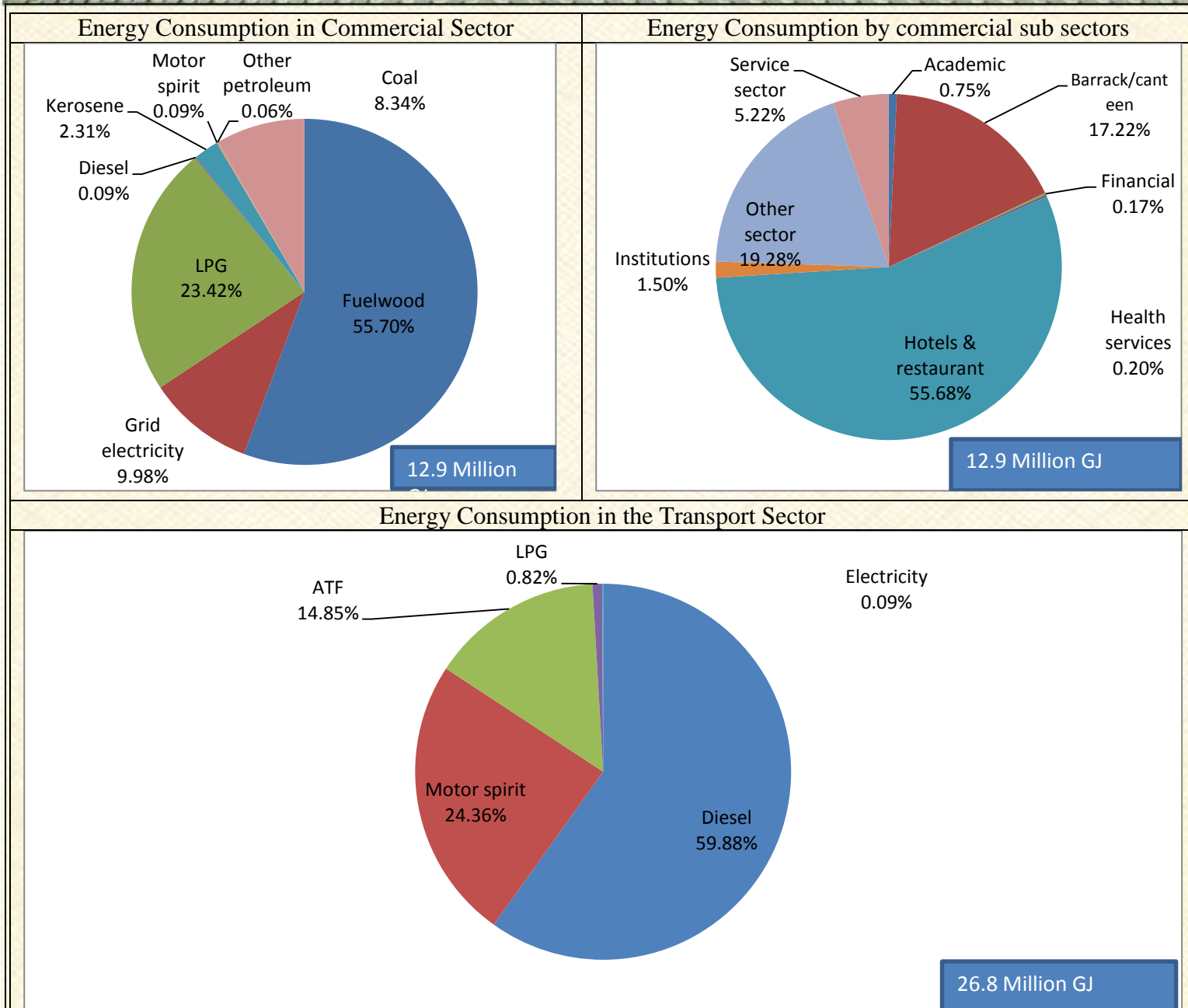


Energy Consumption by Sector



Electricity consumption of the world would reach 27000 TWh by 2020, of which 2249 TWh will be consumed in South Asia--IEA





Source: Energy Data Sheet, Water and Energy Commission Secretariat (WECS), June 2014

Energy Efficiency hugely reduces the dependence on energy supply. An improvement in Energy Efficiency and the development of Renewable Energy Technologies will mitigate the threat of energy security by reducing the exposure to the disruptions in the supply of fossil fuels.

SEC Governing Board



**9th Meeting of Governing Board of SAARC ENERGY CENTRE
11-12 Sept. 2014**

Governing Board of SAARC Energy Centre

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SEC Professional Strength



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A Few Energy Related Web Sources

Source Title	Links
The European Commission Energy	http://ec.europa.eu/energy/about/index_en.htm
Advanced Energy	http://www.advanced-energy.com/
International Energy Agency	http://www.iea.org/
The United Nations Development Program (Energy)	http://www.undp.org/energy
Department of Energy, USA	http://www.energy.gov
Federal Energy Regulation Commission, USA	http://www.ferc.gov/
U.S. Energy Information Administration	http://www.eia.gov/
United States Nuclear Regulatory Commission	http://www.nrc.gov/
Alliance to Save Energy	http://ase.org/
OPEC Archive	http://opecarchive.com/
ABB Oil, Gas and Petrochemical Industry Portal	http://www.abb.com/industries/us/9AAC123932.aspx
Oil Voice Pakistan	http://www.oilvoice.com/country/Pakistan/3446db88.aspx
Report Linker (Full access to more than 1.2 million reports with data on 450 industries & 3,000 sub-industries around the world, published by 200,000 reliable public sources)	http://www.reportlinker.com/country
The World Bank – Oil, Gas & Mining Unit	http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTOGMC
International Renewable Energy Agency (IRENA)	http://www.irena.org

Upcoming Event

Role of Independent Media for Increasing Public Awareness in Energy Conservation

(In collaboration with Department of Renewable Energy, Ministry of Economic Affairs, Bhutan)

19-20 December 2014

Thimphu, Bhutan

Thematic Areas of SEC Programme Activities



PROMO: Programme to Minimize Oil Imports

PETERN: Programme on Integrated Assessments of Energy, Transport, and Environment

PREPA: Programme on Rural Electricity for Poverty Alleviation

POSIT: Programme to Successfully Implement Technology Transfer

PENT: Programme on Energy Trade between the SAARC Countries

SAARC ENERGY CENTER

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