

*In the Name of Allah,  
the Most Compassionate, the Most Merciful*



## **Presentation to South Asia Regional Initiative for Energy Integration (SARI/EI)**

### **Regulatory and Policy**

**Eng. Nangialai Miakhail Head of Planning Department  
Da Afghanistan Breshna Sherkat**

**NEPAL Feb 19 - 20 , 2013**



# HIERARCHY OF POWER SECTOR IN THE COUNTRY

*The power sector , as per the Afghanistan National Energy Policy draft, which reflects the commitment of the Islamic Republic of Afghanistan to poverty reduction and private sector economic growth and stable Afghanistan. Ministry of Energy and Water is the Policy making Ministry and DABS is the overall responsible for all operations and maintenance of generation transmission and distribution in the country , more over the following ministries are also involved indirectly in Energy Sector in the country. as follows :*

- Ministry of Energy and Water (MEW).
- DABS ( Da Afghanistan Breshna Sherkat)
- Ministry of Economy (MoE).
- Ministry of Finance (MoF).
- Ministry of Rural Rehabilitation & Development (MRRD).
- National Environmental Protection Authority (NEPA),





# HIERARCHY OF POWER SECTOR IN THE COUNTRY .... Cont

Development of national electricity sector policies that promote an open and competitive market for electricity services in Afghanistan in an environmentally sustainable manner

4.1.2 Electricity sector strategic planning consistent with national energy policies, including attraction of private investment and establishment a competitive market environment for the benefit of all stakeholders in the electricity sector.

4.1.3 Identifying, evaluating, and forecasting electricity sector status and needs.

4.1.4 Planning, procurement and construction of new electricity Generation infrastructure projects in accordance with the terms of the Memorandum of Understanding (“MOU”) between MEW, DABS , all these responsibilities goes to the MEW as Policy making Ministry.




# LAWS AND ACTS GOVERNING THE POWER SECTOR

- National Energy Policy for Afghanistan( DRAFT),
- Renewable Energy Policy for Rural Areas in Afghanistan,
- Renewable Energy Strategy for Rural Areas in Afghanistan,
- Energy Efficiency Policy for Afghanistan,(DRAFT).
- Electricity Law for Afghanistan,
- Rural Electrification Guidelines for Afghanistan.
- Solar Guidelines for Afghanistan.



# ELECTRICITY ACT

- 
- 1.1 This Law has been enacted pursuant to Article 10 of the Constitution of the Islamic Republic of Afghanistan.
  - 1.2 The purpose of this Law is;
    - 1.2.1 To promote and develop Electricity Services, including Generation, Transmission, Distribution and supply of electricity, and to encourage development of renewable energy sources;
    - 1.2.2 To establish an Afghanistan Electricity Regulatory Authority (AERA) with power to regulate the Electricity Services market as set forth in this Law in order to assure a properly functioning market for such Electricity Services; and
    - 1.2.3 To establish certain Policy duties of the Ministry of Energy and Water (MEW) with respect to the Electricity sector.
  - 1.3 This law applies to any Electricity Enterprise that is providing or seeking to provide Electricity Service in Afghanistan.
  - 1.4 It is the policy of the Government of the Islamic Republic of Afghanistan that, to the maximum extent practicable, citizens of Afghanistan have access to safe, adequate and reliable Electricity Services, at fair and reasonable prices. Such services may be provided by Government owned and operated, or privately owned and operated enterprises or a combination thereof, operating under competitive market conditions.





# The Electricity Regulatory Authority

- 6.1 The Afghanistan Electricity Regulatory Authority (“AERA”) shall be established by this Law to regulate the provision of Electricity Service in Afghanistan, and shall perform the duties and functions defined by this Law in an open, objective, transparent, and non-discriminatory manner, following the procedures required by this Law within the framework of the MEW.
- 6.2 The AERA shall have an organizational structure in the framework of the MEW, and shall be supported by dedicated revenues from electricity service Licensee fees and by grants from donor agencies and international financial institutions (IFIs) processed in accordance with the provisions of law.
- 6.3 In order to lead and regulate the relevant affairs of the AERA, a Commission composed of five (5) members shall be established. Each Commission member shall by education, background, and experience be a qualified professional, with not less than five years of professional experience in the Electricity Service sector.





# The Electricity Regulatory Authority .....Cont

By professional qualifications, the Commission shall consist of at least one power system engineer, at least one attorney, at least one economist, accountant or financial analyst, and at least one person with experience in an organization which is a significant consumer of electricity.

The remaining position shall be filled on an at-large basis, and the total number of Commissioners shall include not less than one woman.

6.4 The terms of the Commissioners shall be staggered.

A Commission member shall be appointed for a term of 5 years, and may be reappointed once.

On initial appointment only when first constituting the Commission, one Commission member shall have a term of two years, one of three years, one of four years, one of five years, and one of six years.



# Role of Regulation

Through a process for the development and adoption of regulations, as defined by Article 8 of this Law, the AERA shall:

- 7.1.1 Provide balance to all of the varying interests of the Electricity Service sector, which is necessary to attract private investment, protect the environment, allow for economically and financially healthy Electricity Service operations, and ensure quality Customer services in the sector.
- 7.1.2 Perform the duties and functions defined by this Law by exercise of independent decision-making, based upon international regulatory practices and standards, and in an objective, transparent, and non-discriminatory manner.
- 7.1.3 Issue Licenses, and regulate the activities of Licensees, in accordance with the provisions of this Law.
- 7.1.4 Monitor compliance by Licensees with international treaties, agreements, contracts, and obligations entered into by the GIRoA in the electricity sector.
- 7.1.5 Determine tariff methodologies, categorize Customers for purposes of tariffs, approve or adjust tariff schedules of Licensees in accordance with the provisions of this Law.
- 7.1.6 Respond to complaints of Customers and the Electricity Service Providers and resolve disputes.
- 7.1.7 Promote and develop the norms, including technical standards for transmission and distribution electrical equipment and devices, service standards, and criteria for system dispatch services, while preparing for a competitive wholesale electricity market.







# License Eligibility

Any Person willing to construct, own or operate any Electricity Service at their own financial risk shall have the right to do so, provided they comply with the conditions of this Law, and with other applicable laws of Afghanistan.

Any Licensee operating any electricity Transmission System or electricity Distribution System authorized by this Law must make that system available to any Person who seeks use of such system on equal terms to any other Person, at fair Tariffs and terms of access established according to the Tariff principles stated in this Law.

Any high voltage Transmission System owned by the Government of Afghanistan or by a government-owned Electricity Enterprise on the date of passage of this Law, or subsequently acquired or owned by the Government of Afghanistan or by a government-owned Electricity Enterprise following the date of passage of this Law, shall not be transferred to non-government ownership, and must meet other conditions of fair and open access to all potential shippers as required by this Law.

The Electricity Services that may be issued Licenses by the AERA shall be defined by the AERA based on the functions performed, and the relative significance of those functions to the purposes of this Law. Such functional definitions shall include but are not limited to the following functions:





# Issuance of License

The duration of any Generation, Transmission, Distribution or other License shall be a renewable term of 25 years, except for any Supply License, which shall be for a renewable term of 10 years.

The AERA shall issue a rule defining the procedures to be followed for application to receive a License.

Such rule shall assure that any person who is entitled to, or required to, obtain a License under this Law or regulations of the AERA adopted in accordance with this Law, may receive such License by following such procedure.

The rule issued under Article 10.2 shall include a procedure by which a Person seeking a License may do so by means of registration using an Internet based facility, with no fee for the act of registration, and that any Person completing such registration shall be deemed to have received such License.

The information required to be provided during the registration process will be defined and adopted by AERA. AERA shall verify all such registrations, and may remove registration, and revoke the License, for any Person who has not fully and honestly completed all required information.





## Planning, Engineering, Supplies, Construction and Assembling of new Infrastructure of Energy Sector

- MEW shall continue to be responsible for surveying, planning and designing of the new Generation and Transmission Infrastructure.
- MEW shall also be responsible for engineering, supplies, construction and assembling of new projects. It is agreed that the forthcoming Infrastructure of Energy Sector is to be planned in a commercially and economically effective and sustainable manner.
- Since DABS is responsible for management therefore every relevant entity is to consult with it in each phase of development projects.
- For the time being, MEW shall have responsibility for import of power from outside the country in close consultation and understanding with DABS.
- DABS shall perform activities such as; management, maintenance and all commercial affairs related to operation or activity of infrastructure, sale and transmission of electric energy.
- DABS shall be responsible for expansion and strengthening of the existing distribution network of electricity.



# TARIFF POLICY

## Principles and procedure for setting Tariffs

- 14.1 Any Licensee having Significant Market Power, or if otherwise required by this Law to have regulated Tariffs, shall publish up-to-date Tariffs for all Electricity Services as follows:
  - 14.1.1 General Principle: Licensee may set Tariffs which, charged over the annual volume of sales, collectively reflect the justified total annual costs of Licensee for the provision of Licensed services, plus a reasonable rate of return, including (but not limited to): operation and maintenance costs; debt service; Licensee fees; reasonable levels of depreciation expense; the estimated statutory level of taxes which would be charged on the estimated before-tax profits; other taxes and fees paid by Licensee for doing business; costs of any fuels used; costs of any electricity purchased or generated for the purpose of resale to Customers; costs of a reasonable level of technical and commercial losses on the Licensee's system; and all other reasonable costs necessary and proper to the conduct of the Licensed activities.







# Dispute Resolution

- 24.1 An electricity sector investor or an Approved Electricity Enterprise may, in any contract or other agreement with a third party, specify (i) any arbitration or other dispute resolution procedure agreed to, (ii) that the place of such arbitration may be outside of Afghanistan, and (iii) that the law of a jurisdiction other than Afghanistan may apply to the resolution of such dispute. Any award resulting from such arbitration or other dispute resolution procedure shall be final and binding, unless said contract or agreement provides otherwise, and the award shall be enforceable by the Government upon application by any party to such arbitration or other procedure.
- 24.2 Except as otherwise provided in Article 24.3, if a dispute arises pursuant to a contract or other agreement entered into between an electricity sector investor or an Approved Electricity Enterprise on the one hand and an administration or organization (including any wholly government-owned enterprise) of the State on the other hand with regard to an electricity sector investment, or a claim relating to expropriation under Article 23 of this Law, the parties will endeavor to settle the dispute amicably by negotiation..





## Dispute Resolution ..... Cont.

Failing amicable settlement of the dispute, and unless the parties to the dispute otherwise agree or have otherwise agreed in the contract or other agreement pursuant to which the dispute arises, the dispute shall be settled in the local courts of justice

- If any disagreement or dispute arises between the Parties and they fail to agree on its solution, within 60 days from the date of such dispute rising, it shall be referred to the Management Board of the Corporation. The Management Board shall decide what measures are to be taken for resolution of disputes. If the Parties do not agree on other solution, the decision to be taken by the Management Board shall be enforced on both parties.





## TRANSMISSION PLANNING CODE

"**Distribution Code**" is the set of technical rules issued by the AERA that among other things, sets forth the technical rules establishing the minimum technical design and operational requirements for any substation at or other connection to a Customer, including any connection of such Customer to the transmission or distribution network.

Wherever possible the Distribution Code will refer to ANSA accepted international standards instead of including technical details in the Distribution Code itself.



## GRID OPERATION CODE

"Grid Code" is the set of technical rules issued by the AERA that includes the following:

- a) the technical rules establishing the minimum technical design and operational requirements for operation and connection to the network and Interconnection and operation of other networks, taking into account the required system reliability;
- b) identification of economic criteria for dispatch;
- c) the procedures applicable for network operation in contingency situations.

Wherever possible the Grid Code will refer to ANSA accepted international standards instead of including technical details in the Grid Code itself.



# **GRID CONNECTIVITY CODE**

**What are bus switching schemes adopted?**

**110KV system**

- 1. Single bus bar with Bus sectionalize**
- 2. Double Bus Bar with Single breaker**
- 3. Main and Transfer bus**

**220KV system**

- 1. Double bus bar single breaker**
- 2. Double bus bar and Transfer bus**

**The fault clearance time and breaker opening time:-**

**Maximum of the system is equipped with Digital protective relay which caused the system to be fully automatic and the response time very quick.**

**The breaker response time will be according to the protective devices.**





## METERING CODE

"Metering Code" is the set of technical rules issued by AERA which set forth the standards for metering reliability; safety; comprehensibility; and access to, ownership of, and other matters related to meters installed at the interface between a Distribution System and any Customer, as well as any metering between and among generation, transmission, and distribution facilities.

Wherever possible the Metering Code will refer to ANSA accepted international standards instead of including technical details in the Metering Code itself. are basic principles governing location of import and export energy meters refers to DABS operation Management.

Up to date the TOD Meters are not provided.

The accuracy class of meters and Transformers are based on the ANSA Standards .

main and check meters are provided, Energy accounting is done of the sites for every customer.



# RENEWABLE COMMITMENTS

*Renewable energy policy is the principal driver of the growth in renewable energy use.*

*As of 2011, 119 countries have some form of national renewable energy policy target or renewable support policy. National targets now exist in at least 98 countries. There is also a wide range of policies at local levels in Afghanistan, Development of renewable energy sources in rural areas can contribute to improved agricultural productivity, health, education, communications, small-business enterprise, and quality of life.*

*Development of renewable energy, for which long-term support is needed.*

*Some countries already have aggressive policies in place requiring a certain minimum share of renewable energy in the electricity grid within a fixed time frame. Implementation of these policies needs support.*

## **Solar Energy potential**

*Solar , Solar power potential in Afghanistan , as per USAID satellite pictures and rough study is (222,000MW),*

## **Wind Energy potential**

*Is approximated by the same source of information (67,000MW),*

**Bio-Mass Energy** is another great sources in Afghanistan , but not used Technically .

For more information Please visit [www.mew.gov.af/en/page/2078](http://www.mew.gov.af/en/page/2078)



# SYSTEM PARAMETER LIMITS

The system is designed to withstand the variation with the max tolerance of 10% for the system operating voltage and frequency.

Based on above design the installed equipments feature are capable for the desired system design requirement.

The system is continuously under control and Afghanistan National Load Control Center (NLCC) responsible for the system control and adjusting.

The system status which are consisting measurement of required system parameter , instructions & events are documented and the logged Hard copy and Electronic copy.

For above procedure there are rules and regulations provided by DABS .





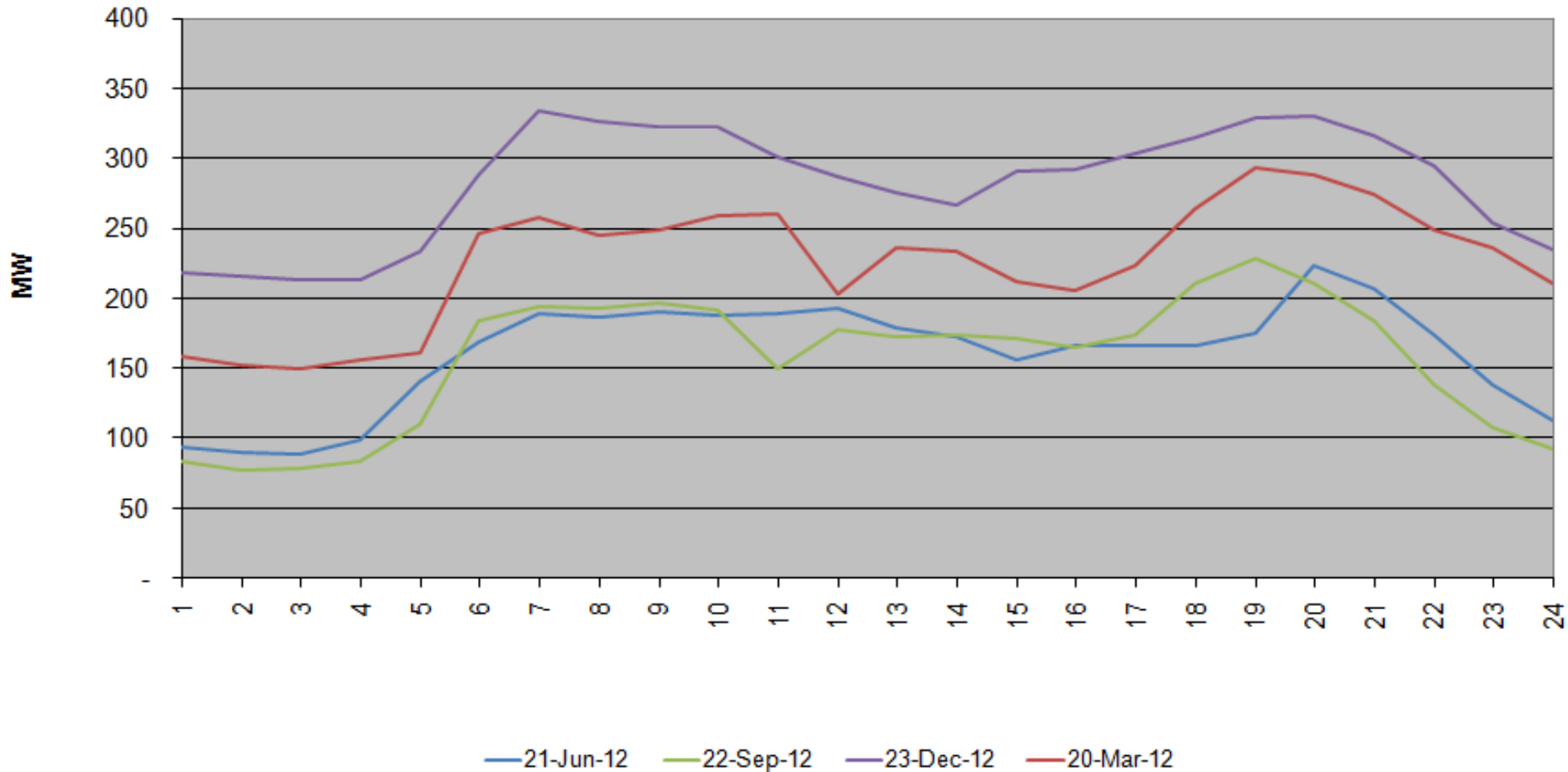
# GENERATION ADDITIONS PLANNED

Under Afghanistan National Grid System Development Plan the Afghanistan Ministry of Energy & Water prepared a general plan to electrifies Afghanistan from domestic sources of Energy during 3 to 12 Years with a total capacity of 2437 MW . .

Under Plan Energy Infrastructure Projects From 3 to 12 Years					
Phase	Project	Province	Project Type	Irrigation Land	Capacity ( MW )
1	Shah Toot DAM	Kabul	Irrigation	2543	1.2
1	Gambari DAB	Kunar	Energy /Irrigation	35000	45
1	Sarobi 2 HPP	Kabul	Energy		180
1	Kajakai HPP	helmand	Energy /Irrigation	100000	150
1	Kama HPP	Nangarhar	Energy /Irrigation	18000	45
1	Gulbahar HPP	Panjsher	Energy /Irrigation	54000	120
1	Kelagai HPP	Baghlan	Energy /Irrigation	45277	60
1	Bakhshabad	Farah	Energy /Irrigation	138500	27
1	Dala DAM	Kandahar	Irrigation	36000	0
1	Kokcha HPP	Takhar	Energy /Irrigation	132,000	45
1	Khan abad 2 HPP	Kunduz	Energy		10.4
<b>Total 1 Phase</b>				<b>561320</b>	<b>683.6</b>
2	Qali Momai HPP	Badakhshan	Energy		445
2	Baghdara HPP	Kapisa	Energy		210
2	Kunar ( SAGI ) HPP	Kunar	Energy	0	300
<b>Total 2 Phase</b>				<b>0</b>	<b>955</b>
3	Kunar ( Shall ) HPP	Kunar	Energy	0	798
<b>Total 3 Phase</b>				<b>0</b>	<b>798</b>
	<b>Total</b>			<b>561320</b>	<b>2437</b>

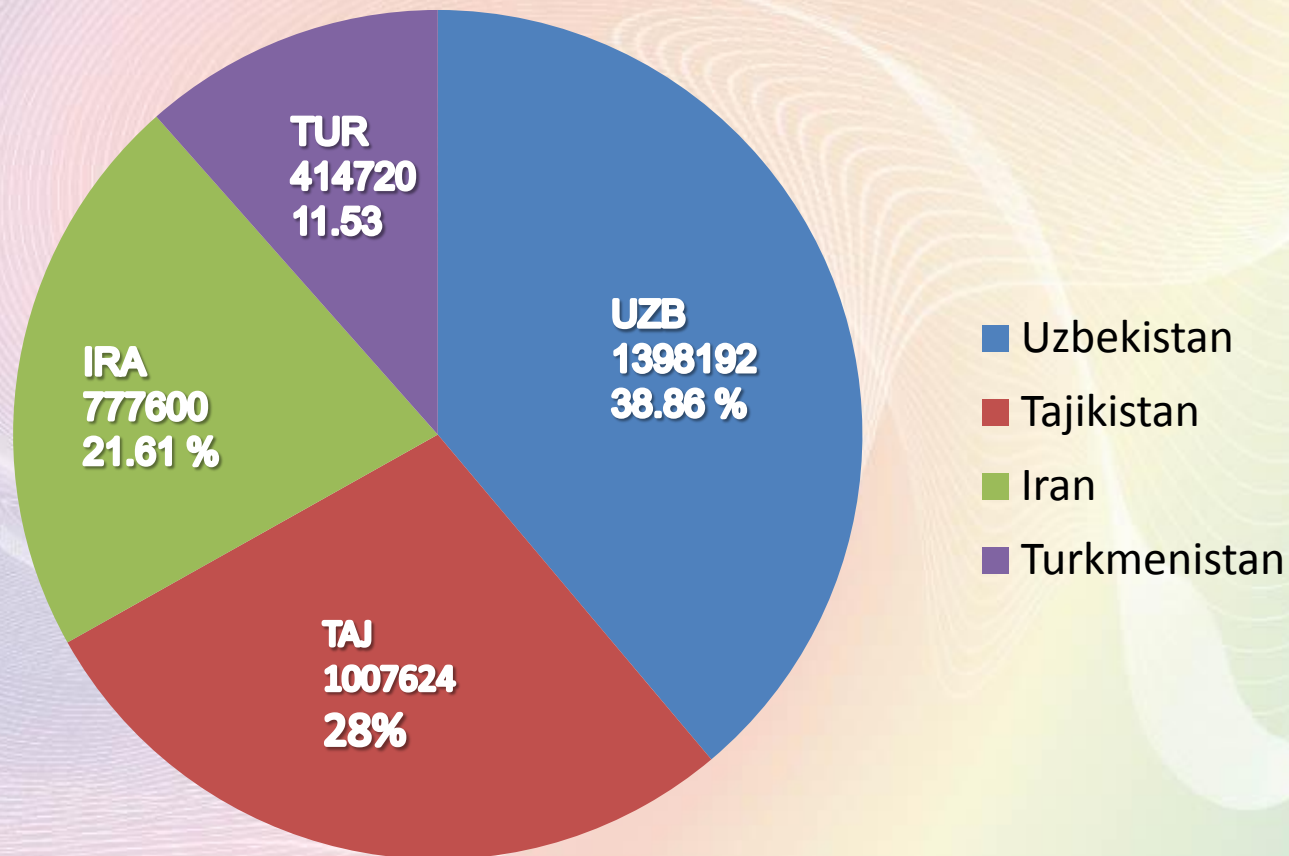
# TYPICAL SEASONAL DAILY LOAD CURVE

## Kabul Seasonal Comparison by Day Load Curv-- 2012

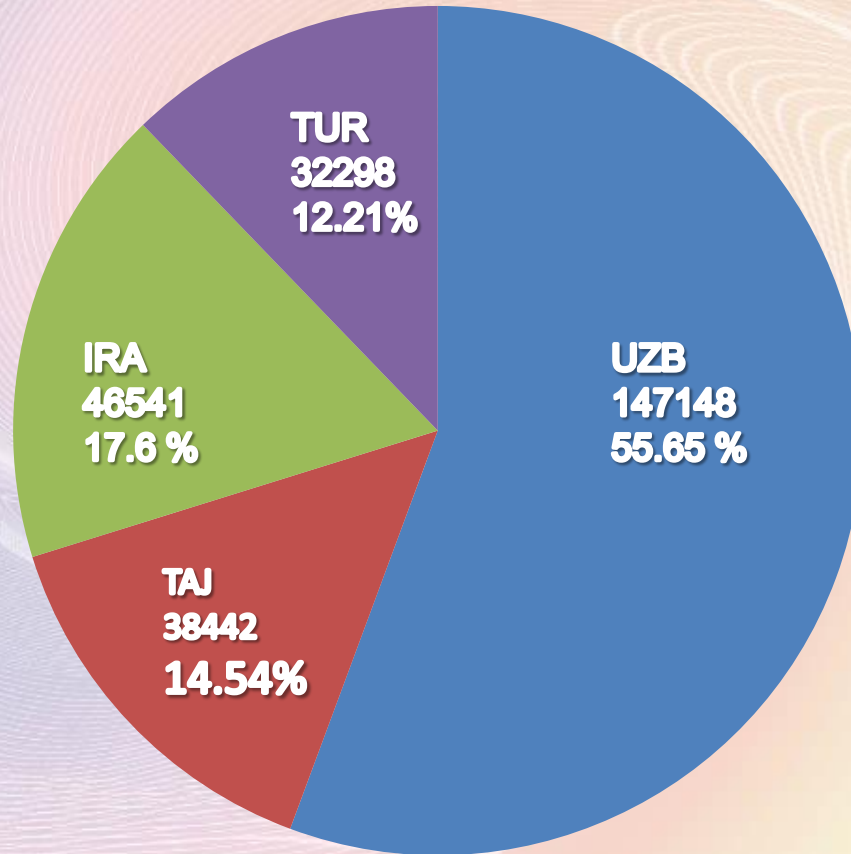




# POWER IMPORT in 2012



# POWER IMPORT in 2013(PLANNED)



- Uzbekistan
- Tajikistan
- Iran
- Turkmenistan





## PRIORITIES FOR LOAD SHEDDING

According to the current status of energy requirement of our system ,the generating sources over loaded for few hrs a day during the winter season only.

To avoid the system malfunction and damage to the system or equipments the load shedding will be applied for max Five hrs a day as per the planed schedule (Dec,20 to Mar,05)



# **PROTECTION COORDINATION REVIEW**

The department of Protection relay is responsible for the reviewing the protection system.

This department is consisting senior professional electrical engineers .

In normal situation this review is done annually.

Beside that it done during implementation of a project ,modification of network and system abnormal operation.

For above progress they have a guide line which provided by the DABS.

All activities are logged hard copy and electronic copy in relevant departments.





# FINANCIALS ACCURACY AND TRANSPARRENCEY OF THE POWER SECTOR

23.1 An investment in or the assets of an Approved Electricity Enterprise may not be expropriated directly or indirectly except in accordance with the provisions of enforced laws of Afghanistan, on a non-discriminatory basis, and only for the purpose of the public interest.

23.2 In case of expropriation, the State shall provide prompt compensation in conformity with international law and internationally accepted principles equivalent to the fair market value of the expropriated investment or assets immediately before the expropriating action was taken.

Such compensation shall include interest at the one-year LIBOR rate for the period from the date of expropriation to the date of complete payment of compensation.

In case of an investment made in foreign currency, such compensation shall be made to the investor in the currency in which the investment was made.

At the time being MoUs with several banks have been signed by DABS for timely delivery of the bills through the DABS accounts.



# **GOVERNMENT SUBSIDIES**

**In Afghanistan the term of Cross Subsidy used.**

**The Cross Subsidy is used to provide reasonable electrical Energy with low costing charge for all class of the consumers specially for the residential and productive industries .**





## REHABILITATION POLICY

Rehabilitation policy is part of the National Energy Policy in Afghanistan.

*The (R&R) policy broadens the treatment of resettlement issues beyond hydropower and irrigation projects to all types of investment operations. It emphasizes the need for:*

*Minimizing involuntary resettlement;*

*Providing people displaced by a project with the means to improve, or at least restore, their former living standards, earning capacity, and production levels;*

*Involving both re-settlers and hosts in resettlement activities;*

*A time-bound resettlement plan; and*

*Valuation and compensation principles for land and other assets affected by the project.*





# LAND ACQUISITION AND RIGHT OF WAY

*It is part of the Afghanistan National Energy Policy (draft) The (R&R) policy broadens the treatment of resettlement issues beyond hydropower and irrigation projects to all types of investment operations. It emphasizes the need for:*

- Minimizing involuntary resettlement;*
- Providing people displaced by a project with the means to improve, or at least restore, their former living standards, earning capacity, and production levels;*
- Involving both re-settlers and hosts in resettlement activities;*
- A time-bound resettlement plan; and*
- Valuation and compensation principles for land and other assets affected by the project.*
- The World Bank's OD 4.01 "Environmental Assessment" of October 3, 1991 indicates the kind of projects which are categorized as "A" projects and for which a full environmental assessment (EA) is required.*



Thank you for your  
attention!



DA AFGHANISTAN BRESHNA SHERKAT

د افغانستان برېښنا شرکت

[www.dabs.af](http://www.dabs.af)