

Energy Management in Pakistan:

Since 1947; Pakistan inherit only 5% of Electricity of its needs, there was acute shortage of Power Generation in Pakistan. With the passage of time, Energy requirement was dare needed. The country faced serious crisis but indigenously Pakistan work out for the energy crisis. The progress of any country depends upon the power recourses provided by nature. The power recourses not only fulfill the electricity requirement of the country but also play an important role in the industrial development of the country.

Usually, Coal, mined oil, natural gas and electricity are included in power recourses. In our country mineral oil and natural gas provided by nature occupy an important place. By means of these resources we fulfill 35% to 40% electricity requirements whereas through electricity approx. 18%, by coal approx. 6% by other means about 100% electricity is obtained. In our country, mineral oil is a necessity for the country so we have to import approx. 64% of mineral oil and other products from other countries of the world whereas other power resources are available in the country. Following are the two main power resources of Pakistan.

Power Resources	Power Production in Pakistan
Mineral Oil	40%
Natural Gas	35%
Hydel Electricity	18%
Coal	6%
Nuclear Energy	0.6%
Solar & Wind Tidal- Geo Thermal - Biodiesel / Biomasses	0.4% 0.0-- 0.0-0.0



In this modern age electricity is considered as an important source of energy. Electricity, in fact, is not a source of power resource provided by nature but is obtained by human efforts using a machine, which is called “generator”. To generate this machine or generate some kind of power resources has to be used and due to this reason, it is called by different names.

HYDRO ELECTRICITY: The electricity for the production of which water resources is used to run the generators of machines is called Hydroelectricity.

THERMAL ELECTRICITY: The electricity which is produced by using other sources e.g. coal, mineral oil or natural gas, instead of water, to generate generators or machines is called thermal electricity.

NUCLEAR ENERGY: The electricity for the production of which atomic fuel such as uranium or Thorium is used is called atomic or nuclear energy.

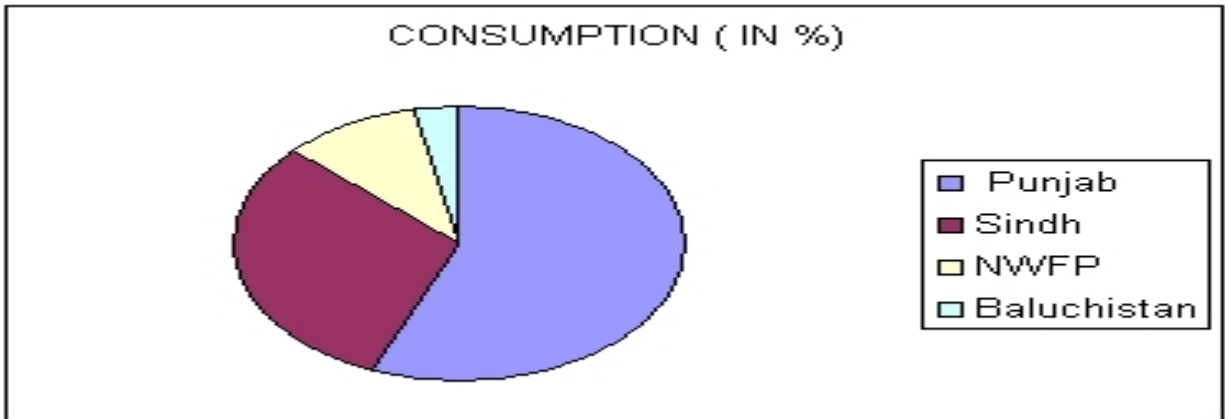
SOLAR ENERGY: In many parts of our country power of the sun is used by photo-waltic system to get electricity and it is expected its production will increase in the near future

BIO GAS: In rural areas the electricity by using wastage of animals. In many other parts of the world, man has been using this source for the production of electricity.

YEAR	PRODUCTION(000 MW)
1947-48	68.8
1971-72	1862
1986-87	6653
1998-99	10716
1999-2000	11764
2004-2005	12750
2010-2012	14900
2017-2018	23750MW Approx 24000

The following table shows the Production of Electricity in Pakistan through the different means.

PROVINCE	CONSUMPTION
Punjab	56%
Sind	31%
NWFP	10%
Baluchistan	3%



INSTALLED GENERATING CAPACITY

The following table shows the installed generating capacity of electricity plants in Pakistan.

S.NO	NAME OF POWER STATION	CAPACITY
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HYDERAL POWER

1	Tarbela (NWFP)	3478
2	Mangla(Azad Kashmir)	1000
3	Warsak (NWFP)	240
4	Small Hydel (Punjab & NWFP)	107
SUB-TOTAL(HYDERAL)		4825

THERMAL POWER

5	Multan Steam (Punjab)	260
6	Faisalabad Steam (Punjab)	132
7	Faisalabad Gas Turbines & combine cycle	244
8	Shahdara Gas Turibines	85
9	Guddu no.1 (Sindh)	1015
10	Guddu no.2 (Sindh)	640
11	Sukkur Steam (Sindh)	50
12	Muzaffargarh Steam (Punjab)	1370
13	Kotri Gas Turbines (Sindh)	174

14	Jamshoro Oil fired units 1-4 (Sindh)	880
15	Quetta (Baluchistan)	83
16	Pasni Diesel sets (Baluchistan)	17
17	Multan Electric Supply corporation (Sindh)	20
18	Lakhra Fluidized Bed (1-3) (Sindh)	150
	SUB-TOTAL THERMAL(PUBLIC)	5120
	TOTAL(WAPDA)	9945
	PRIVATE(IPPS)	
19	KAPCO	1621
20	Hub Power Project	1292
21	Kohinoor Energy Ltd	131
22	AES Lalpir Ltd	362
23	AES Pak Gen Ltd	365
24	Habibullah Energy Ltd	140
25	Rouch (Pak) Power Ltd	412
26	Saba Power Company	114
27	Japan power Generation	120
28	Southern Electric Power	117
	SUB-TOTAL PRIVATE	4674
29	K.E.S.C	1756
30	KANNUP	137
31	Tapal Energy & Gul Ahmed	252
	SUB TOTAL (KESC+OTHERS)	2145
	GRAND TOTAL (WAPDA, KESC & IPPs)	23764

SOURCE: Wapda

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