THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF ENERGY AND MINERALS

JICA TRAINING AND DIALOGUE PROGRAMS
"Energy Policy (A)"

COUNTRY REPORT – TANZANIA

Presented to

"The Institute of Energy Economics, Japan (IEEJ)"

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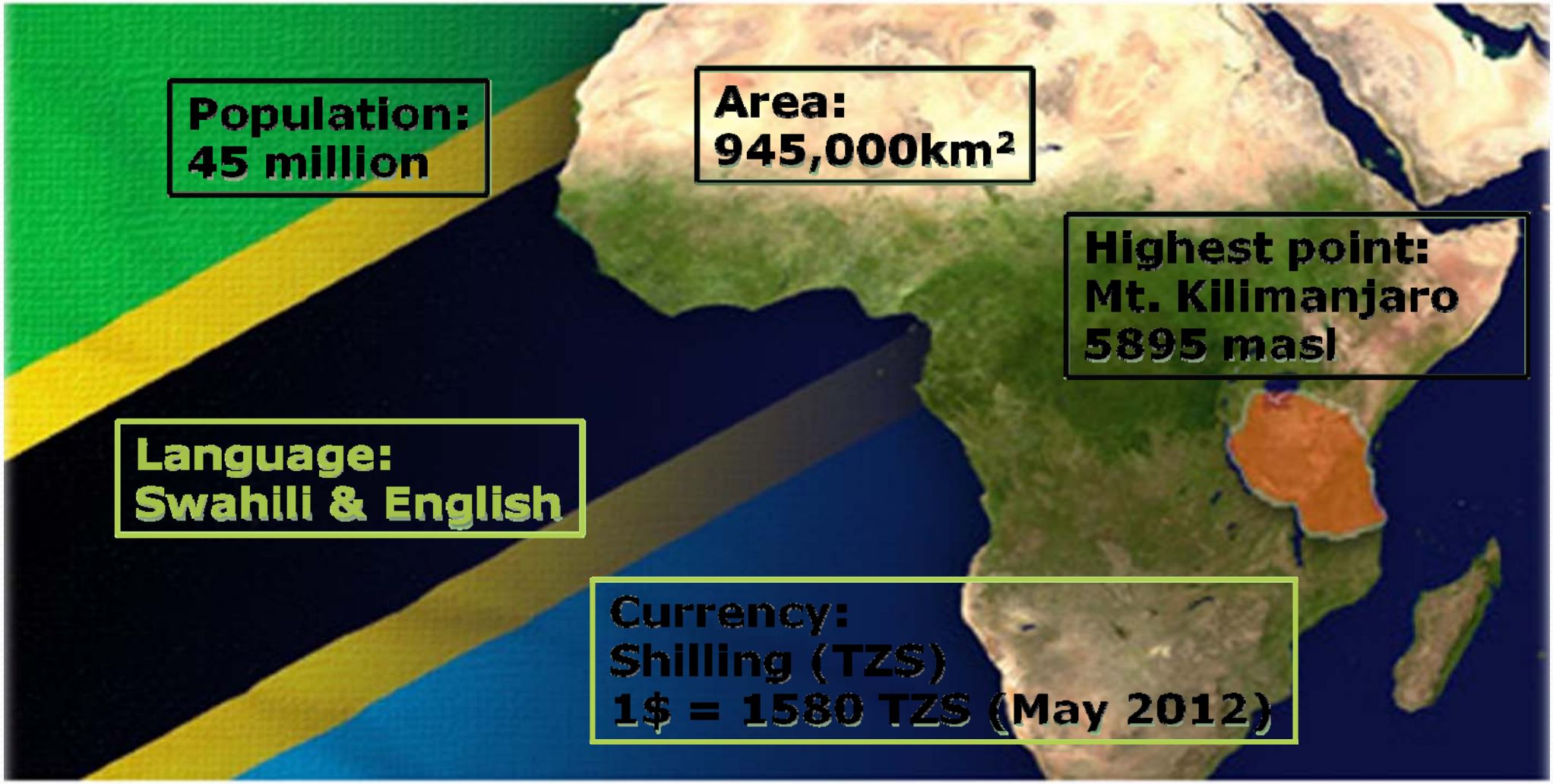
OUTLINES:

1. TANZANIA: FACTS & FIGURES
2. CURRENT ENERGY POLICY & MEASURES
3. DEMAND & SUPPLY STATISTICS
4. ENERGY POLICY FORMULATION : DIFFICULTIES
5. PRIORITY SUBJECTS

TANZANIA: FACTS & FIGURES



CURRENT ENERGY POLICY & MEASURES

The Tanzanian National Energy Policy (NEP):

- Formulated & Revised in 1992/2003
- Takes into accounts the need for improving access
- Recognizes the importance of private sector participation in development of the energy sector.
- The NEP of 2003 proposed a sustainable institutional framework that could cope with the diversity, manage and coordinate various efforts, for successful development of the energy sector.

DEMAND & SUPPLY STATISTICS

Energy Resources & Supply Statistics

Hydro Potential: 4.7 GW Developed only 12%

Coal Reserves: Potential 1.9 Billion tonnes;

Petroleum: No proven reserves.

Natural Gas: 7.5 Trillion Cubic Feet (Proven).

Biomass: Forest area of about 35.5 million hectares Solar:

Average solar installation is > 200 W/m2

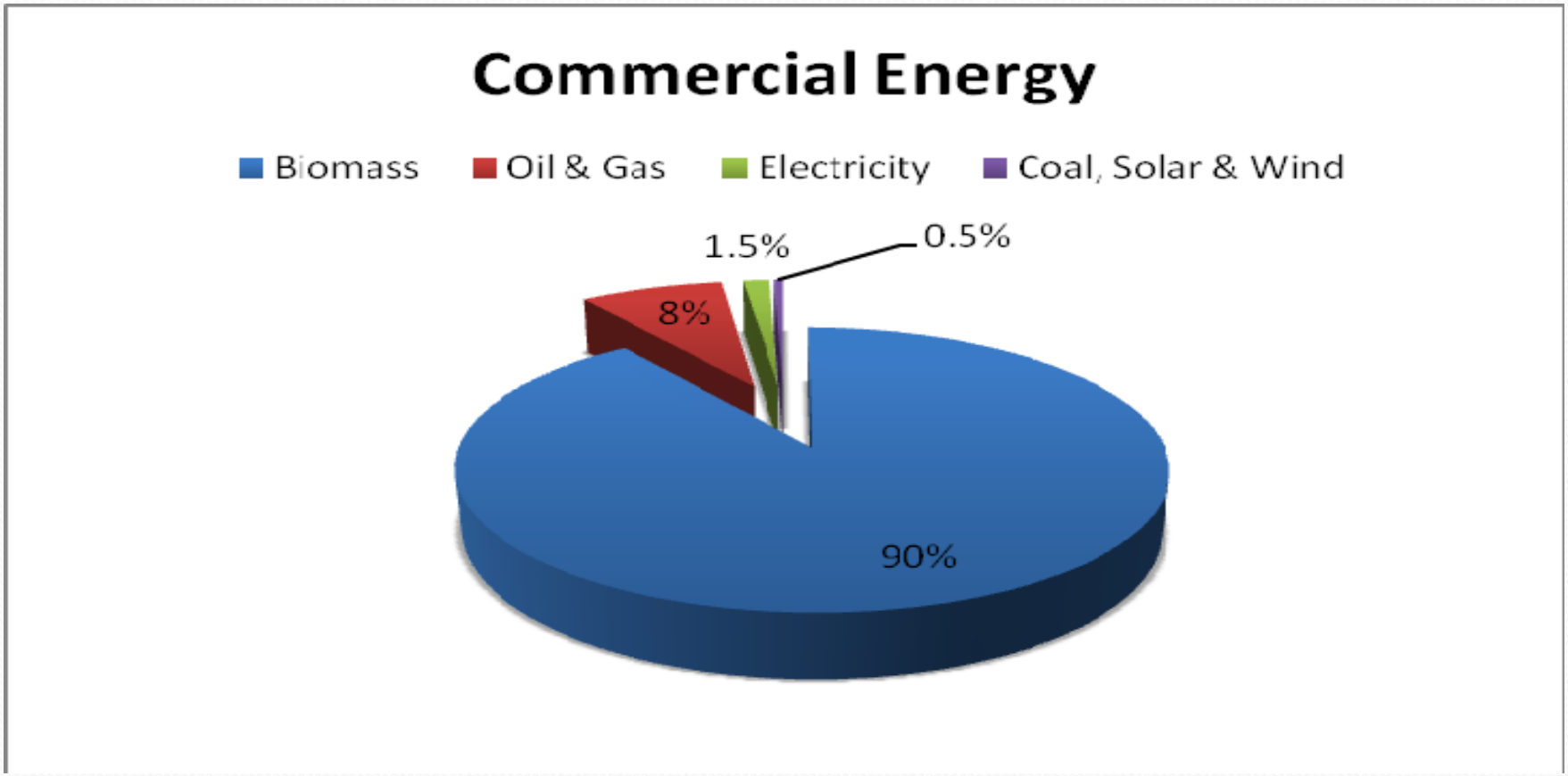
Wind: Speeds greater 8 m/s are documented.

Geothermal: Potential as high as 650 MW, under assessment.

Ongoing Studies on: uranium, bio fuels & ocean based energies

DEMAND & SUPPLY STATISTICS

Primary Energy Source



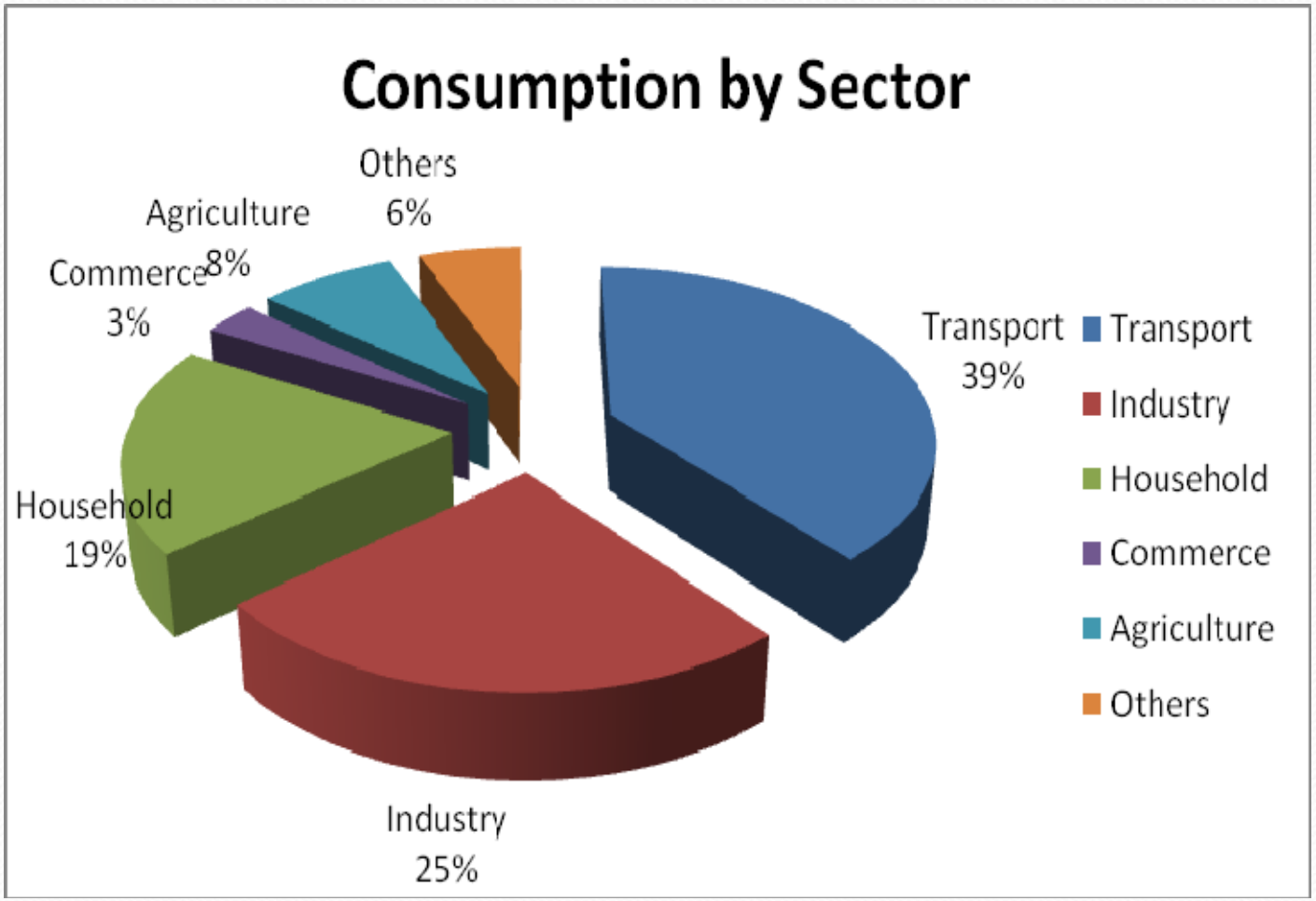
DEMAND & SUPPLY STATISTICS

Power Status & Demand Statistics

- Growth in **Power demand** is 10 -15% per annum
- 21% of **Population** has access to electricity (6% rural areas)
- Total grid **installation capacity** is 1,466MW (2013)
- **Hydro** contributes 565 MW, & **thermal** 900.7MW
- **Independent Power Producers** (IPP's) (Songas and IPTL) contribute 317 MW (21.7%) of the available power in the grid
- **Isolated System** has a total nominal capacity of 75 MW
- Average **connections** per annum is 100,000 customers (plan 250,000 customers/annum)
- **Peak** power demand 833 MW

DEMAND & SUPPLY STATISTICS

Energy Consumption



DEMAND & SUPPLY STATISTICS

Sales, Generation and Peak Forecast - Total Country **Base Case**

		Actual	*Unconstrained*									
Region	**Unit**	**2010**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2020**	**2025**	**2030**	**2035**
Arusha	GWh	305.3	305.3	322.7	343.5	488.2	685.2	853.7	1,608.8	2,472.8	3,179.9	4,091.6
Dar es Salaam	GWh	2,202.3	2,202.3	2,261.5	2,349.0	2,713.0	3,360.3	3,936.6	5,792.4	6,936.6	8,332.3	10,070.5
Dodoma	GWh	92.0	92.0	96.5	102.2	186.9	301.7	373.9	572.6	818.5	1,179.6	1,492.3
Iringa	GWh	94.7	94.7	98.1	101.6	118.8	149.4	201.3	325.5	522.5	795.1	949.8
Kagera	GWh	46.0	46.0	51.1	56.6	83.5	111.1	176.6	479.2	734.2	1,191.8	2,036.7
Kigoma	GWh	12.4	12.4	14.3	15.0	18.6	33.6	55.5	459.8	583.1	749.0	980.8
Kilimanjaro	GWh	137.9	137.9	141.7	146.9	172.0	196.8	223.2	375.8	440.4	505.4	571.0
Lindi	GWh	14.9	14.9	15.8	16.8	28.2	40.5	76.9	432.4	568.5	739.5	953.7
Manyara (*Included in Arusha*)				-	-	-	-	-				
Mara	GWh	58.8	58.8	67.3	77.5	87.7	98.6	109.6	181.8	304.9	521.3	916.5
Mbeya	GWh	144.0	144.0	151.8	160.6	179.8	207.2	232.2	463.3	746.3	1,159.2	1,697.7
Morogoro	GWh	182.2	182.2	188.8	196.5	216.0	241.4	268.3	476.3	792.0	1,203.2	1,577.6
Mtwara	GWh	29.1	29.1	33.3	36.0	73.4	167.4	289.5	731.1	954.9	1,226.8	1,554.2
Mwanza	GWh	217.3	217.3	223.9	231.6	358.0	465.9	543.9	933.7	1,489.8	2,065.2	2,376.1
Rukwa	GWh	17.5	17.5	18.4	19.5	30.7	41.4	61.6	174.6	282.9	450.0	710.9
Ruvuma	GWh	21.3	21.3	20.4	19.8	26.8	33.3	39.1	125.3	186.1	278.9	400.5
Shinyanga	GWh	286.9	286.9	322.2	359.3	391.7	538.3	730.5	1,368.1	2,390.6	3,776.4	5,622.8
Singida	GWh	30.3	30.3	32.3	34.6	48.4	56.6	65.4	112.3	183.4	298.5	485.1
Tabora	GWh	84.9	84.9	98.1	111.6	152.7	163.5	174.4	305.1	572.8	940.5	1,439.8
Tanga	GWh	197.1	197.1	206.8	218.0	276.6	341.3	461.5	903.3	1,263.0	1,732.6	2,155.4
Total Sales	GWh	***4,175.0***	***4,175.1***	***4,364.9***	***4,596.7***	***5,651.1***	***7,233.4***	***8,873.8***	***15,821.4***	***22,243.5***	***30,324.9***	***40,083.0***
Annual Growth Rate	%		*0.0%*	*4.5%*	*5.3%*	*22.9%*	*28.0%*	*22.7%*	*7.4%*	*6.6%*	*6.0%*	*5.5%*
T1	GWh	2,024.1	2,024.1	2,126.2	2,258.4	2,661.1	3,094.3	3,548.7	6,016.5	9,318.0	13,642.0	18,827.5
T2	GWh	592.5	592.5	598.1	606.6	896.3	1,234.0	1,576.0	2,713.1	3,600.5	4,763.2	6,313.8
T3	GWh	1,558.5	1,558.5	1,640.6	1,731.7	2,093.7	2,905.1	3,749.1	7,091.7	9,325.0	11,919.7	14,941.8
LESS *New loads*	*GWh*	-	-	-	-	*(459.0)*	*(1,412.4)*	*(2,400.3)*	*(5,445.1)*	*(6,599.3)*	*(8,000.9)*	*(9,703.3)*
Total Sales	GWh	***4,175.0***	***4,175.1***	***4,364.9***	***4,596.7***	***5,651.1***	***7,233.4***	***8,873.8***	***15,821.4***	***22,243.5***	***30,324.9***	***40,083.0***
Distribution Losses			*1,027.3*	*1,074.0*	*992.7*	*1,111.0*	*1,286.5*	*1,575.8*	*2,588.8*	*3,338.5*	*4,147.7*	*4,960.9*
Distribution Loss rate	%		*19.7%*	*19.7%*	*17.8%*	*16.4%*	*15.1%*	*15.1%*	*14.1%*	*13.1%*	*12.0%*	*11.0%*
Generation required at S/S	GWh	***4,175.0***	***5,202.3***	***5,439.0***	***5,589.4***	***6,762.2***	***8,520.0***	***10,449.6***	***18,410.1***	***25,582.0***	***34,472.6***	***45,044.0***
Recovered Loadshedding	GWh		*98.0*	*98.0*	*98.0*	*98.0*	*98.0*	*98.0*	*98.0*	*98.0*	*98.0*	*98.0*
Transmission Losses	GWh		*290.8*	*305.9*	*331.0*	*391.1*	*480.8*	*574.6*	*882.7*	*1,160.3*	*1,570.7*	*2,056.7*
Transmission Loss rate	%			*5.2%*	*5.4%*	*5.3%*	*5.2%*	*5.1%*	*4.5%*	*4.3%*	*4.3%*	*4.3%*
Net Generation	GWh	***4,175.0***	***5,591.2***	***5,842.9***	***6,018.5***	***7,251.3***	***9,098.8***	***11,122.2***	***19,390.9***	***26,840.3***	***36,141.3***	***47,198.7***
Station Use	*GWh*		*62.19*	*64.99*	*66.94*	*80.65*	*101.20*	*123.71*	*215.67*	*298.53*	*401.98*	*524.96*
Fraction of Station Use	%		*1.1%*	*1.1%*	*1.1%*	*1.1%*	*1.1%*	*1.1%*	*1.1%*	*1.1%*	*1.1%*	*1.1%*
Gross Generation	GWh	***4,175.0***	***5,653.4***	***5,907.9***	***6,085.4***	***7,331.9***	***9,200.0***	***11,245.9***	***19,606.6***	***27,138.8***	***36,543.3***	***47,723.6***
Annual Growth Rate				*4.5%*	*3.0%*	*20.5%*	*25.5%*	*22.2%*	*7.0%*	*6.4%*	*5.7%*	*5.2%*
Sum of Peak Demands (MW)	MW		***1,061.9***	***1,117.0***	***1,138.9***	***1,364.6***	***1,704.1***	***2,088.5***	***3,573.3***	***4,724.3***	***6,084.6***	***7,644.8***
Coincident Peak (MW)	MW	***832.6***	***1,054.2***	***1,108.9***	***1,130.7***	***1,354.7***	***1,691.8***	***2,073.3***	***3,547.3***	***4,690.0***	***6,040.5***	***7,589.4***
Annual Growth Rate	%			*33.2%*	*2.0%*	*19.8%*	*24.9%*	*22.6%*	*5.9%*	*5.4%*	*4.8%*	*4.9%*
Overal Electrification Levels	**%**		***14.0%***	***14.0%***	***15.0%***	***18.0%***	***21.0%***	***24.0%***	***37.0%***	***51.0%***	***66.0%***	***78.0%***

ENERGY POLICY FORMULATION : DIFFICULTIES

- High speed of the growing sector
- Low capacity in Policy development
- Limited flow of private capital investment in the power sector resulting to failure to reach the government strategies as stipulated in the energy policy;
- Scarcity of resources allocated to the sector from the Government Budget to implement the initiated plan in the sector;
- Limited long-term financing especially for small/isolated rural energy projects so as to reach 80% of rural households.

PRIORITY SUBJECTS

- Energy Balance and Energy Mix Methods
- Energy demand and supply forecasting
- Policy Formulation and Review process.
- Strategizing & Monitoring operationalization of the Policy

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