

# International Workshop

On

**Energy Statistics and Energy Balance**

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**Beijing, China**

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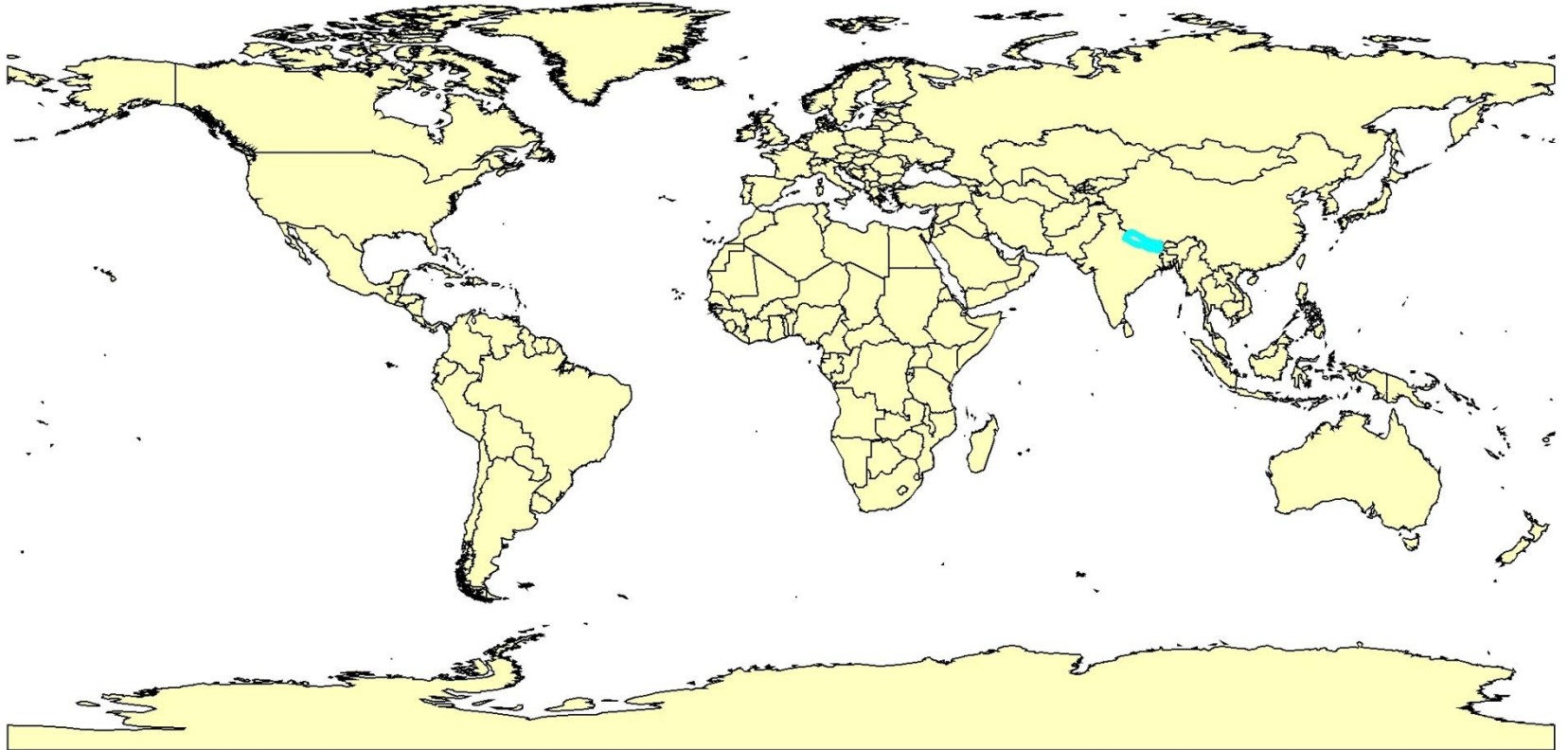
Central Bureau of Statistics, Nepal

Jay Kumar Sharma ,CBS Nepal

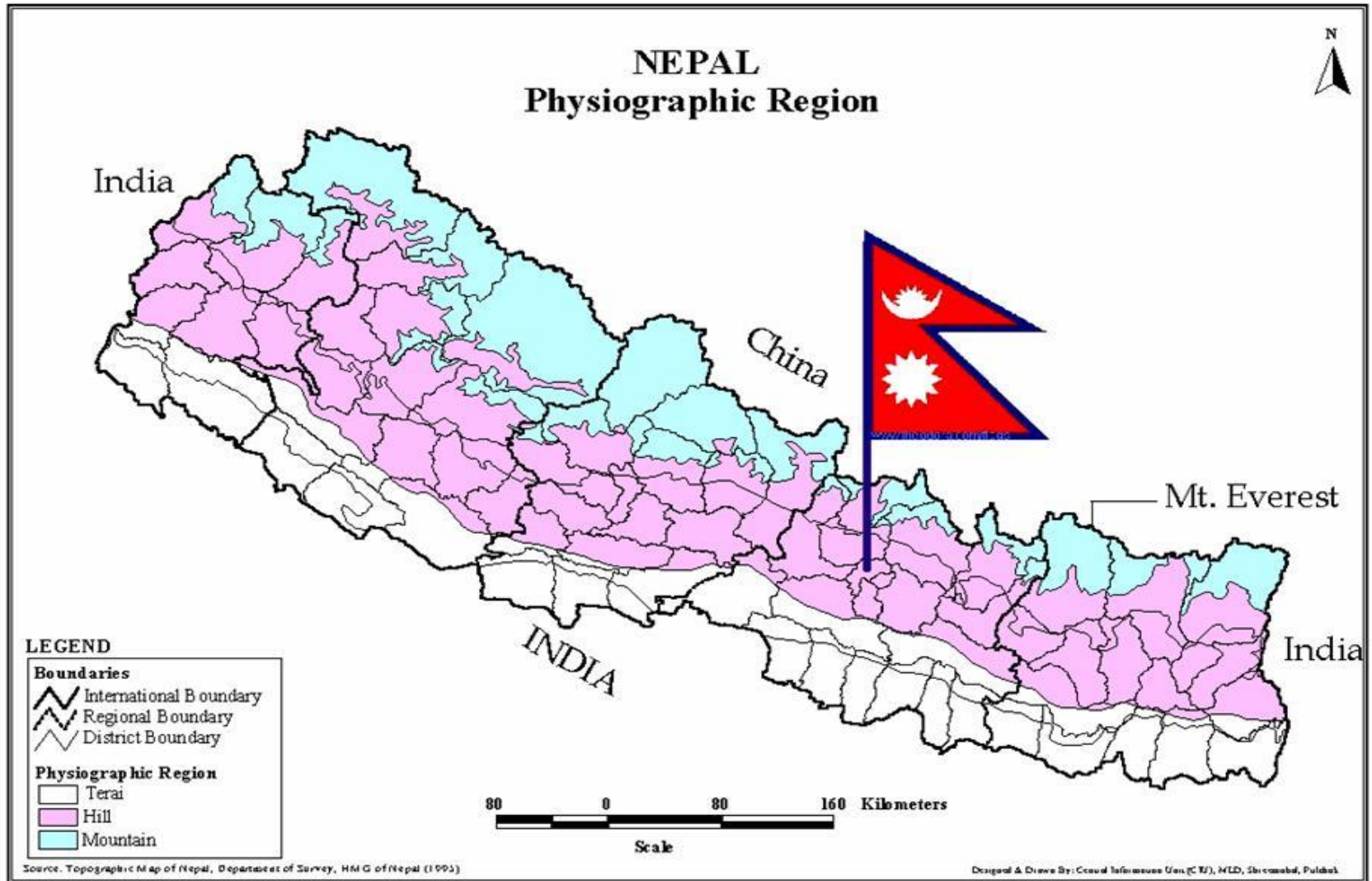
# Contents of Presentation

- Nepal in short
- Statistical System of Nepal
- CBS Responsibility
- Activities of CBS
- Energy Statistics
- Energy situation in Nepal
- Current Status
- Challenges faced
- Urgency and Support

# Nepal in the World



# Nepal in Map



# Nepal is in short

## Key information

Area : 147,181 Sq. Km.

Average Length : 885 Km.

(East to West)

Average Width : 193 Km. (North to South)

Districts : 75

Development Region : 5

Province(Pradesh): 7 ( AS per new constitution 2015)

# Nepal in Demographic

Total pop.	26494504	Crude birth rate	21.8 /1000 pop.
Male	12849041	Crude death rate	7.3 /1000 pop.
Female	13645463	Total fertility	2.5 / women
No. of HHS	5423297	Infant mortality	40.5 /1000 live Birth
Mountain pop.	1781792	Child mortality rate	52.9 /1000 live Birth
Hill pop.	11394007	Life expectancy at birth	66.6 years
Terai pop.	13318705	Male	65.5 years
Pop. Growth	1.35%	Female	67.9 years

# Nepal in macro economic Indicator

- Nominal per capita GDP is estimated (US\$) 752
- Nominal per capita GNI is estimated (US\$) 766
- Nominal per capita GNDI is estimated (US\$) 1035
- Growth rate of GDP is estimated 0.77
- ❖ Agriculture 1.33
- ❖ Non agriculture 0.63
- Workers' remittances as percentage of GDP 32.09
- Final consumption expenditure as percentage of GDP 94.74
- Growth domestic saving as percentage of GDP 5.26

# Estimated Annual growth rate of GDP by Economic activities (2015/2016)

<b>Industrial Classification</b>	<b>Growth rate</b>
Agriculture and forestry	1.14
Fishing	11.76
Mining and quarrying	-6.54
Manufacturing	-9.86
Electricity, gas and water	-1.66
Construction	-3.98
Wholesale and retail trade	-1.13
Hotel and restaurants	-4.85
Transport, storage and communications	2.55
Financial intermediation	3.3
Real estate, renting and business activities	3.72
Public administration and defence	5.78
Education	6.69
Health and social work	8.85
Other community, social and personal activities	5.6



# National Statistical System (NSS) of Nepal

A NSS is defined by a legal framework, infrastructure and institutional arrangement for data collection, management dissemination and utilization of official statistics in a country

## Major Components of the NSS Nepal

- Data Producers
- Data Users
- Data Suppliers
- Research and training Institutions

## Data Generation System in Nepal

- Censuses and Sample Surveys
- Administrative Records and Derived Statistics
- Others sources

# Statistical System of Nepal

- Central Bureau of Statistics (CBS) was established in 1958 by virtue of statistical Act
- CBS has main responsibility to collection, consolidation, publication and analysis the statistics
- National Statistical Council (NSC) as the coordinating and policy making body in the area of statistics
- The present statistical system is a *de facto* decentralized set up with the CBS as the major statistical agency

# Challenges of the National Statistical System

- Statistics Act is very old and insufficient for present scenario

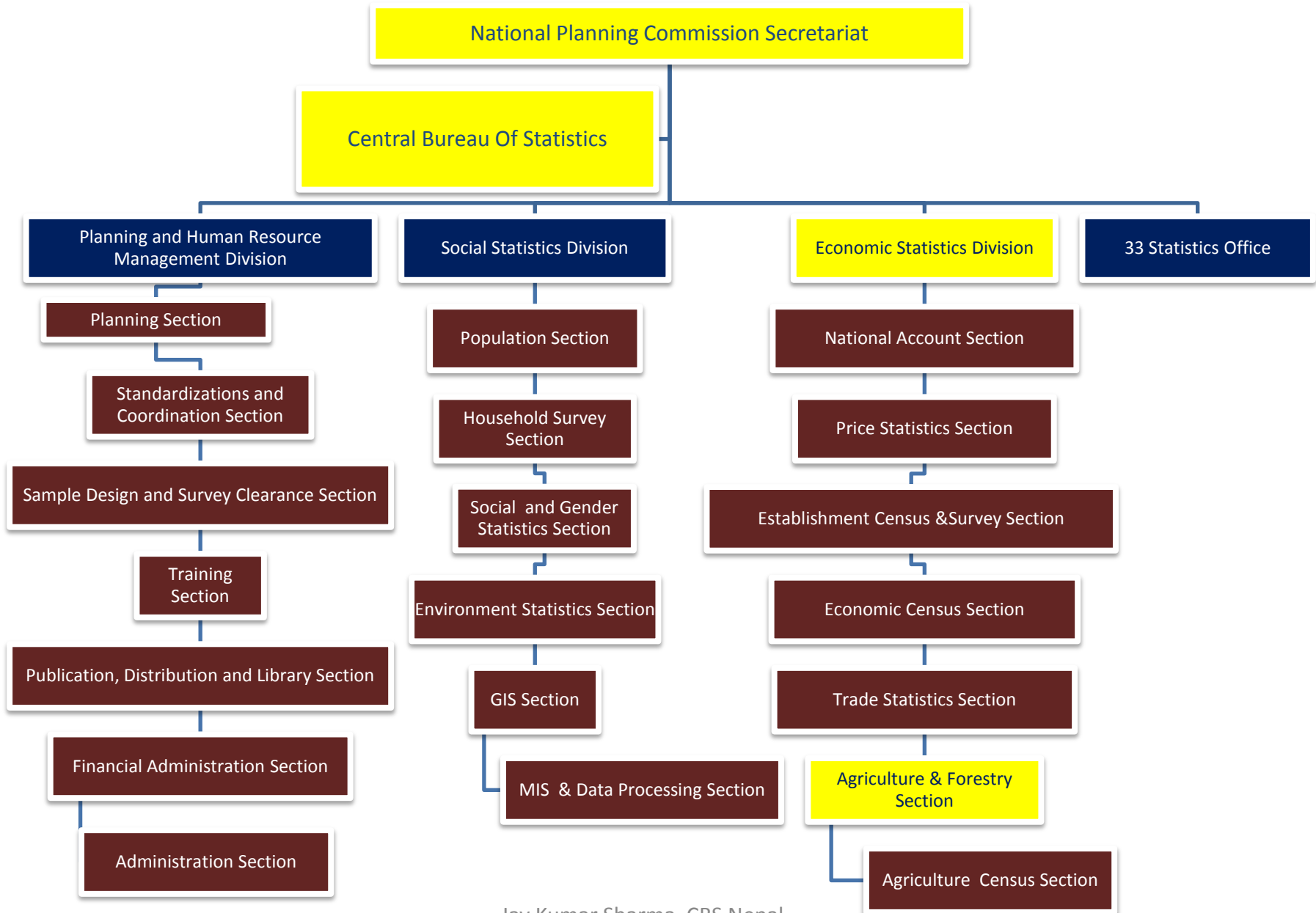
According to the Act, CBS having full authority regarding any statistical activity in the country

- The present statistical system is not supportive enough to deal with the present day requirement and generate reliable and adequate statistics

# Major efforts made to improve NSS

- Finalization of National strategy for the Development of Statistics(NSDS)
- New Statistics Act has submitted to Cabinet but still it is not forwarded in Parliament
- CBS restructuring is on the process . One of the part of this restructuring Organization and management survey has in process most probably it will be finished in this fiscal year

# Organogram of CBS



# Responsibility of CBS

- Provides data for formulation of plans and make policies to the Government of Nepal
- It encourage to use International Standard Methods and Definition in the Surveys/ Censuses held in country
- Develop National Standard Methods/ Definition / Classification/ Codes
- Explore and Provide the different sectors of statistics for fulfilling requirements of the Country and International Agencies
- Establish secured data base & documentation
- Organize National and International Training, Seminar and Workshop Relating to the Statistics

# Major Activities of CBS

## ➤ Census

- Population
- Agriculture and
- Manufacturing and establishment

## ➤ Survey

- Nepal labor force survey
- Nepal living standard measurement survey
- Benchmark survey
- Trade statistics
- Annual estimate of national account
- Forest statistics
- Environment statistics and country need survey

# Major Activities of CBS cont..

- The role of CBS is always decisive for the effective functioning of the national statistical system as a whole
- It promotes collaborative research efforts among members of academic community, data producers and users
- It has a prominent role in developing statistical system and maintaining statistical standard in the country



# The major energy statistics producing agencies

- Central Bureau Of Statistics
- Alternative Energy promotion centre
- Department of forest
- Water and Energy Commission Secretariat
- Ministry of Energy
- Nepal Electricity Authority
- Private Sector
- Mines and geology department
- Nepal oil corporation
- Municipality
- Nepal Oil corporation

# Energy Statistics

- The development of Energy Statistics is still at infancy stage in Nepal
- *Some sector's energy statistics* are compiling and publishing its publication "Environment Statistics of Nepal" regularly
- At present CBS is depends mostly of the energy statistics in secondary sources
- Besides, CBS is collecting some energy related statistics by adding some questions in its regular surveys and censuses questionnaires
- Regularly we are compiling the available energy related data from CBS and other stakeholders to fill up the UNSD questionnaire on Energy Statistics

# Hydro Energy Situation in Nepal

## A Snapshot

- Heavy dependence on biomass resources specially forests and tree resources
- Heavy use of energy resources in residential sector
- Burden in national economy from imported fossil fuel
- Nominal and limited contribution of other renewable energy
- Huge potential of hydroelectricity, but very low harness
  - ❖ Estimated Potential 83000 MW (techno-economically feasible-50%, Installed capacity 829 MW)
  - ❖ Total transmission line 2848 Km
  - ❖ Total client 28,72,015

# Hydro Energy Situation in Nepal

## A Snapshot

- ❖ Distribution Line 123828 KM (Source : wecs 2014/15)
- ❖ Available Energy 4967GWH
- ❖ Pick demand 1291 MW
- ❖ Demand and Supply Gap 585
- Total Energy Consumption in Nepal is 376.3 million GJ (2011/12)

# Energy Resources base in Nepal

Source : Environment statistics of Nepal 2013(WECS)

## Traditional

- Fuel wood,
- Animal residues,
- Agricultural residues

80%

## Commercial

- Hydro electricity,
- coal,
- petroleum products

18%

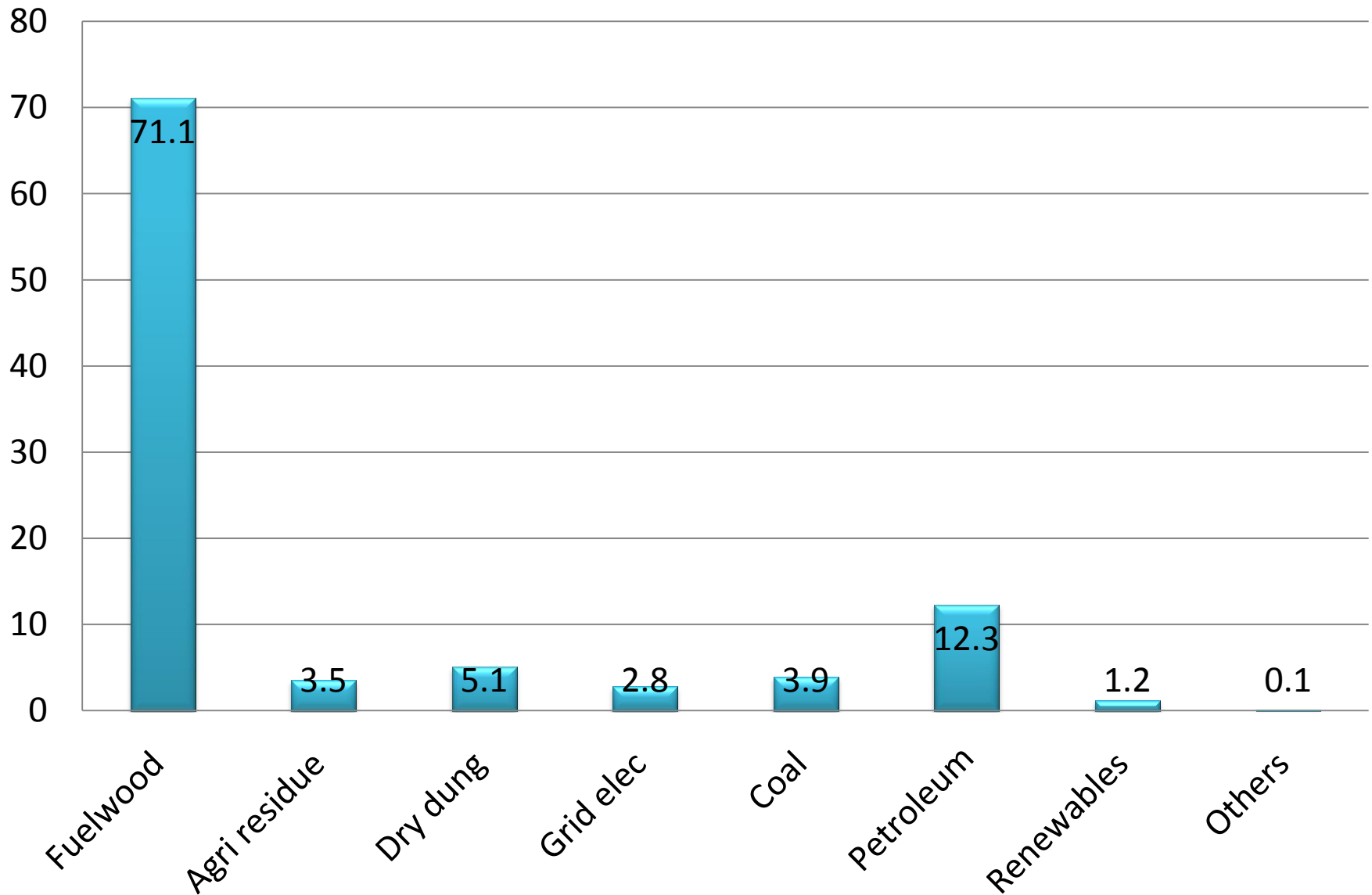
## Renewable

- Micro hydro,
- solar energy,
- biogas,

2%

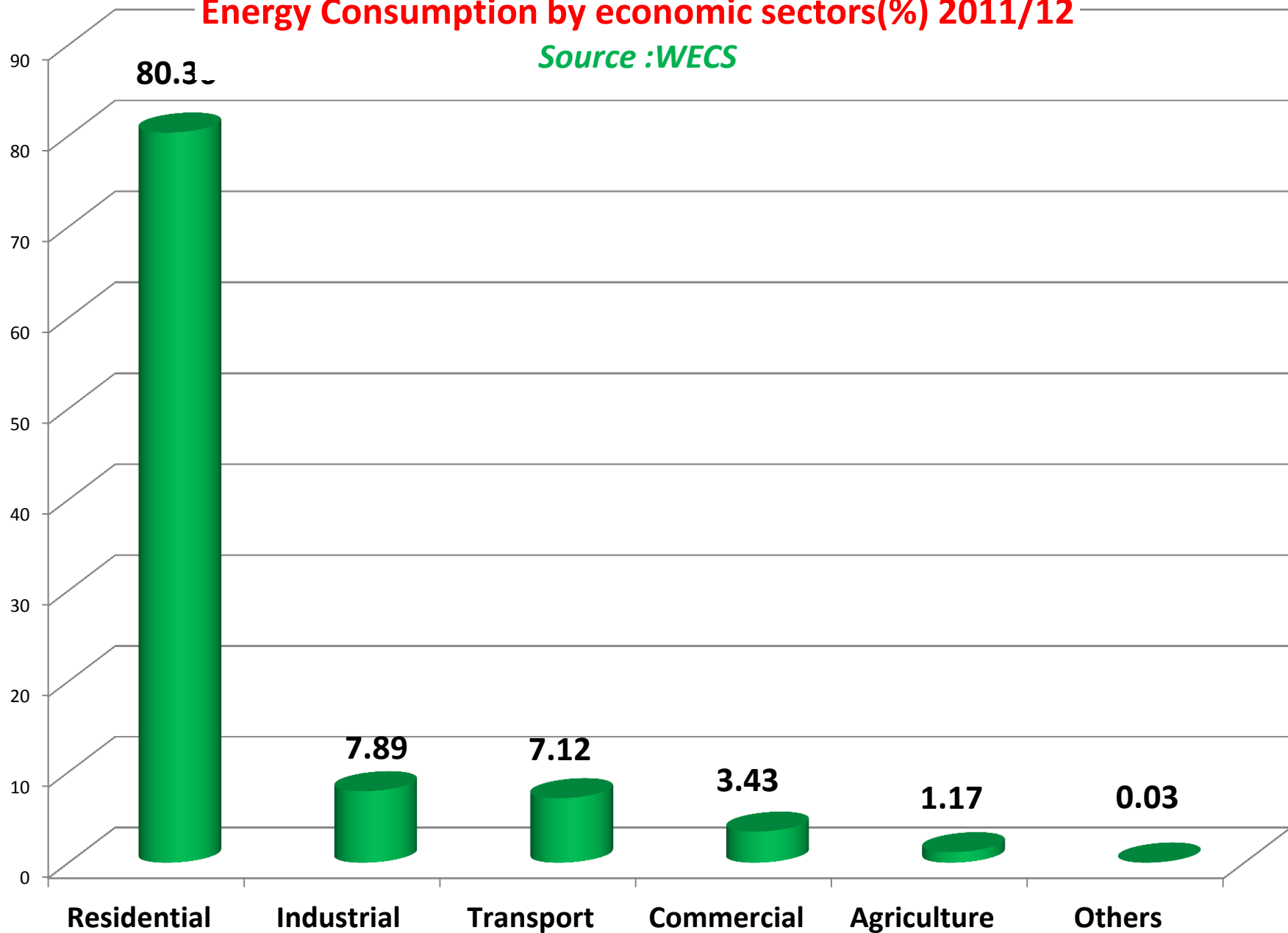
# Energy Consumption by Fuel Type (%)

SOURCE : WECS 2011/12



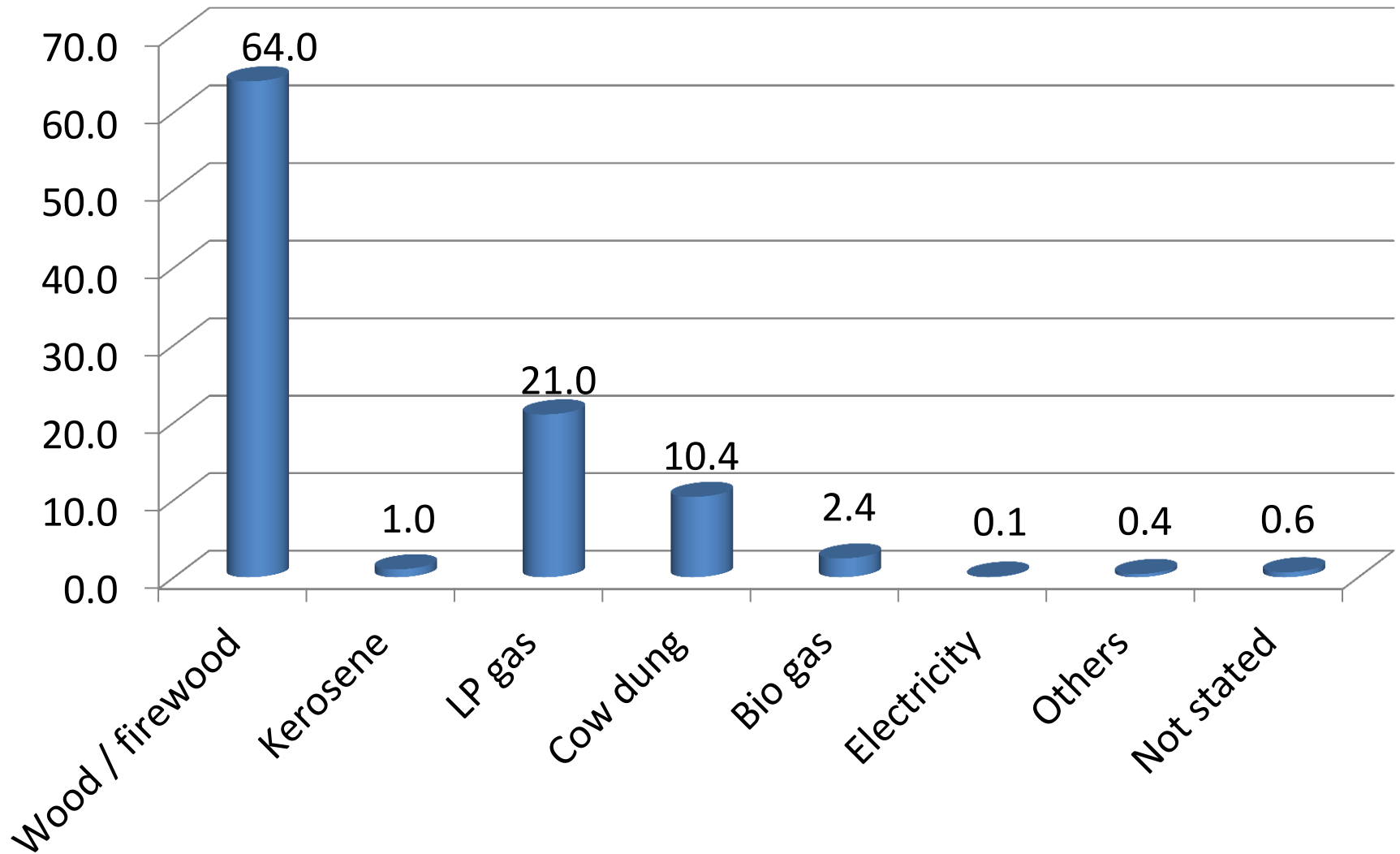
# Energy Consumption by economic sectors(%) 2011/12

Source :WECS



# Usual type of fuel used for cooking by household (%)

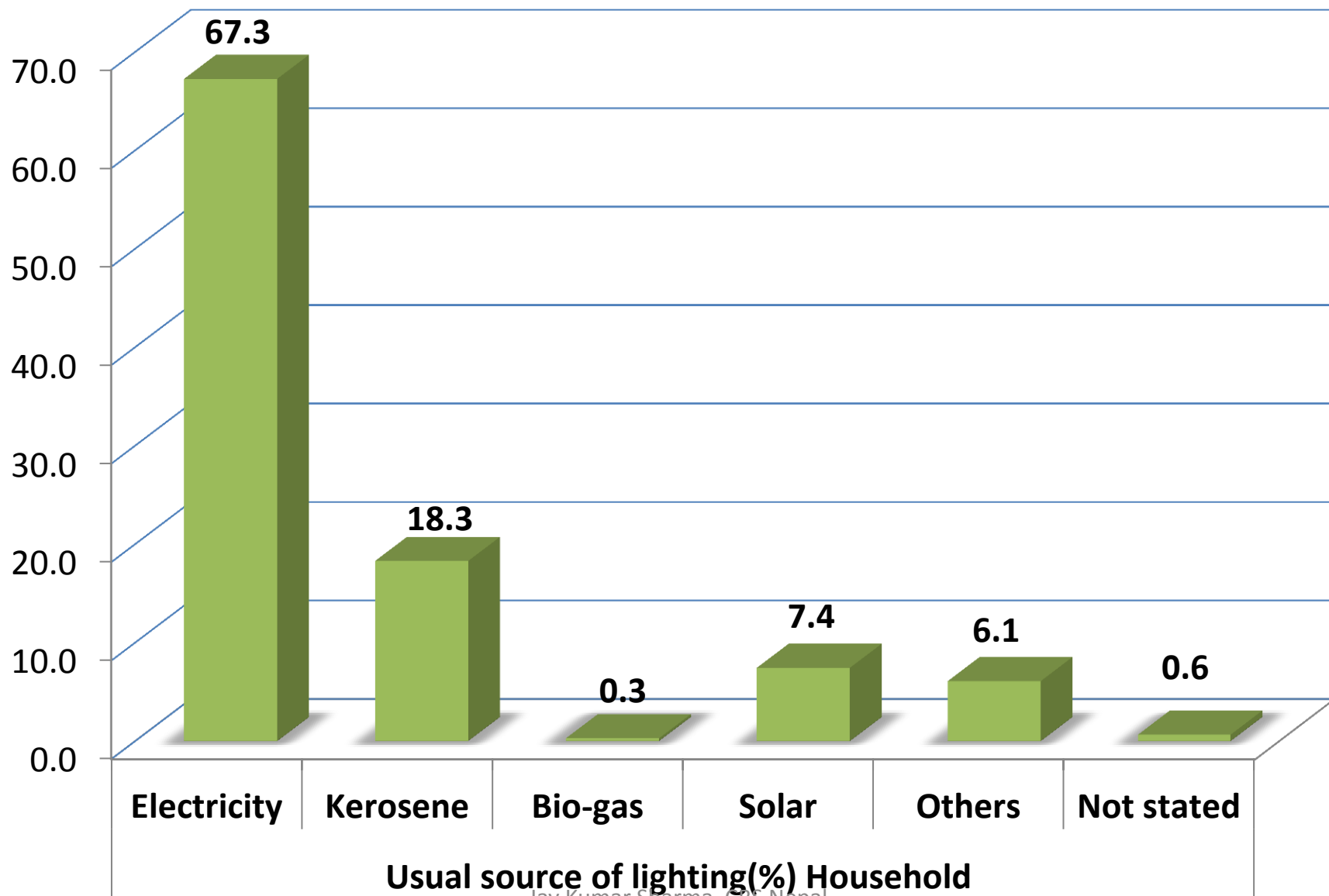
Source :- Population & Housing Census 2011





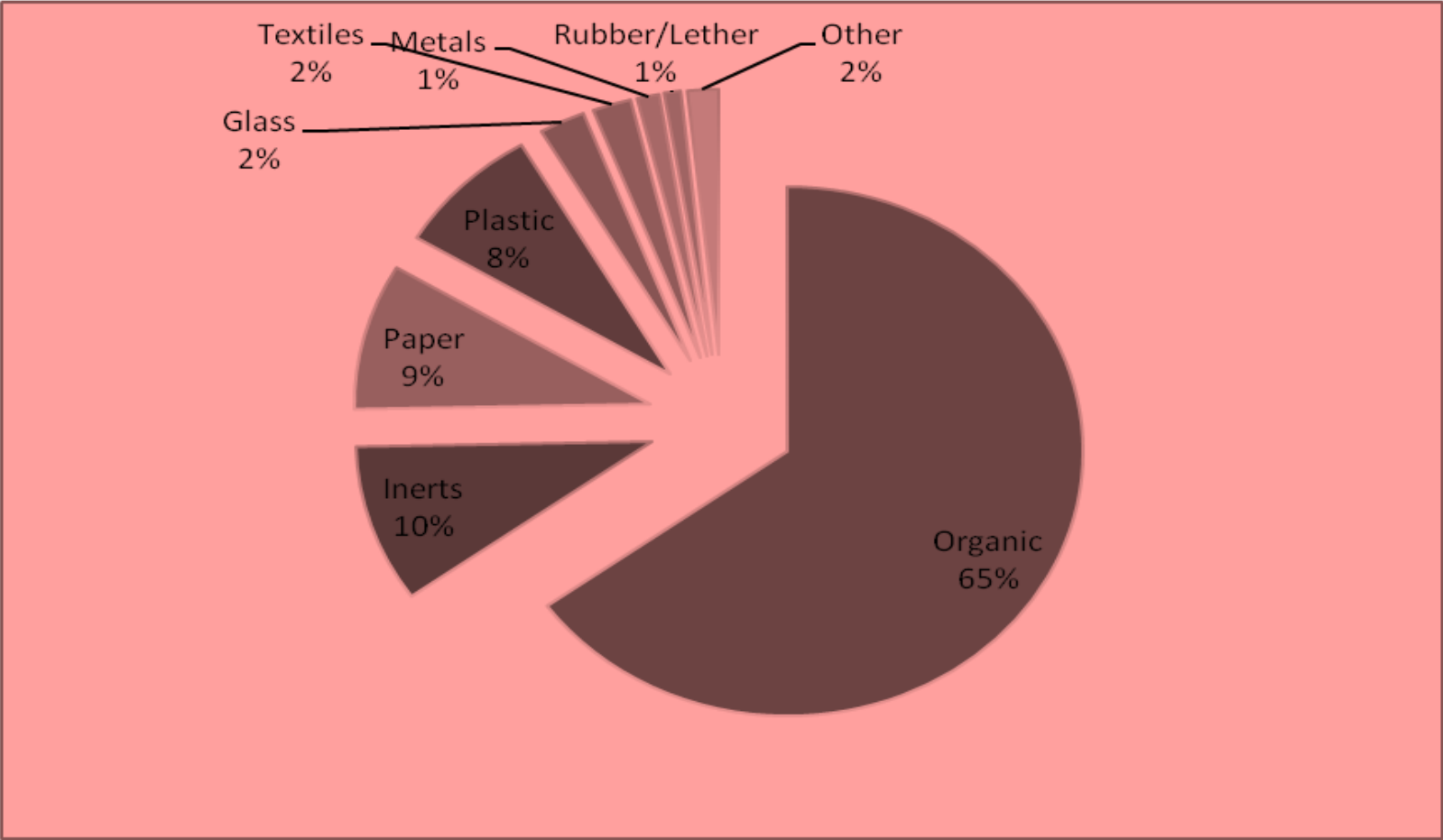
# Usual source of lighting by households (%)

Source :- Population & Housing Census 2011



# Composition of household waste in Nepalese municipalities

Source:SWMRMC



# Status Other Renewable Energy

Renewable Energy Techonology	Total Installed		Unit	Districts Covered
	No	Capacity		
Hydro Power				
Mini hydro	40	14.95	MW	31
Micro hydro	999	18.65	MW	59
Pico hydro	1480	3.18	MW	53
Improved water mill	7959			46
Bisgas				
Household plant	258642			72
Institutional plant	111			25
Community plant	61			20
Solar				
HHs Solar	284097	7.44	MW	74
Institutional solar(computer,FM Radio and vaccin refreragator)	299			42
Solar Pumping	81			22
Solar cooker	1920			30
Small solar home system	11687	0.05	MW	49
Biomass				
Improvedcooking stove	619816			52
Wind	21			12

Source : AEPD Till July 2011

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## Current status in Hydro electricity

Activities	Unit	Year				
		2011/2012	2012/2013	2013/2014	2014/2015	2015/2016*
Electricity Product	MW	705.57	746	746	829.19	847.68
Transmission Line	KM	1987.36	1987.36	1987.36	2848.86	3216.86
Clints	NO	2052359	2599152	2713804	2872015	2922041
Distrbution Line	KM	95815.98	114160.4	116066.64	123827.78	123976
Pick hour demand	MW	1026	1094	1200.98	1291.1	1385
Demand and supply GAP	MW	320.43	348	454.98	585	780

**\* First eight month Data ( 2015 August to March 2016)**

# Water Flour Mill



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# Solar Installation





# Some forest related statistics

SOURCE : Economic survey 2014/2015

➤ No of community forest	18741
➤ Community forest area	17,31,482 Ha
➤ No of household involved in community forest	22,78,769
➤ No of leased forest for poor	7419
➤ Area of the leased forest	42,835 Ha
➤ No of Leased forest for industrial purpose	22
➤ Area of leased forest for industrial purpose	640 Ha
➤ Protected forest	8
➤ Area of protected forest	133685 Ha
➤ No of religious forest	36
➤ Area of religious forest	2056 Ha
➤ No of private forest	2458
➤ Area of private forest	2360 Ha

# Current Status of Energy Statistics at CBS

- Realized the need of Energy Statistics
- There is no separate section for Energy Statistics in CBS building
- Some Secondary Energy statistics are compiled through publication “Environment Statistics of Nepal”
- Different Energy statistics are generated data for their own purpose
- Lack of trained human power to adopt the UNSD guidelines for Energy Statistics



# Challenges for developed Energy statistics and RETs

- Lack of energy information and trained human power
- Insufficient institutional development and Interest
- Overlapping mandates and functions
- Inadequate inter agency coordination
- Lack of timely disseminating mechanism and data sharing policy
- Political instability
- Lack of awareness

# Urgency and Support

## To produce Energy Statistics effectively

The following point should have

- Make the human power trained to address the current demand of RETs and energy data
- Institutional Capability Development
- UNSD must be did technical support continue in future still what it is giving is not sufficient
- Separate Energy Statistics Section must be established in CBS
- To Generate forest related energy statistics, agriculture and forest statistics section at CBS should need technical assistant

CBS main building

Thanking You