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Philippines Country Presentation

Energy Policy Course

Tokyo, Japan

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Department of Energy

Presentation Outline

- ❑ General Information on Philippines
- ❑ Current Energy Policy and Measures
 - Fossil Fuels
 - Clean Energy
 - Fuelling Sustainable Transport Program
 - Energy Efficiency and Conservation
- ❑ Energy Demand and Supply
- ❑ Energy Demand and Supply Outlook
- ❑ Challenges in Policy Formulation
- ❑ Subjects to be Studied



General Information on the Philippines

General Information

Philippines

- ❑ Located in Southeast Asia
- ❑ Total land area of 300,000 km²
- ❑ Composed of 7,107 islands and divided into three (3) main islands – *Luzon, Visayas and Mindanao*
- ❑ Has 17 administrative regions, 81 provinces, 118 cities, 1,510 municipalities and 41,995 barangays
- ❑ Population density is 270 persons/km²
- ❑ National language is Tagalog
- ❑ Economy grew 7.6 percent in 2010
- ❑ 2010 Real GDP is US\$34,170 million (at constant 1985 prices)



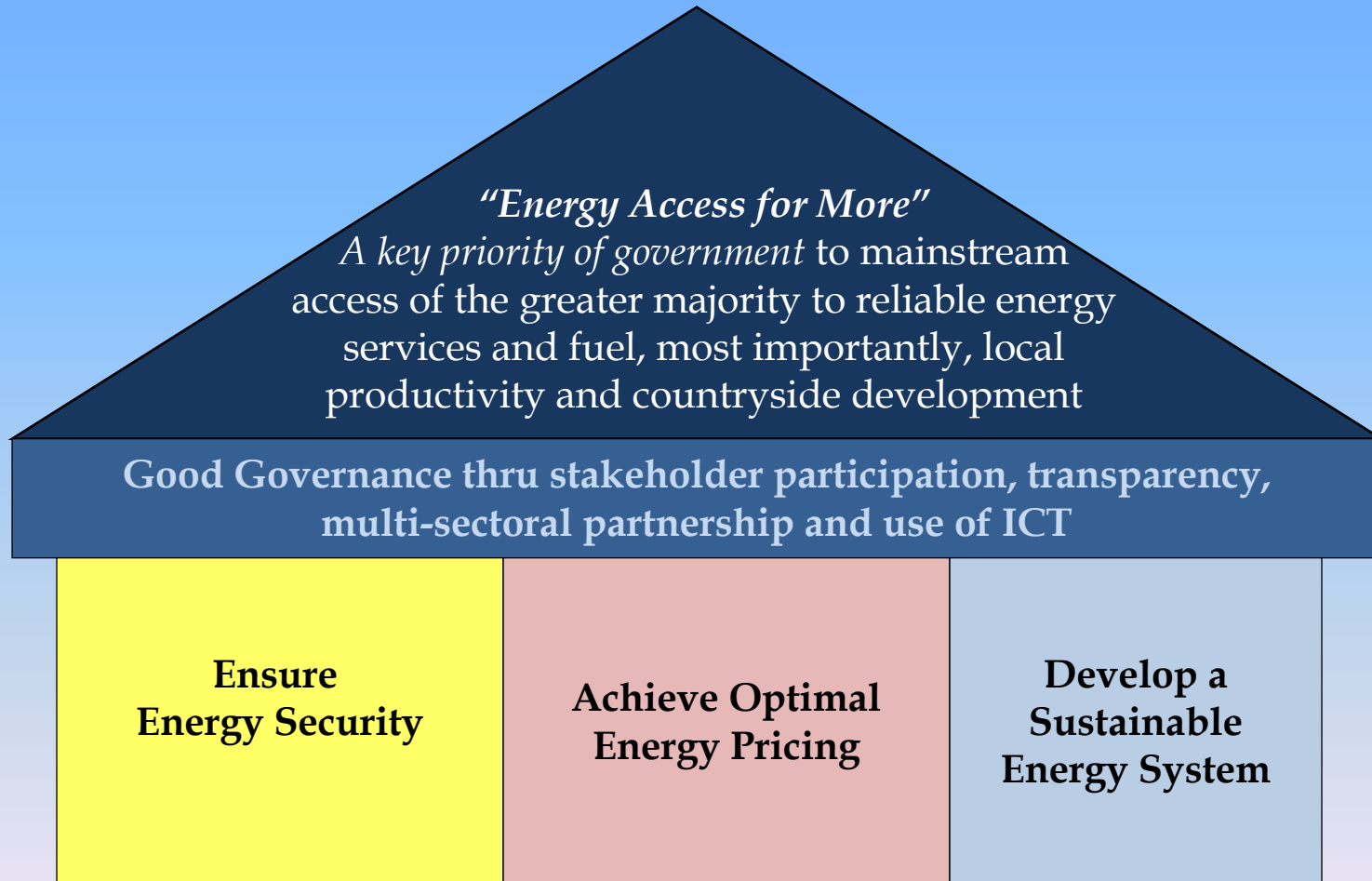


Current Energy Policy and Measures

Current Energy Policy and Measures

- ❑ The Department of Energy (DOE) crafted the Energy Reform Agenda (ERA)
- ❑ Key thrusts of the ERA are:
 - Expanding the use of renewable energy
 - Accelerating petroleum and coal exploration through the Philippine Energy Contracting Rounds (PECR)
 - Making energy efficiency a way of life for Filipinos
 - Strict monitoring of oil and electricity price and supply
 - Promoting the use of clean alternative fuels and technologies
 - Improving transport sector efficiency
 - Vigilant monitoring and supervision of energy sector reforms

Energy Reform Agenda (ERA)



Fossil Fuels

❑ Oil and Gas

- 16 sedimentary basins
- Potential of 4,777 million barrels of fuel oil equivalent (MMBFOE) or 689.8 million tons of energy (MTOE) of oil and gas reserves
- 28 Service Contracts (SCs) are continuously monitored which is a result of the Philippine Energy Contracting Round (PECR)

❑ Coal

- 13 coal basins
- Total resource potential is 2.4 billion metric tons (BMT)
- To date, there are 60 coal operating contracts (COCs) – 29 (exploration) and (31 development and production)

Clean Energy

❑ Renewable Energy

- In December 2008, RA 9513 or the “*Renewable Energy Act of 2008*” was signed
- Launched the National Renewable Energy Program (NREP) in 14 June 2011. The NREP targets 15,000 MW total installed capacity by 2030

RE Resource	Capacity (in MW) as of 1 st Sem 2011
Hydropower	3,535.0
Geothermal	1,902.0
Wind	33.0
Biomass	54.0
Solar	1.0
TOTAL	5,525.0

Clean Energy

Type of Technology	Estimated Capacity			
	Committed	Indicative	Potential	Total
Hydropower	27.80*	407.00	4,535.94	4,970.74
Geothermal	90.00	200.00	1,165.00	1,455.00
Wind		145.00	2,205.00	2,350.00
Biomass	23.00**	190.30	107.60	320.90
Solar			284.05	284.05
Ocean			70.50	70.50
TOTAL	140.80	942.30	8,368.09	9,451.19

* Includes off-grid hydro committed projects

** includes own-use (6-MW)



Clean Energy

□ Natural Gas

- In January 2011, DOE granted a Permit-to-Construct for the Pagbilao Liquefied Natural Gas (LNG) Terminal and Power Project
- Sectors that are main consumers of gas - *power, industrial and transportation*
- JICA has updated the Master Plan Study for the Development of the Natural Gas Industry in the Philippines
- As a complement to the JICA study, the World Bank is conducting a study to supply natural gas in Mindanao

Fuelling Sustainable Transport Program

❑ Biofuels

- The country has put in place *RA 9367* or the “*Biofuels Act of 2006*”
- Mandated 1.0 percent biodiesel blend in 2007 and this was increased to 2.0 percent in 2009. Bioethanol blend at 10.0 percent (August 2011) from 5.0 percent in 2009

❑ Compressed Natural Gas (CNG)

- There are 61 CNG buses in the country of which 41 are running and plying the routes of Southern Luzon and Manila.
- By 2030, government targets to increase the number of CNG buses to 15,000 units



Fuelling Sustainable Transport Program

❑ Auto-LPG

- 18,731 converted taxis as of 1st half 2011
- The Development Bank of the Philippines (DBP) has included the Auto-LPG initiative in its *Clean Alternative Transport Fuel Financing Program*

❑ Electric Vehicle (EV)

- To date, 630 EVs are being demonstrated nationwide
- Government targets to have 180,000 e-tricycles nationwide by 2030

Energy Efficiency and Conservation

- ❑ **National Energy Efficiency and Conservation Program (NEECP)**
 - Resulted to energy savings of 27.48 MMBFOE in 2011
 - Sub-programs under the NEECP include the following:
 - ❖ *Recognition Awards through the Don Emilio Abello Energy Efficiency Awards (DEAEEA)*
 - ❖ *Government Energy Management Program (GEMP)*
 - ❖ *Energy Efficiency and Labeling Program*
 - ❖ *Energy Audit Services*
 - ❖ *Philippine Energy Efficiency Project (PEEP)*

- ❑ **The *Bright Now! Do Right, Be Bright Campaign* was launched in December 2011 to educate and empower Filipinos to be smart energy users.**



Energy Efficiency and Conservation

- ❑ JICA is currently conducting the *Development Study on Energy Efficiency and Conservation for the Philippines*
- ❑ Government targets 10.0 percent savings on total annual energy demand of all economic sectors from EE & C



Energy-Economy Indicators

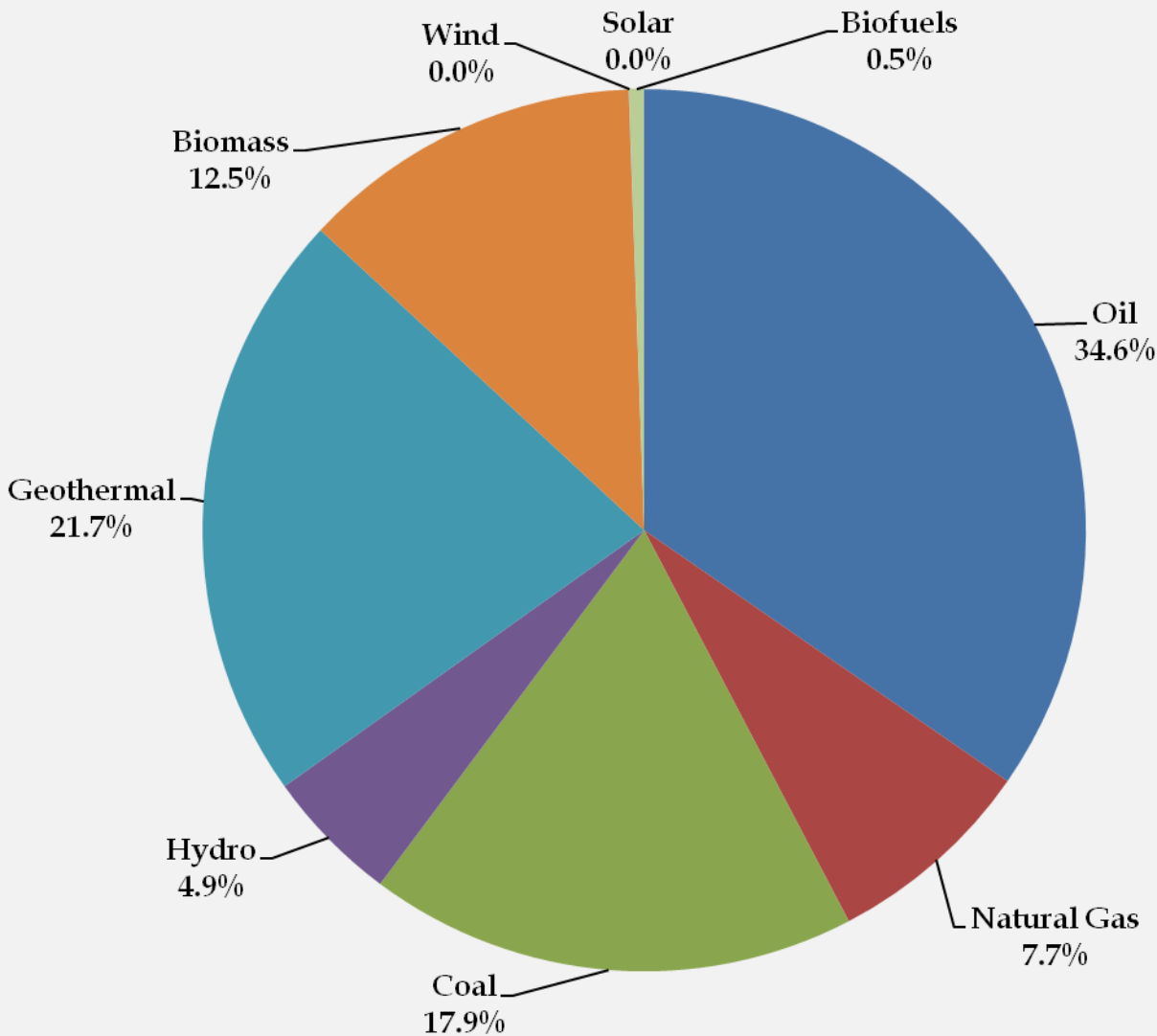
	2009	2010
Economic Parameters	Actual	
GDP (in billion PhP)	5,297.2	5,701.5
Growth Rate (in percent)	1.1	7.6
Population (in million)	91.1	92.3
Forex (PhP/US\$)	47.6	45.1
Crude Cost (\$ per barrel)	61.7	78.1
Energy	Actual	
Primary Energy Supply (in KTOE)	38,748.2	39,741.9
Growth Rate (in percent)	-2.9	3.3
Final Energy Consumption (in kTOE)	22,816.4	23,756.0
Growth Rate (in percent)	1.6	4.1
Oil Supply (in MB)	97,605.1	106,224.1
Growth Rate (in percent)	-1.6	8.8
Electricity Generation (in GWh)	61,934.4	67,742.8
Growth Rate (in percent)	1.8	9.4
Emission	Actual	
CO ₂ Emission (MTCO ₂ e)	69.1	74.1



Energy Supply and Demand

Energy Demand and Supply

2010 Total Primary Energy Supply



Total Energy - 39.27 MTOE

Shares

Self-sufficiency - 58.52%

Green Energy - 47.0%

RE - 39.2%

Biomass Breakdown

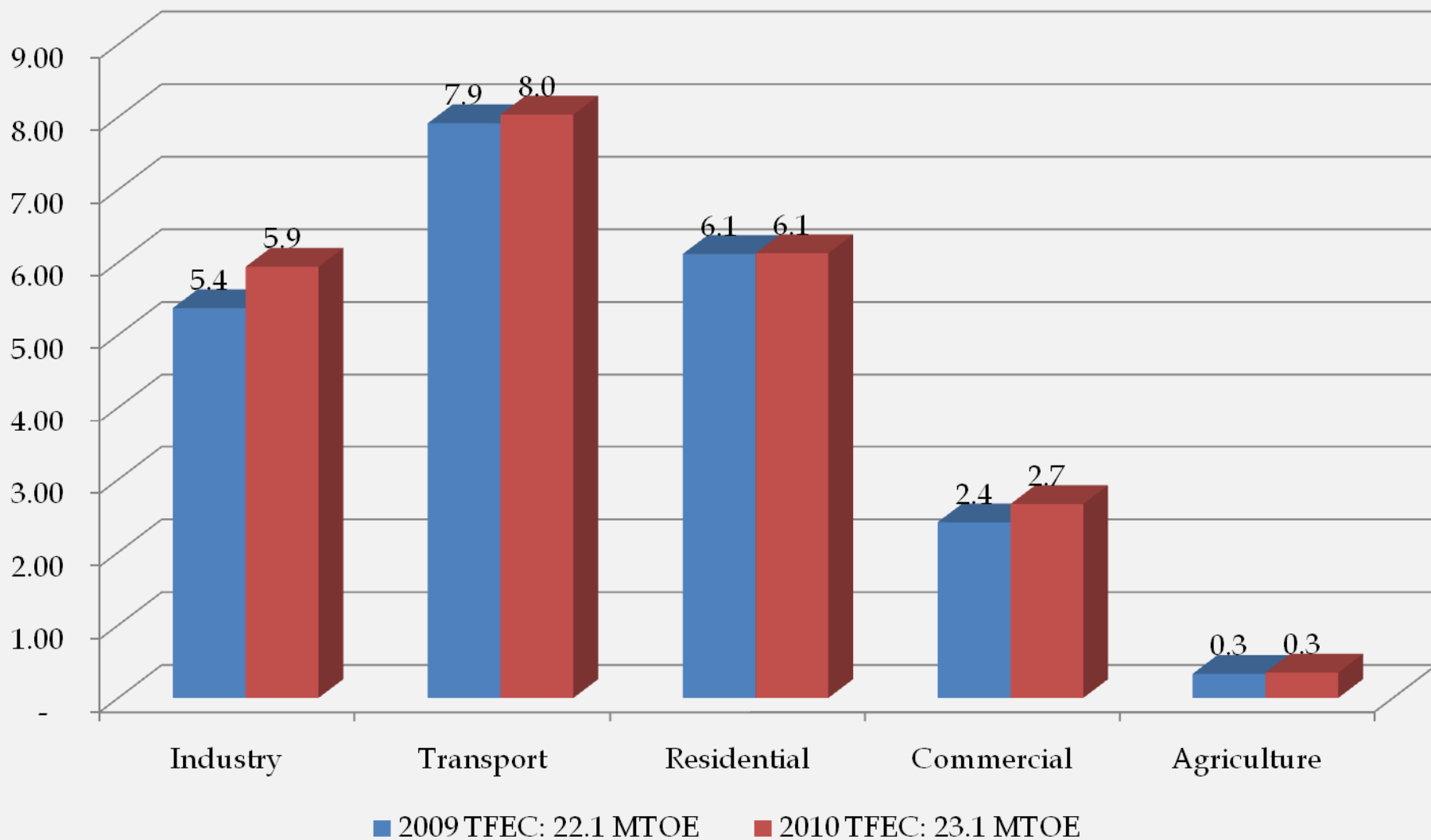
Industry - 20.9%

Residential - 72.7%

Commercial - 6.4%

Energy Demand and Supply

Final Energy Consumption by Sector (in MTOE)



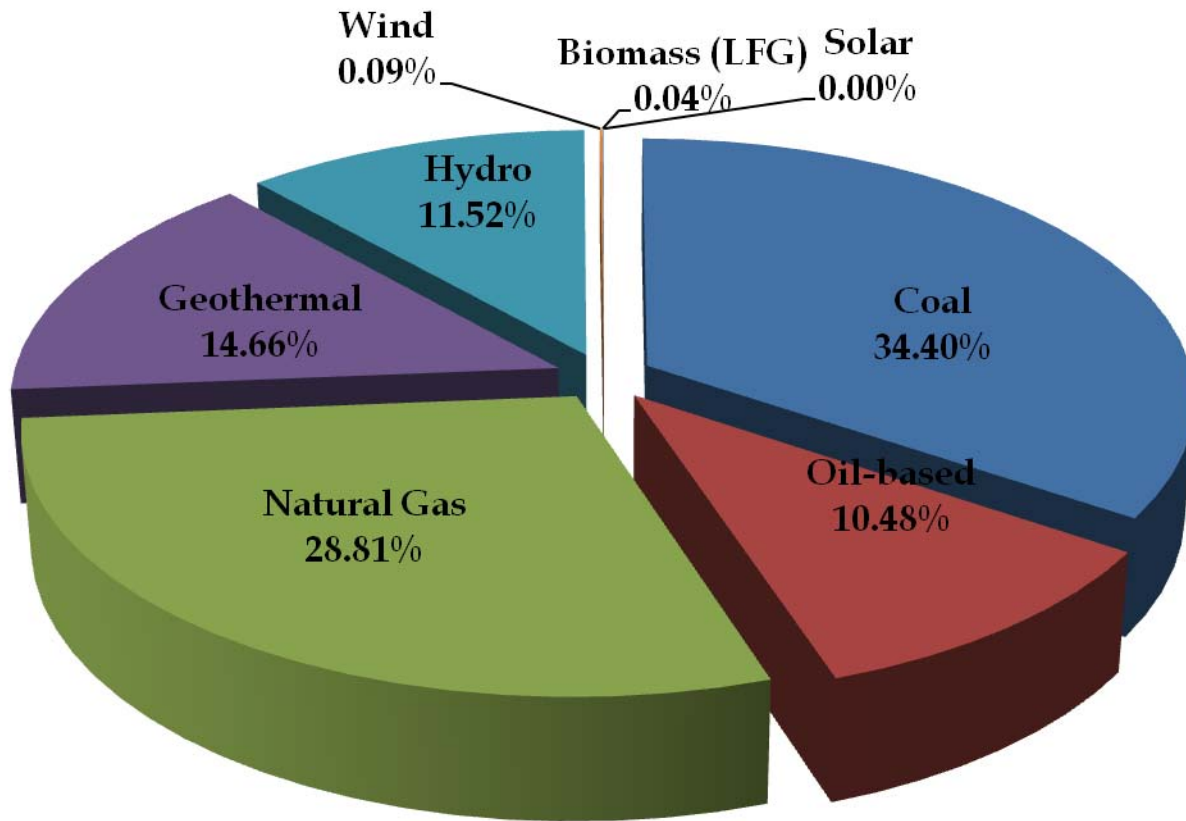
Energy Demand and Supply

2010 Installed and Dependable Capacity

Plant Type	Philippines			
	Capacity		Percent Share	
	Installed	Dependable	Installed	Dependable
Coal	4,867	4,245	29.75	30.53
Oil-based	3,193	2,488	19.52	17.90
Natural Gas	2,861	2,756	17.49	18.83
Geothermal	1,966	1,350	12.02	9.71
Hydro	3,400	3,021	20.78	21.73
Wind	33	20	0.20	0.14
Solar	1	1	0.01	0.01
Biomass	39	20	0.24	0.15
TOTAL	16,359	13,902		

Energy Demand and Supply

2010 Power Generation Mix



Total Generation = 67,742 GWh

Shares:

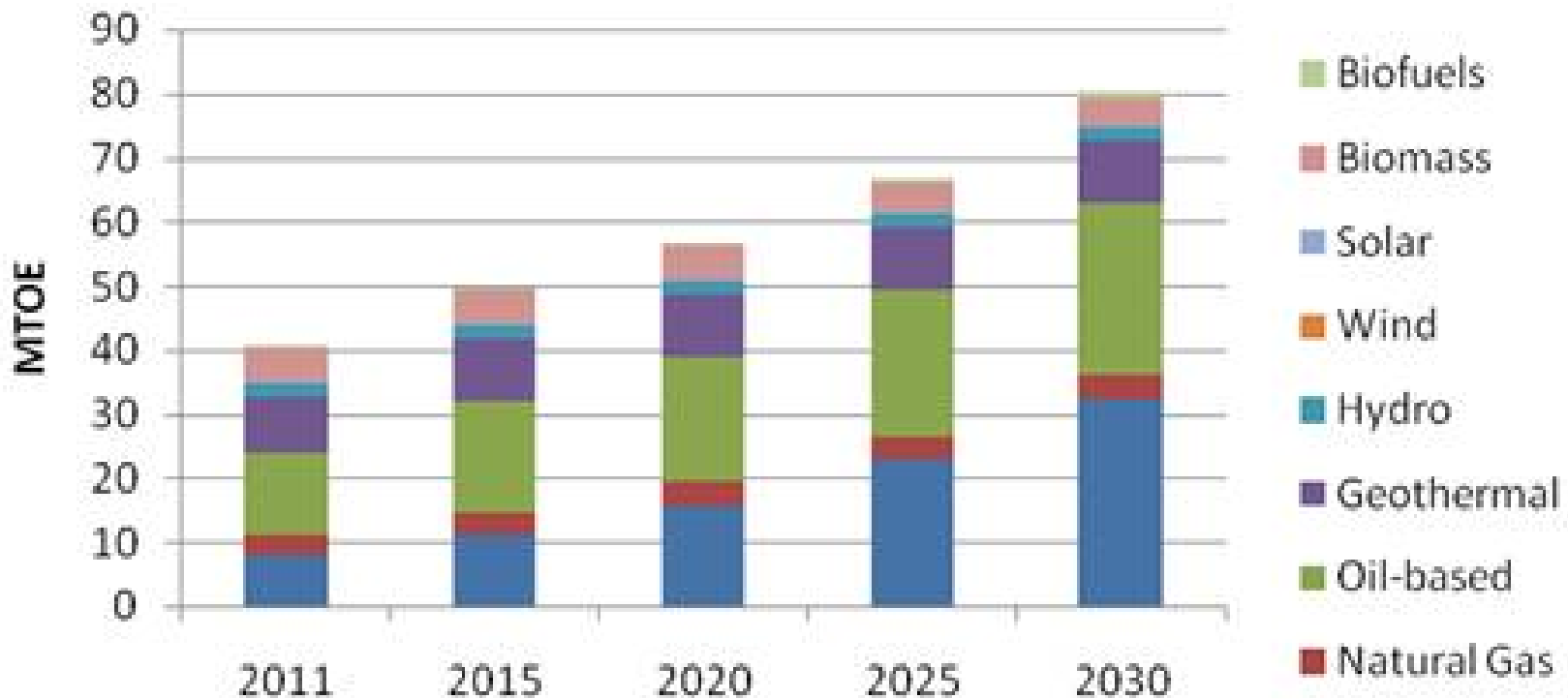
Self-sufficiency = 62.9%
Green Energy = 55.12%
RE = 26.31%



Energy Supply and Demand Outlook

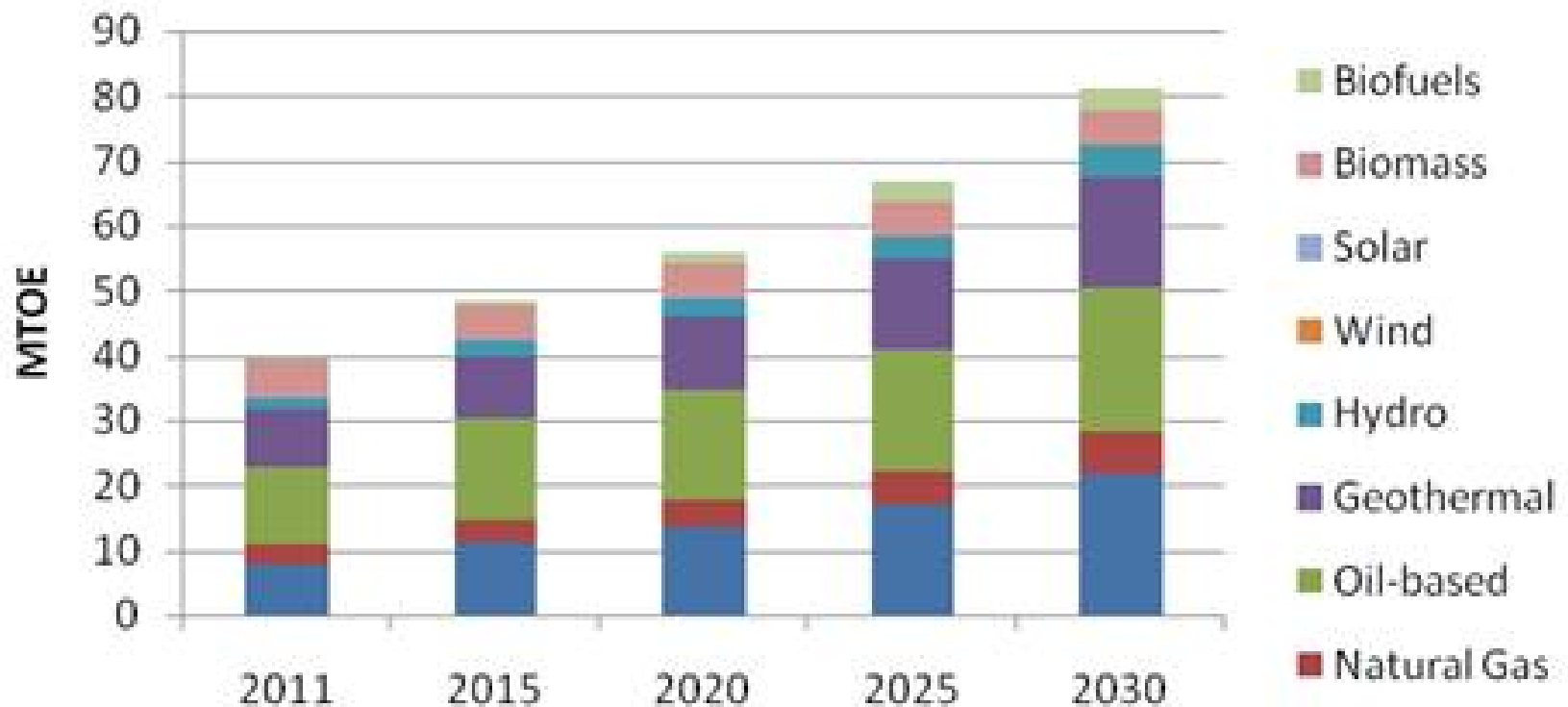
Energy Demand and Supply Outlook

Primary Energy Supply (BAU)



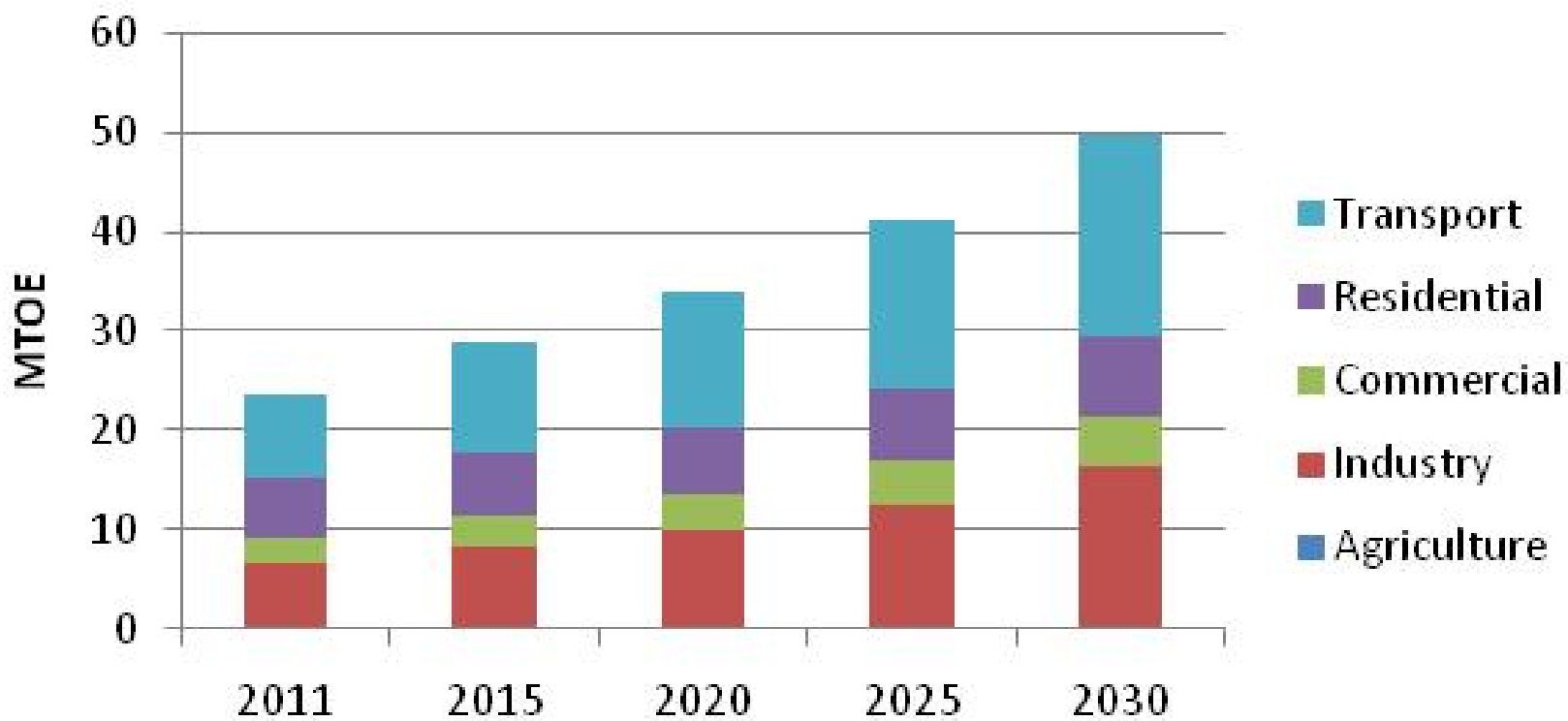
Energy Demand and Supply Outlook

Primary Energy Supply (GGS)



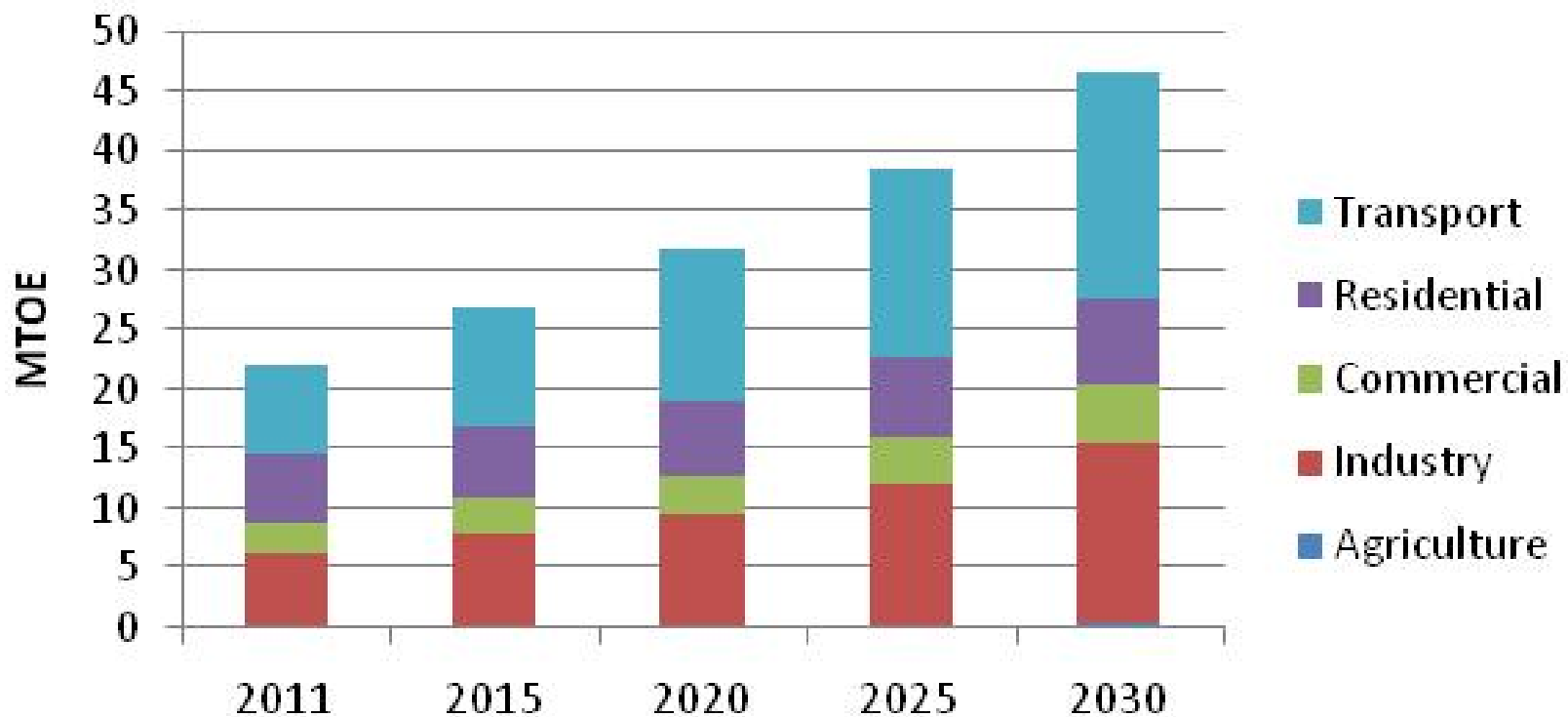
Energy Demand and Supply Outlook

Energy Demand by Sector (BAU)



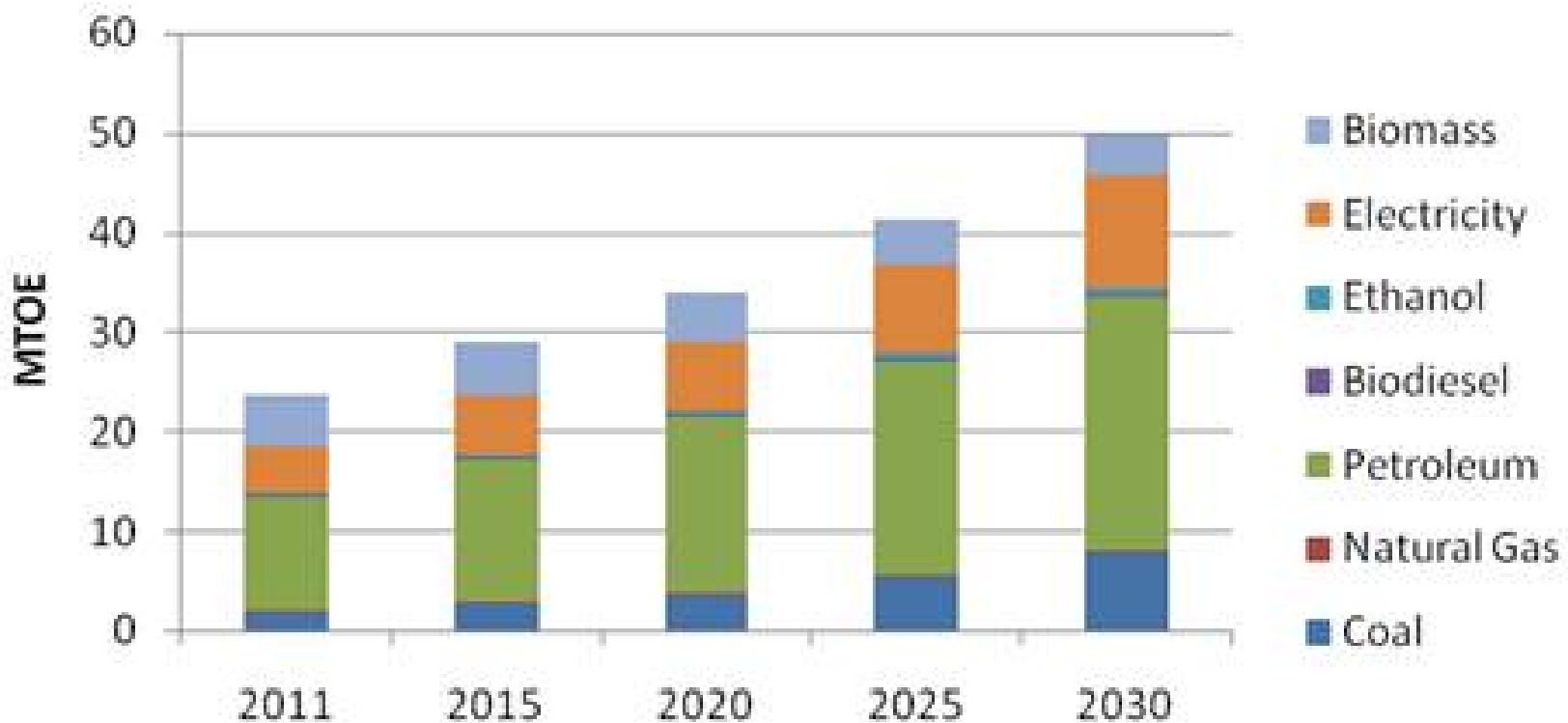
Energy Demand and Supply Outlook

Energy Demand by Sector (GGS)



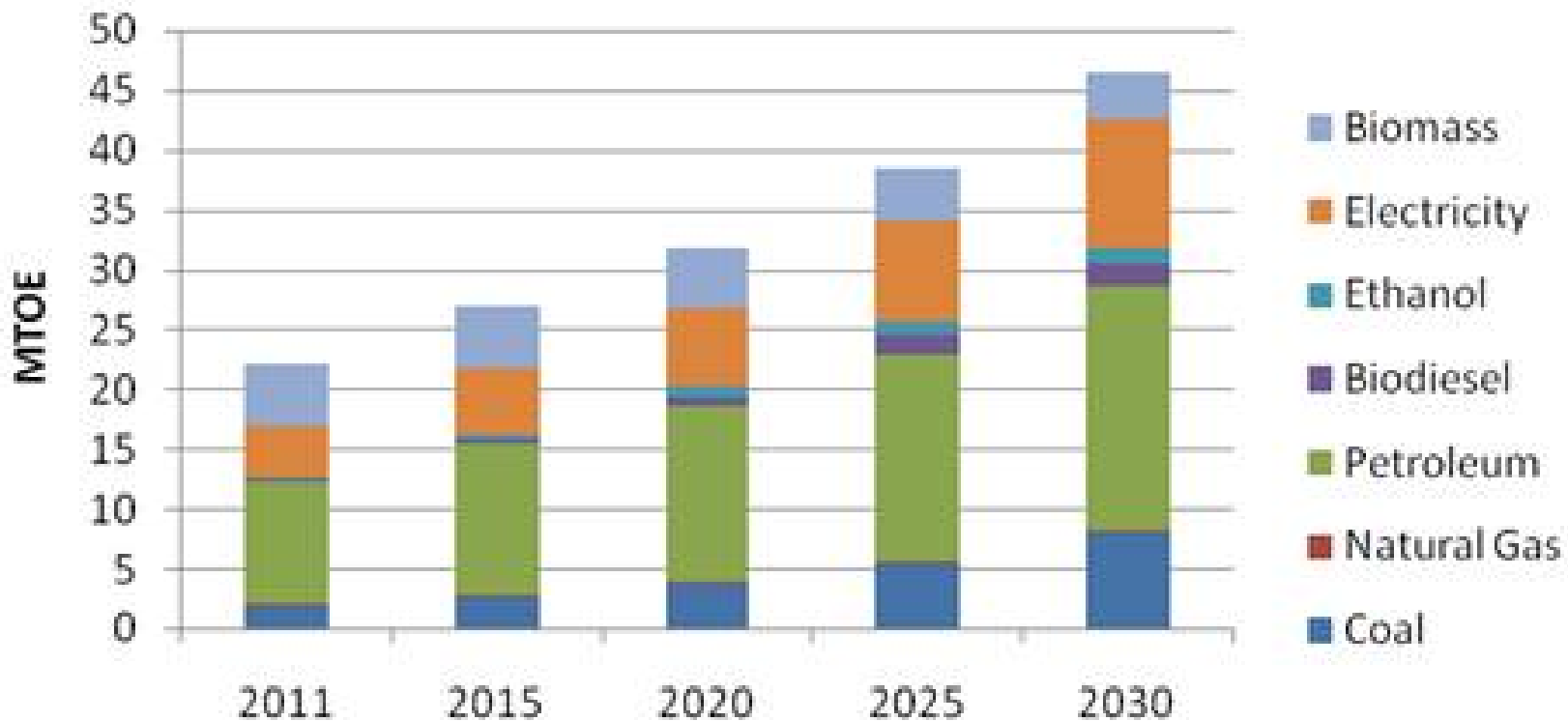
Energy Demand and Supply Outlook

Energy Demand by Fuel (BAU)



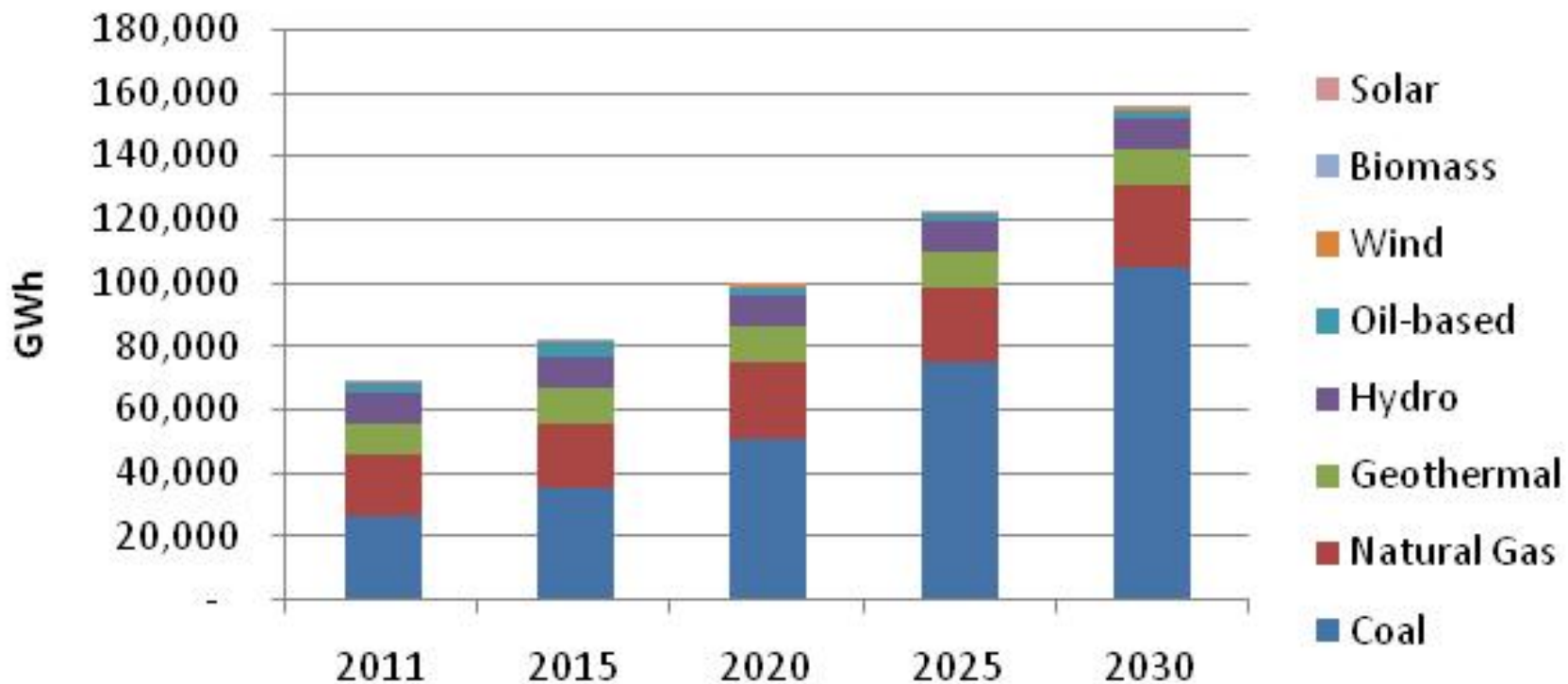
Energy Demand and Supply Outlook

Energy Demand by Fuel (GGS)



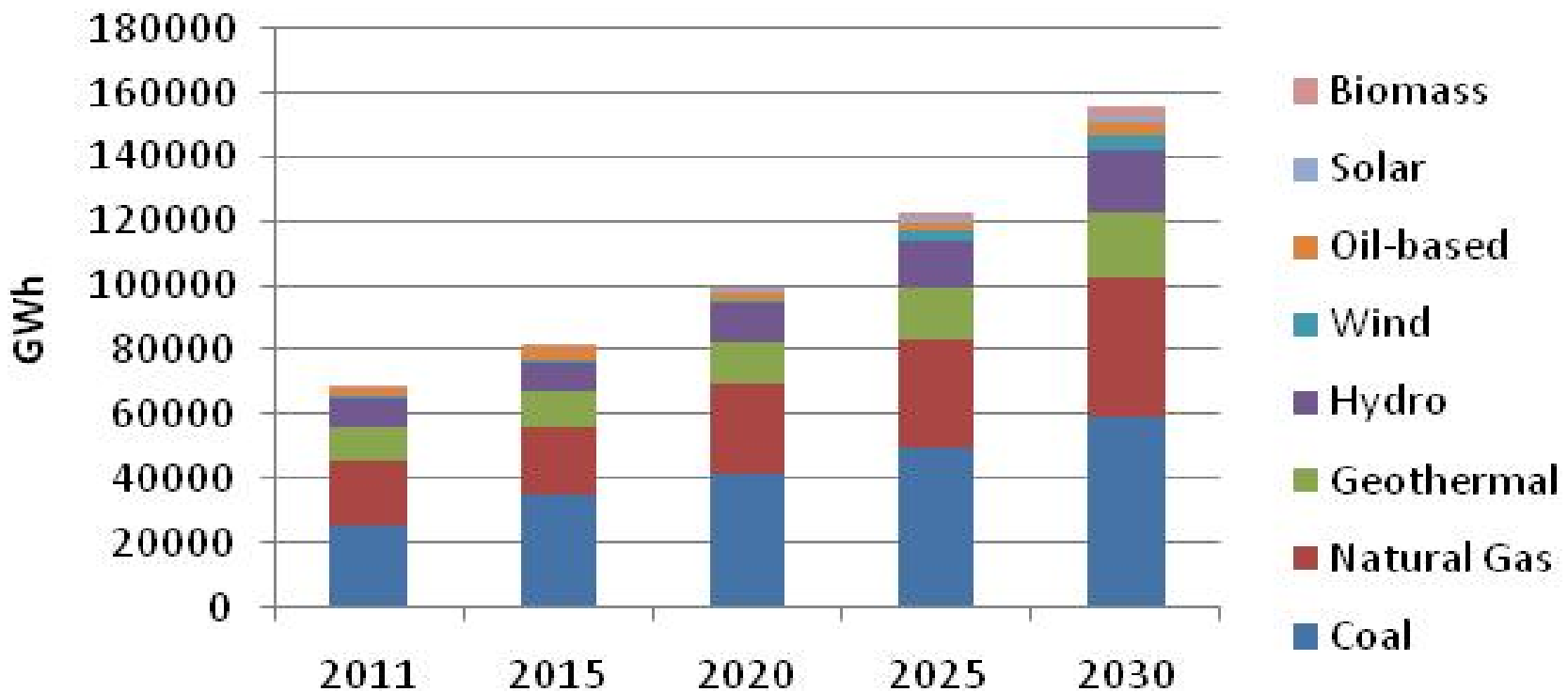
Energy Demand and Supply Outlook

Power Generation (BAU)



Energy Demand and Supply Outlook

Power Generation (GGS)





Challenges in Policy Formulation and Subjects to be Studied

Challenges in Policy Formulation

- Energy policies are sometimes not considered as national priority
- Lack of studies to support formulation of a proposed energy policy

Subjects to be Studied

- Implementation of the Alternative Fuels Program
- Energy Efficiency and Conservation Policy
- Renewable Energy
- Nuclear Energy



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