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# ENERGY POLICY (A) COUNTRY REPORT PHILIPPINES

**LILIBETH T. MORALES  
DEPARTMENT OF ENERGY**



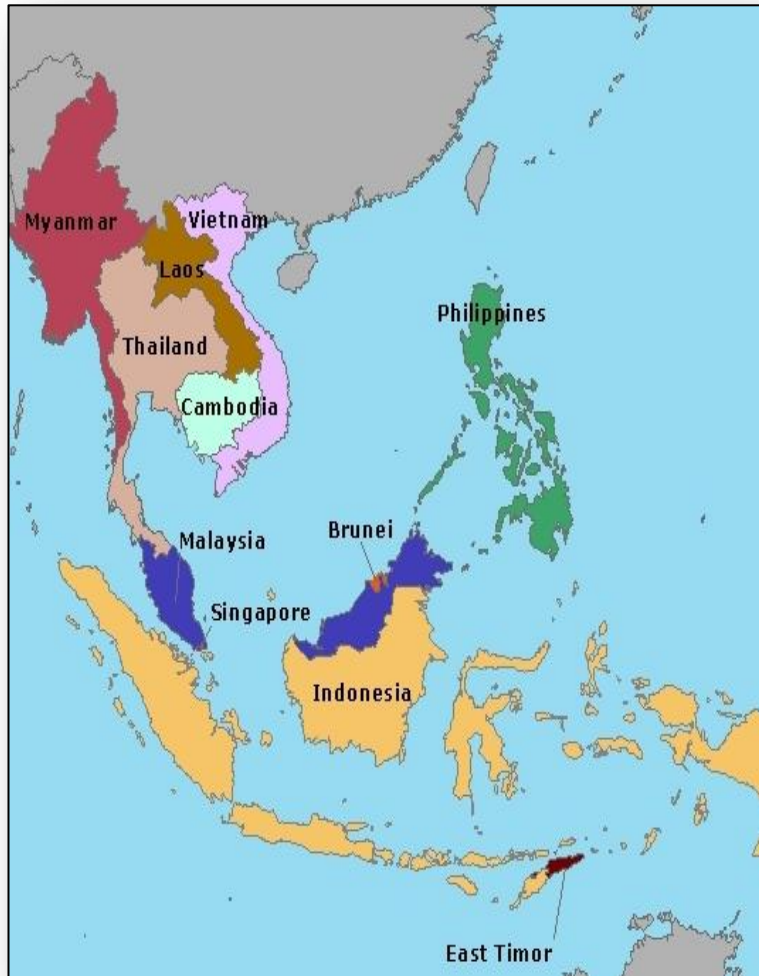
# PRESENTATION OUTLINE



- Country Profile and Economic Indicators
- Energy Reserves
- Current Energy Policy and Measures
- Historical Supply and Demand
- Energy Supply and Demand Outlook
- Investment Opportunities
- Challenges in Energy Policy Formulation
- Policy Study Priorities



# THE PHILIPPINES



## Selected Macro Economic Indicators

Number of Islands : 7,641 Islands  
 Population : 103.2 Million  
 (est. end 2016)  
 GDP : 8,113.2 Billion Pesos (2016)  
 GDP Growth Rate : 6.8% (2016)

## GDP Shares of Economic Sectors (2016)

Agriculture : 9%  
 Industry : 34%  
 Services : 56%

**GDP / Capita** : Php 78,583 /person  
 (2016)

**Energy / Capita** : 0.50 TOE/person  
 (2016)



# Energy Reserves



<b>Energy Reserves</b>				
<b>As of December 2016</b>				
	<b>Oil (in MMB)</b>	<b>Gas (in BCF)</b>	<b>Condensate (in MMB)</b>	<b>Coal (in MMT)</b>
<b>Reserves</b>	43	3,772	109	491.2 *
<b>Potential Resources</b>	125	68	-	350.6 **
<b>Undiscovered Mapped Resources</b>	1,341	8,303	55	55
Note:				
* Data as of November 2016				
** Potential Reserves, 2017-2040				



# STRATEGIC DIRECTIONS 2017-2040





# STRATEGIC DIRECTIONS



## 1 ENSURE ENERGY SECURITY

- **EO on DOE-declared energy projects as projects of national significance**
- Plan and build an appropriate portfolio of installed and dependable power capacity mix of 70% baseload, 20% mid-merit and 10% peaking plant categories (consistent with the projected economic growth up to 2030) that match the peak demand and the required 25% reserve requirements on a per regional grid bases.
- Ensure transparency and predictability in the power generation, transmission and distribution permitting process.
- Build a "common carrier" LNG receiving and distribution infrastructure anchored at a future "Clean Energy City"
- Accelerate total privatization of PSALM assets to meet its mandated goals prior to its end of corporate life in 2026
- Improve reliability, availability and resiliency of energy infrastructure and facilities
- Promote indigenous energy development and utilization



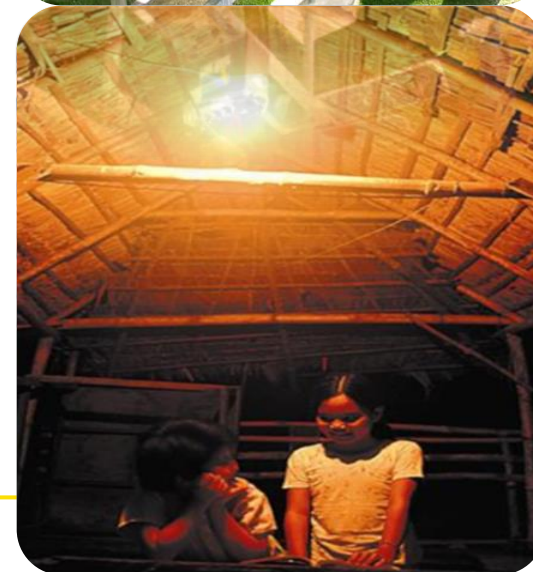


# STRATEGIC DIRECTIONS



## 2 EXPAND ENERGY ACCESS TO ENSURE AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL

- Exert best effort to achieve 100% electrification of targeted identified unelectrified households in all three major islands
- Connect the Mindanao grid with the interconnected Visayas and Luzon grids to increase power supply reliability and resilience
- Formulate/update Philippine Energy Plan (PEP) and Regional Energy Plans
- Update and implement the Power Development Plan (PDP) and its component plans



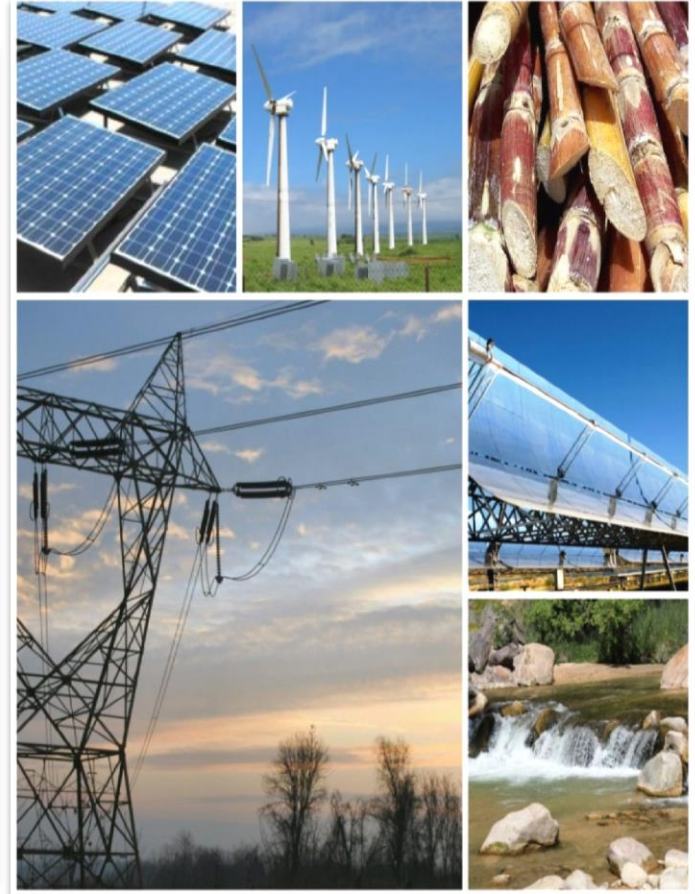


# STRATEGIC DIRECTIONS



## 3 PROMOTE A LOW CARBON FUTURE

- Review fuel mix policy
- Increase RE Capacity by 2030 (based on 2010 level)
- Promote technology innovation through research, development, demonstration and deployment
  - Clean, efficient and smart energy technologies
  - Infrastructure for next generation vehicles







# STRATEGIC DIRECTIONS



## 4

### STRENGTHEN COLLABORATION BUILDING AMONG ALL GOVERNMENT AGENCIES INVOLVED IN ENERGY AND ENERGY-RELATED ISSUES

- Undertake capacity-building of human resources within the “Energy Family” in the organizational, administrative, financial and legal competency areas to better carry out its balanced developmental and regulatory functions.
- Harmonize and integrate projects with other relevant agencies.
- Upgrade ICT capability of Energy Family
- Development and implement a unified communications strategy for DOE for its internal and external clients.





# STRATEGIC DIRECTIONS



## 5 IMPLEMENT, MONITOR AND INTEGRATE SECTORAL AND TECHNOLOGICAL ROADMAPS AND ACTION PLANS

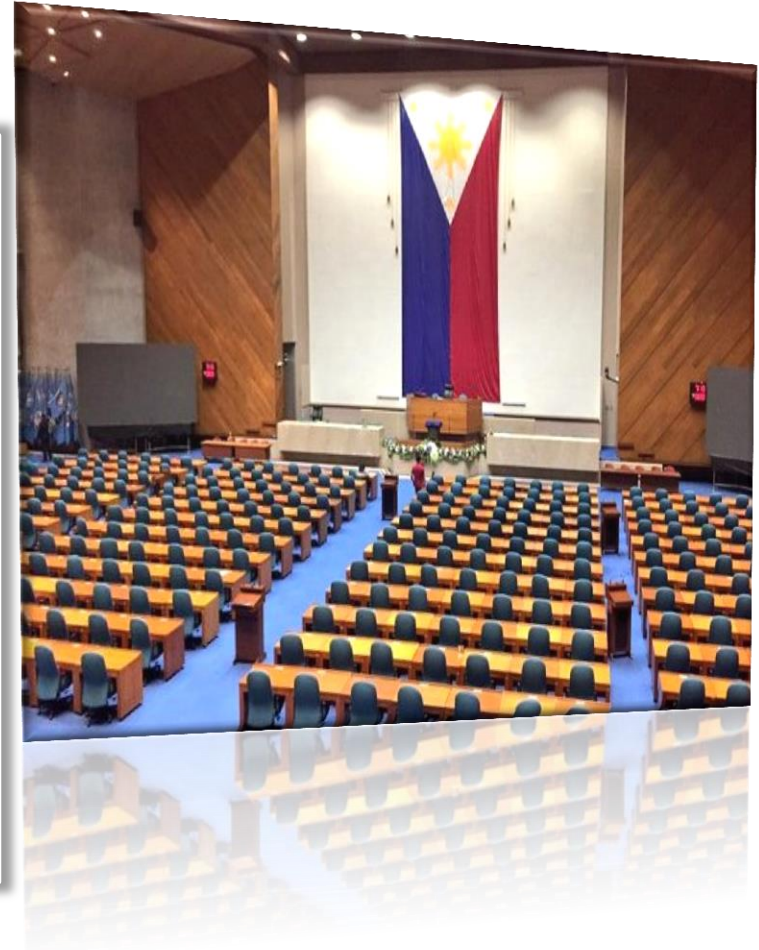


- Alternative fuels and energy technologies
- Energy efficiency and conservation
  - Conduct a nationwide IEC on ways to reduce electricity and fuel consumption
- Resource development (oil, gas and coal)
- Renewable Energy
- Downstream oil, gas and coal
- Power and electrification
- ICT for energy (greater access to information by public and other stakeholders)



## 6 ADVOCATE THE PASSAGE OF THE DEPARTMENT'S LEGISLATIVE AGENDA AND ISSUANCE OF PERTINENT RULES AND REGULATION

- Energy Efficiency and Conservation (EE&C), Natural Gas, Liquefied Petroleum Gas (LPG), Energy projects as projects of national significance, Petroleum Upstream Regulation
- Review of existing laws such as EPIRA, Downstream Oil Industry, Renewable Energy



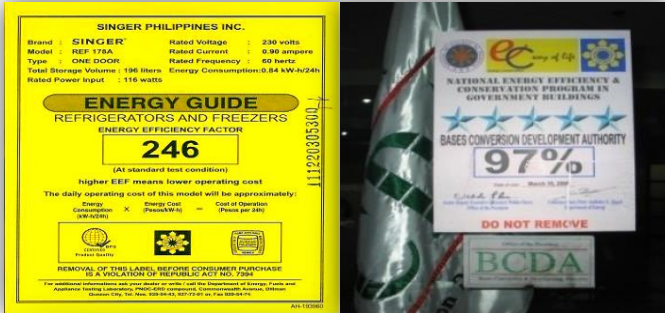


# STRATEGIC DIRECTIONS



## 7 STRENGTHEN CONSUMER WELFARE AND PROTECTION THROUGH MULTI-SECTORAL MULTIMEDIA IEC PROGRAMS

- Integration in curriculum of energy concepts
- Increase energy awareness among public school students through the conduct of seminars and field visits
- Promotion of alternative fuel vehicles and emerging energy technologies







# STRATEGIC DIRECTIONS



## 8 FOSTER STRONGER INTERNATIONAL RELATIONS AND PARTNERSHIPS

- Bilateral and multi-lateral energy cooperation
- Facilitate free trade agreements on energy trade and services
- UN's Sustainable Energy for All (SE4All)





# DOE's 9-POINT PROGRAM



**ACHIEVE 100% ELECTRIFICATION OF ALL UNELECTRIFIED HOUSEHOLDS**



**BUILD A "COMMON CARRIER" LIQUEFIED NATURAL GAS RECEIVING AND DISTRIBUTION INFRASTRUCTURE ANCHORED AT A FUTURE "CLEAN ENERGY CITY"**



**CONNECT THE MINDANAO GRID WITH THE CONNECTED VISAYAS AND LUZON GRIDS**



**PLAN AND BUILD AN APPROPRIATE PORTFOLIO OF INSTALLED AND DEPENDABLE POWER CAPACITIES**



**ACCELERATE THE TOTAL PRIVATIZATION OF PSALM ASSETS**



**ENSURE TRANSPARENCY AND PREDICTABILITY IN THE POWER GENERATION, TRANSMISSION AND DISTRIBUTION PERMITTING PROCESS**



**UNDERTAKE CAPACITY BUILDING OF HUMAN RESOURCES WITHIN THE "ENERGY FAMILY"**



**CONDUCT A NATIONWIDE IEC CAMPAIGN ON WAYS TO REDUCE ELECTRICITY AND FUEL CONSUMPTION**



**PURSUE ENERGY RESOURCE DEVELOPMENT**

# OVERALL SECTORAL OBJECTIVES BY 2040



## UPSTREAM OIL AND GAS

Increase indigenous petroleum reserves to 57.12 MMB oil, 5.87 TCF gas and 56.81MMB condensate and produce 115.37 MMB oil, 4.04 TCF gas and 45.93 MMB condensate to contribute to the country's energy requirements

## ELECTRIC POWER INDUSTRY

Ensure quality, reliable, affordable and secure supply; Expand access to electricity; Ensure a transparent and fair playing field in the power industry

## COAL

Increase indigenous coal reserves to 766 MMT and 282 MMT production to contribute to the country's energy requirements

## RENEWABLE ENERGY

Increase RE installed capacity to at least 20,000 MW

## DOWNSTREAM OIL INDUSTRY

Improve policy governing the downstream oil industry to ensure continuous supply of high quality and right quantity of petroleum products in the market

## ALTERNATIVE FUELS & TECHNOLOGIES

Ensure secured and stable supply of energy through technology-responsive energy sector

## DOWNSTREAM NATURAL GAS

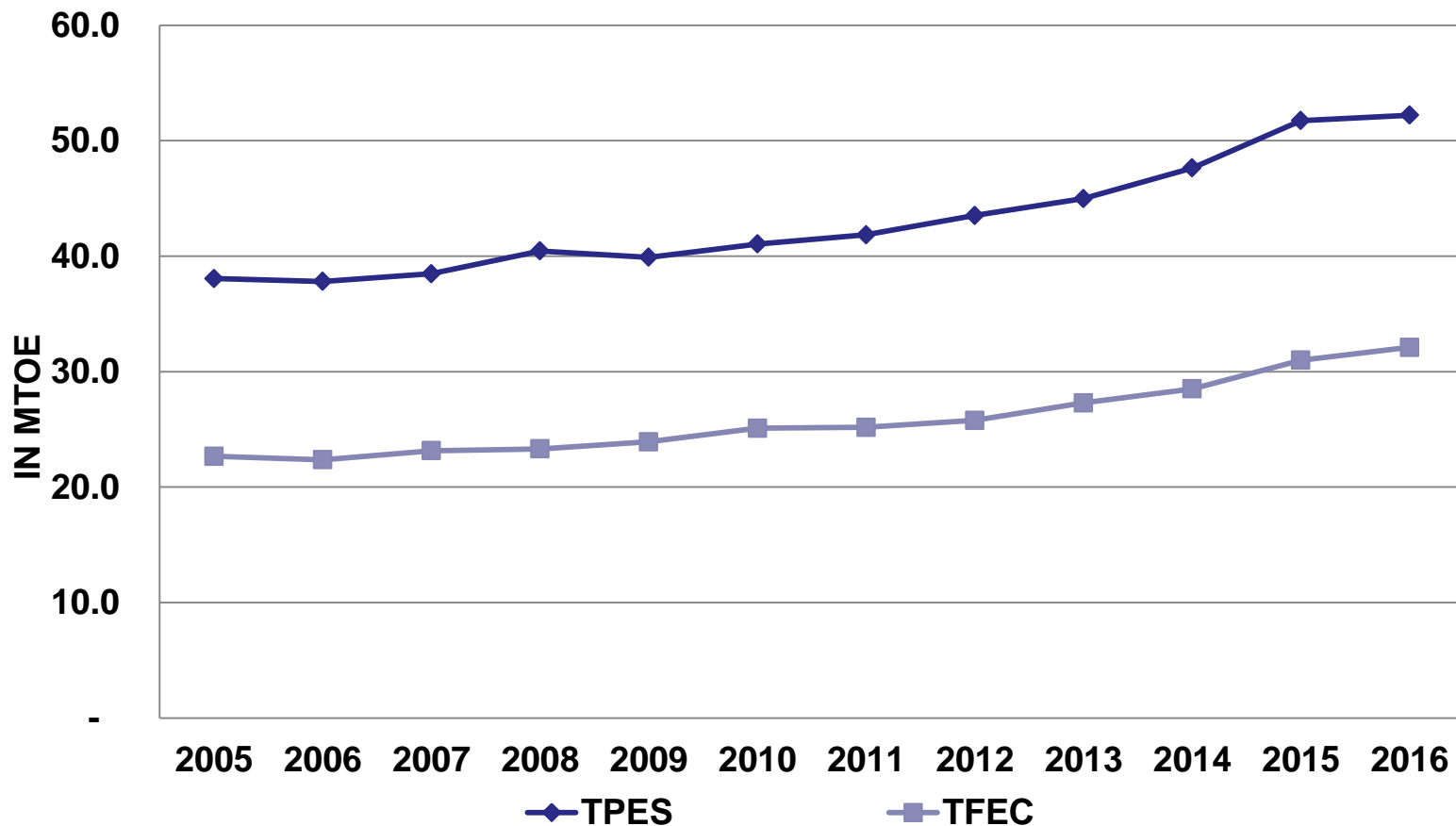
Establish a world-class, investment driven and efficient natural gas industry that makes natural gas the preferred fuel by all end-use sectors

## ENERGY EFFICIENCY & CONSERVATION

Reduce energy intensity and consumption per year

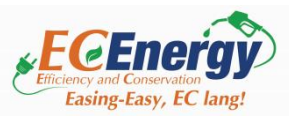
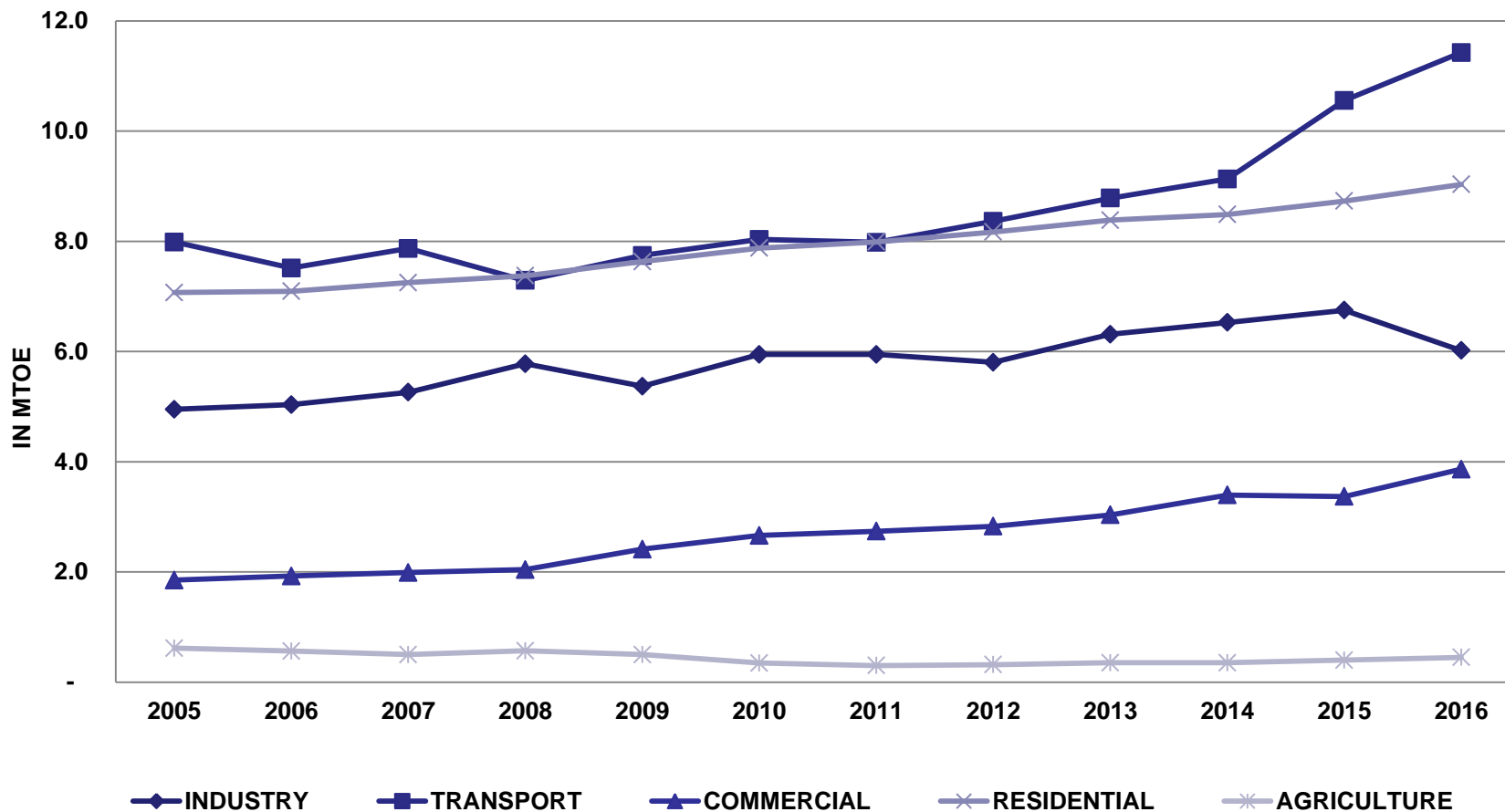


# HISTORICAL SUPPLY AND DEMAND 2005-2016



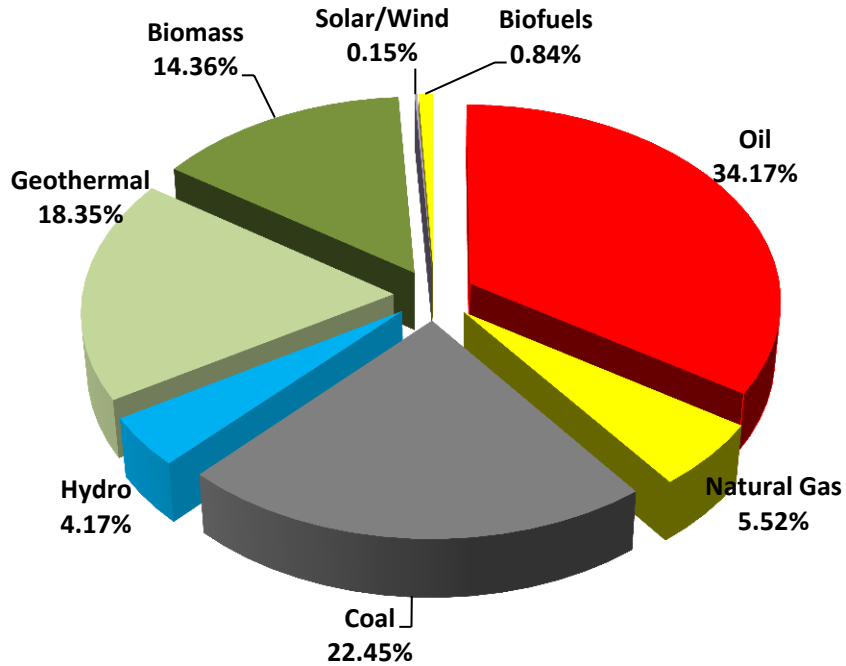


# HISTORICAL DEMAND BY SECTOR 2005-2016





# PRIMARY ENERGY MIX

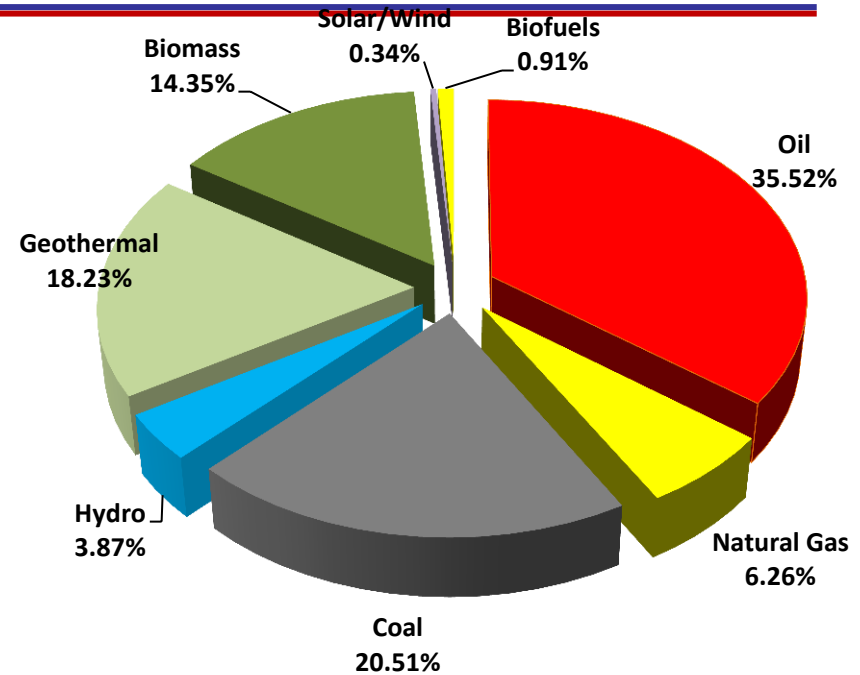


**2015 Total Energy: 51.7 MTOE**

Self Sufficiency: 51.9%

Renewable Energy (RE) = 37.9%

Share of Green Energy (RE+Natgas) = 43.4%



**2016\* Total Energy: 52.2 MTOE**

Self Sufficiency: 56.3%

Renewable Energy (RE) = 37.7%

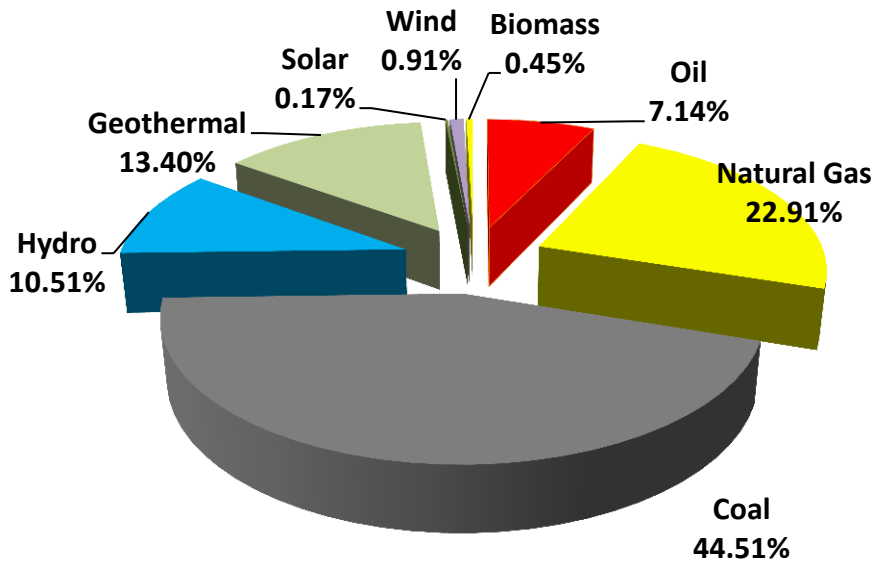
Share of Green Energy (RE+Natgas) = 44.0%

*Note: \* EBT as of May 2017*





# POWER GENERATION MIX

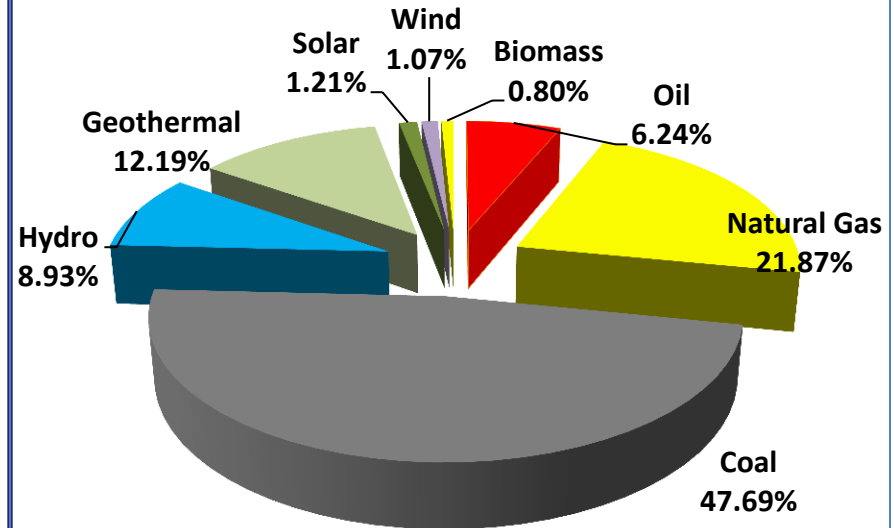


**2015 Total Generation: 82.4 TWh**

Self Sufficiency: 53.1%

Renewable Energy (RE) = 25.4%

Share of Green Energy (RE+Natgas) = 48.3%



**2016\* Total Generation: 90.8 TWh**

Self Sufficiency: 51.0%

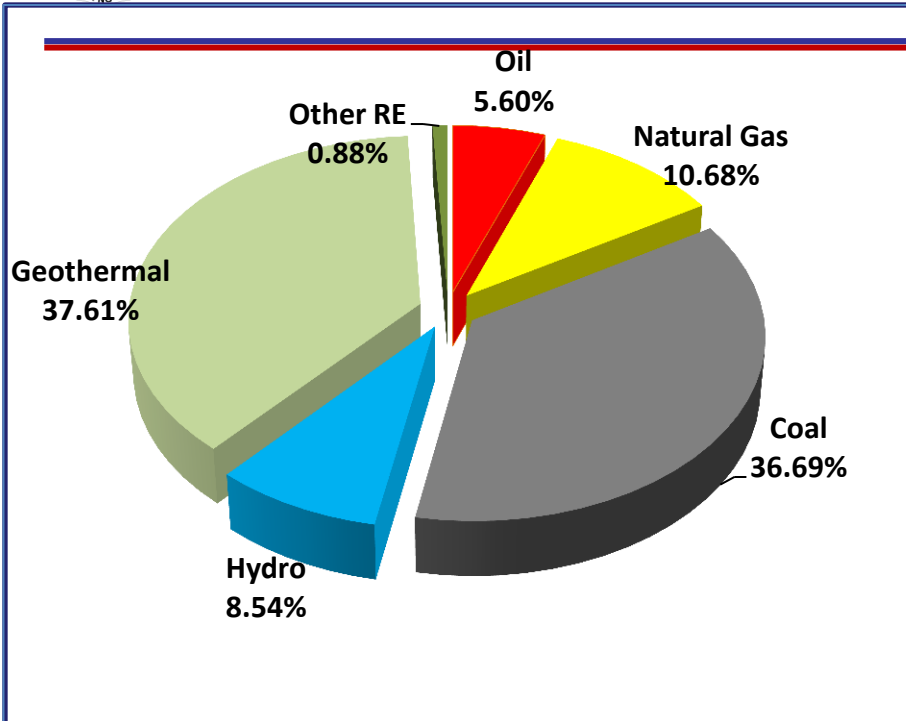
Renewable Energy (RE) = 24.2%

Share of Green Energy (RE+Natgas) = 46.1%

*Note: \* EBT as of May 2017*

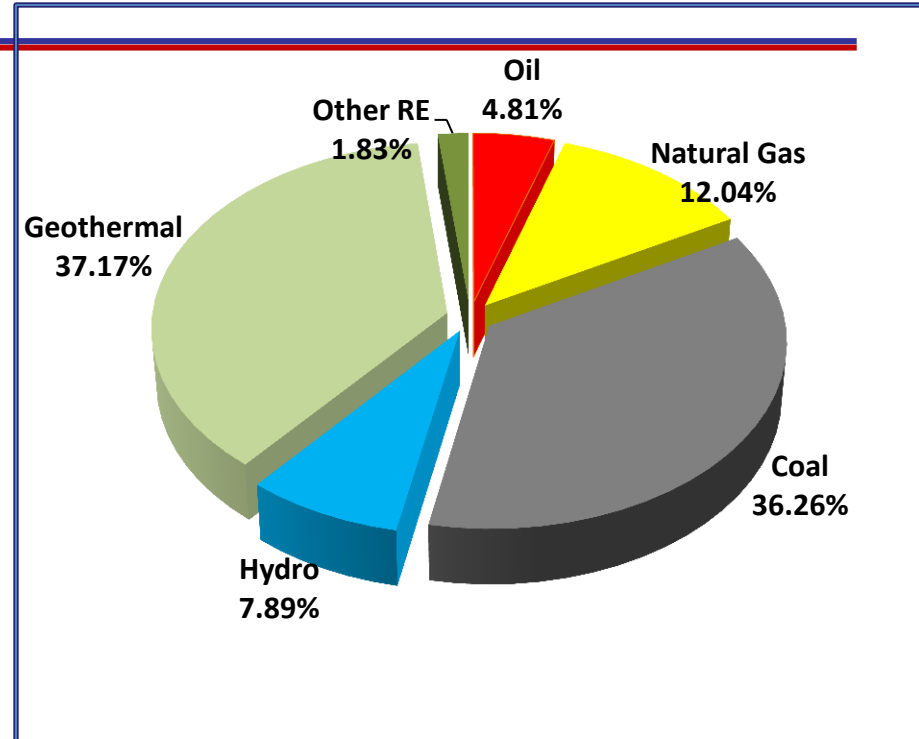


# FUEL INPUT MIX



**2015 Total Input: 25.2 MTOE**

Renewable Energy (RE) = 47.0%  
 Share of Green Energy (RE+Natgas) = 57.7%



**2016\* Total Input: 25.6MTOE**

Renewable Energy (RE) = 46.9%  
 Share of Green Energy (RE+Natgas) = 58.9%

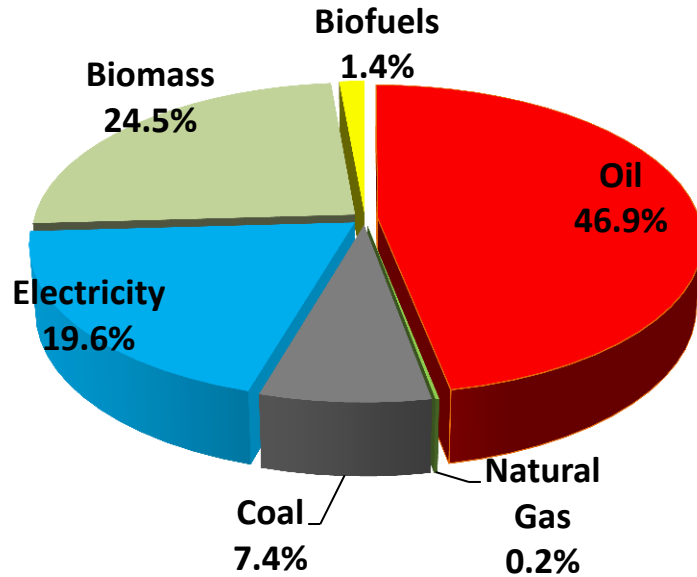


*Note: \* EBT as of May 2017*



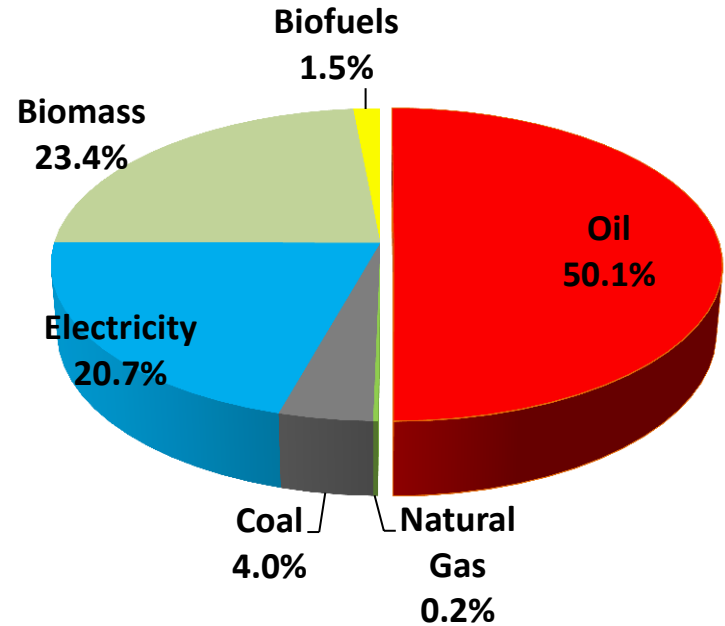
# TFEC by FUEL

TFEC BY FUEL (excludes non-energy used)



2015 Total Input: 30.8 MTOE

TFEC BY FUEL (excludes non-energy used)

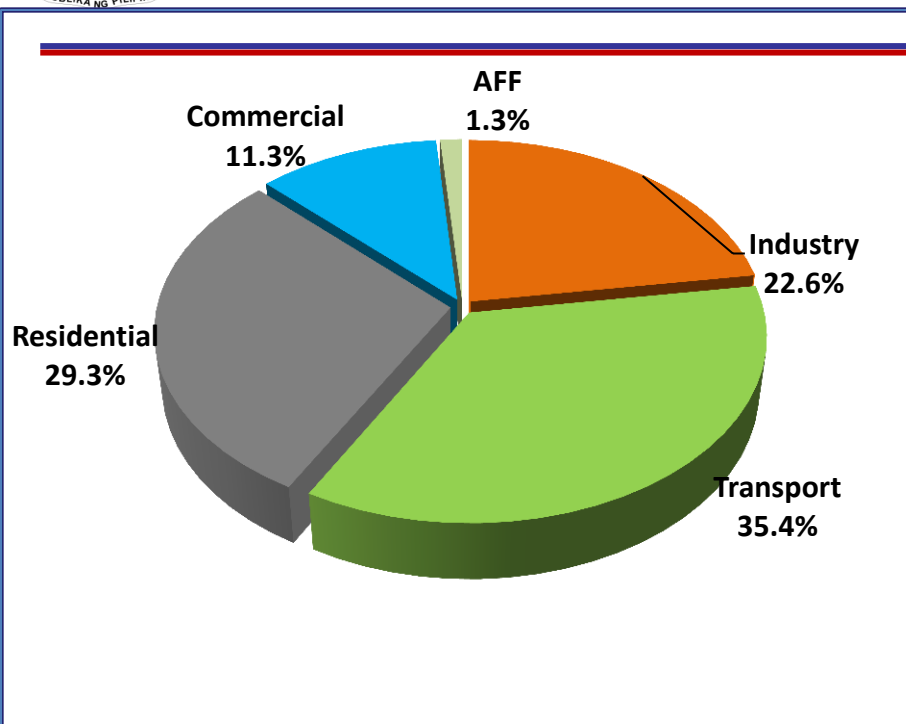


2016\* Total Input: 32.1 MTOE

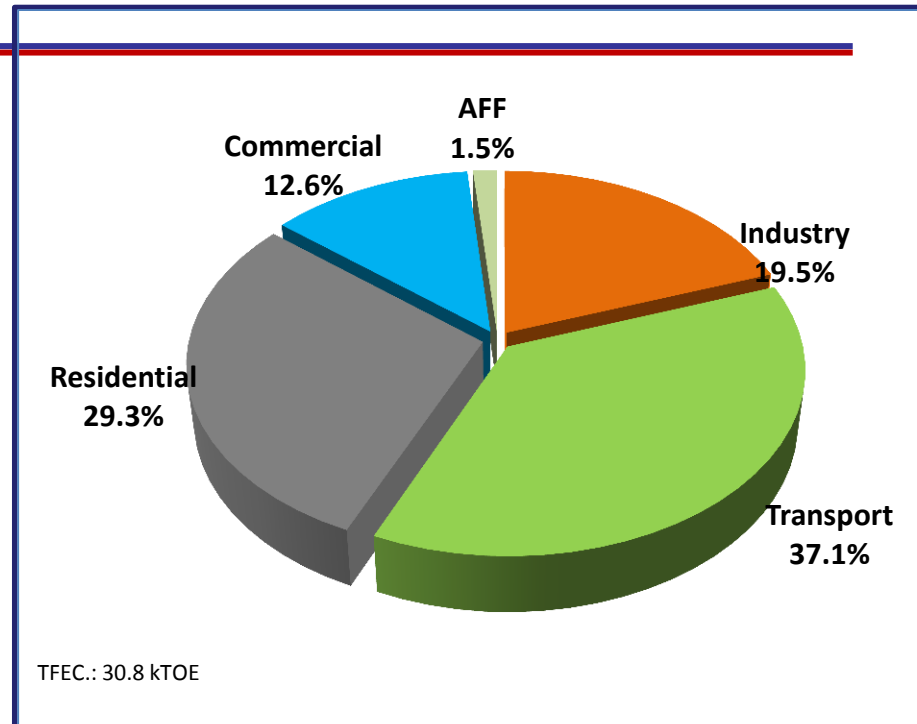
Note: \* EBT as of May 2017



# TFEC by SECTOR



**2015 TFEC: 30.8 MTOE**



TFEC.: 30.8 kTOE

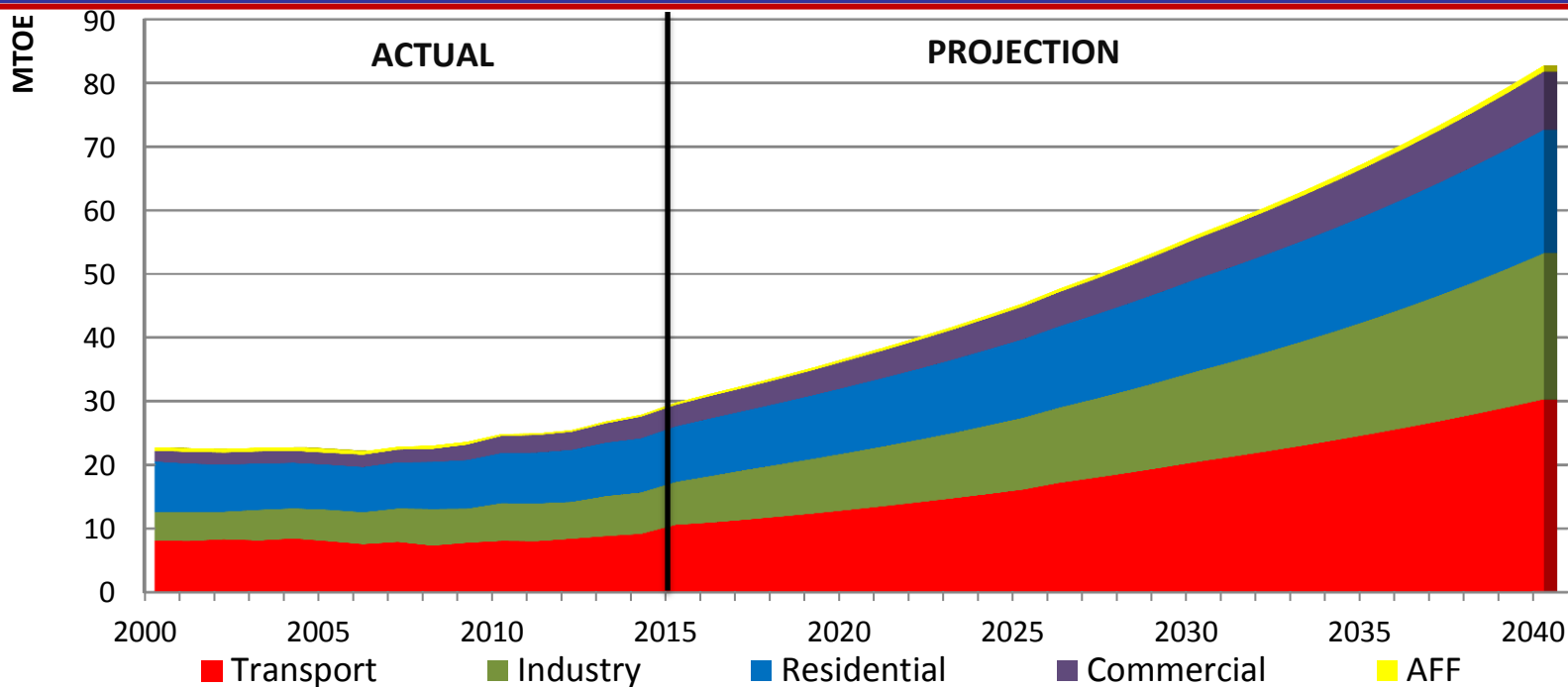
**2016\* TFEC: 32.1 MTOE**

*Note: \* EBT as of May 2017*



# SUPPLY AND DEMAND PROJECTION

## Total Final Energy Demand by Sector, MTOE



Sector	2015		2030		2040		AAGR (2015-2040)
	MTOE	% Shares	MTOE	% Shares	MTOE	% Shares	
AFF	0.40	1.3	0.66	1.2	1.01	1.2	3.8%
Industry	6.75	22.6	14.26	25.4	22.98	27.7	5.0%
Commercial	3.37	11.3	6.31	11.2	9.14	11.0	4.1%
Residential	8.73	29.3	14.52	25.8	19.41	23.4	3.2%
Transport	10.56	35.4	20.44	36.4	30.29	36.6	4.3%
<b>Total</b>	<b>29.81</b>	<b>100.0</b>	<b>56.20</b>	<b>100.0</b>	<b>82.81</b>	<b>100.0</b>	<b>4.2%</b>



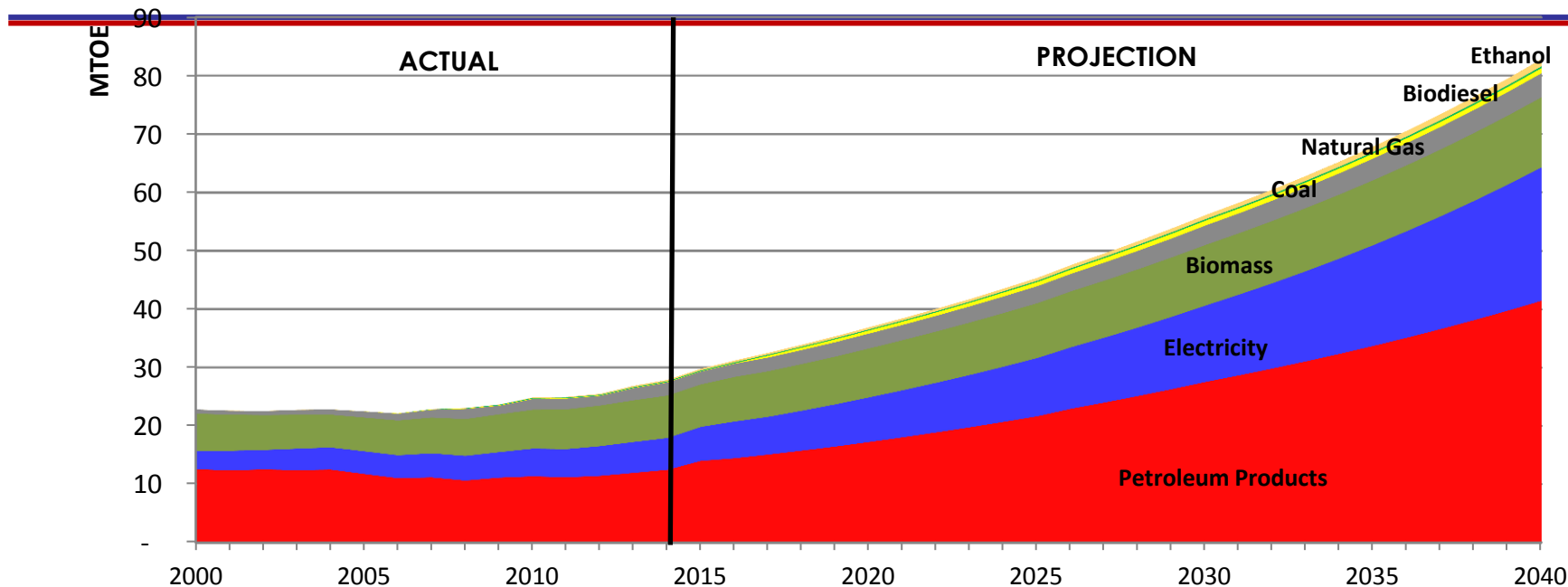
Note: Projections are preliminary (as of March 2017) subject to new sectoral targets and developments in the energy sector.





# SUPPLY AND DEMAND PROJECTION

## Total Final Energy Demand by Fuel Type: In MTOE



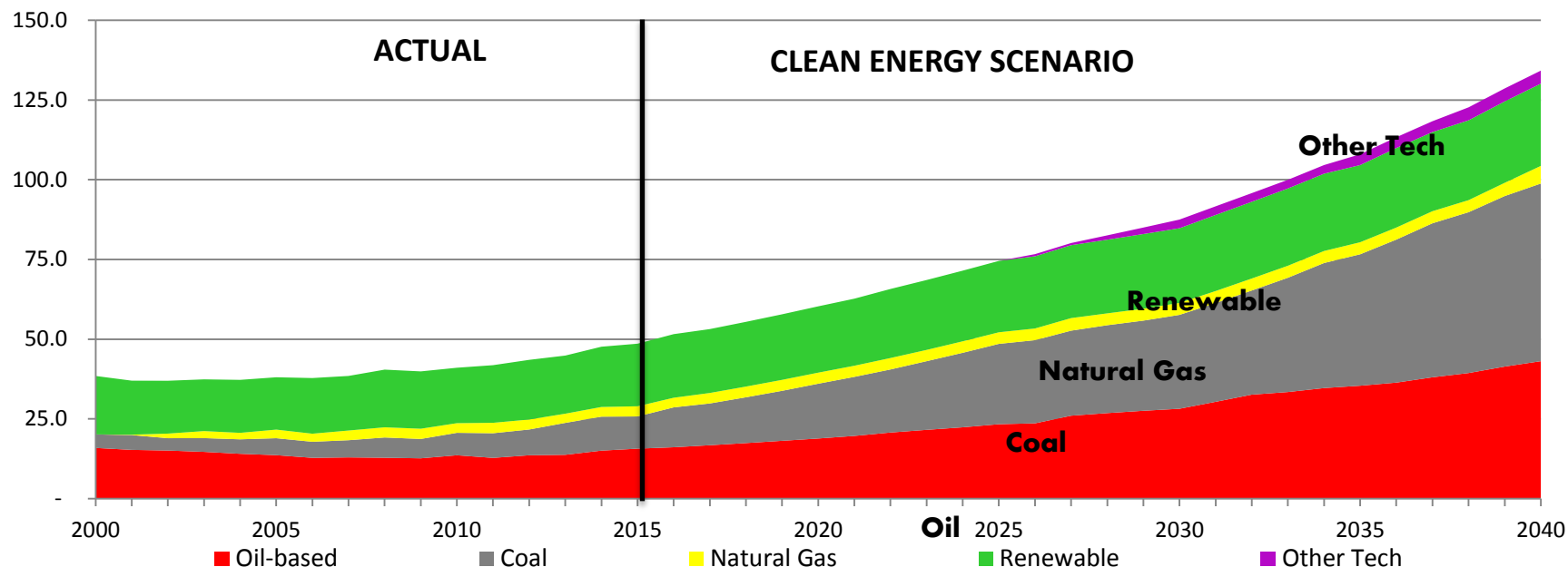
Sector	2015		2030		2040		AAGR (2015-2040)
	MTOE	% Shares	MTOE	% Shares	MTOE	% Shares	
Coal	2.22	7.4	3.33	5.9	4.12	5.0	2.5%
Natural Gas	0.05	0.2	0.84	1.5	0.88	1.1	12.2%
Petroleum Products	13.99	46.9	27.56	49.0	41.45	50.0	4.4%
Biodiesel	0.15	0.05	0.24	0.4	0.31	0.4	3.1%
Ethanol	0.28	0.09	0.70	1.3	1.22	1.5	6.0%
Electricity	5.83	19.6	13.13	23.4	22.84	27.6	5.6%
Biomass	7.29	24.5	10.39	18.5	12.00	14.5	2.0%
<b>Total</b>	<b>29.81</b>	<b>100.0</b>	<b>56.20</b>	<b>100.0</b>	<b>82.81</b>	<b>100.0</b>	<b>4.2%</b>

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# SUPPLY AND DEMAND PROJECTION

## Total Primary Energy Supply Mix: (in MTOE)

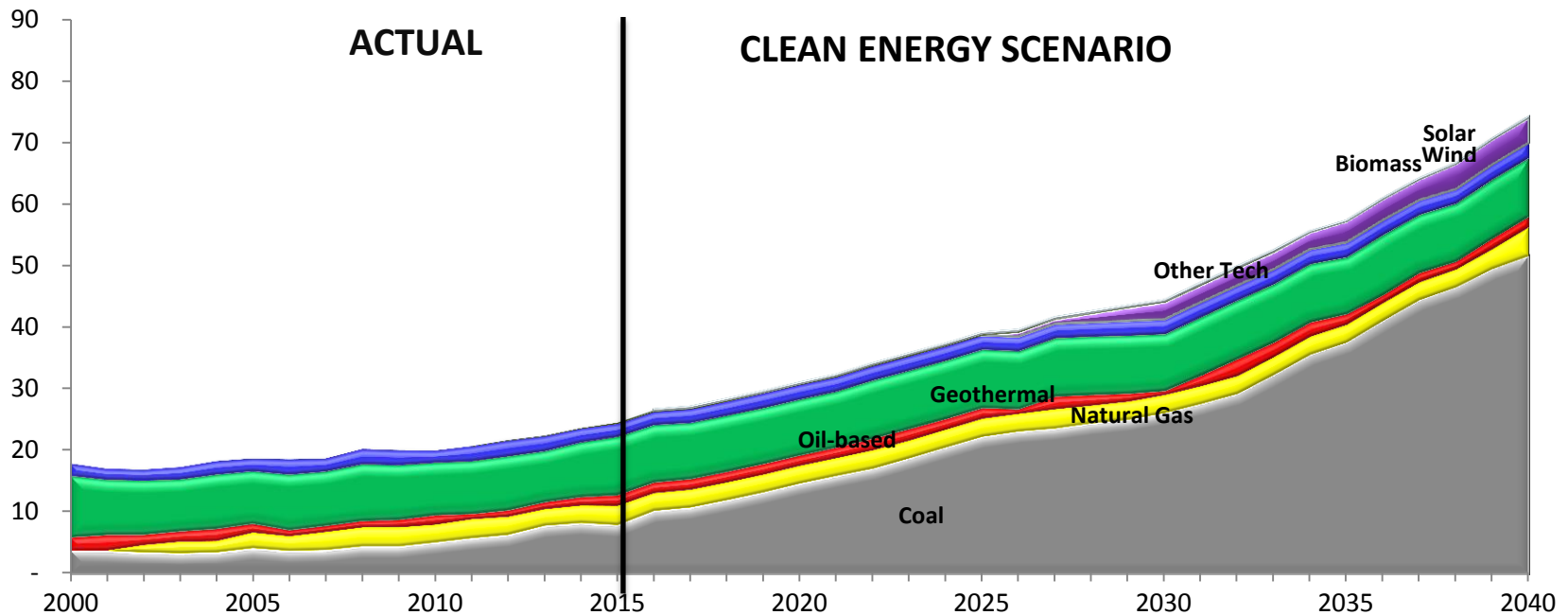


Fuel	2015		2030		2040		AAGR (2015-2040)
	MTOE	% Shares	MTOE	% Shares	MTOE	% Shares	
Coal	11.61	20.8	29.43	33.6	55.69	63.6	6.5%
Natural Gas	2.85	6.6	3.76	4.3	5.54	6.3	2.7%
Oil	17.68	32.3	28.19	32.2	43.10	49.3	3.6%
Renewable*	19.59	40.4	23.40	26.7	25.79	29.5	1.1%
Other Technology	-	-	2.71	3.1	4.07	4.6	-
<b>Total</b>	<b>51.75</b>	<b>100.0</b>	<b>87.50</b>	<b>100.0</b>	<b>134.19</b>	<b>100.0</b>	<b>4.5%</b>



# SUPPLY AND DEMAND PROJECTION

## Fuel Input to Power Generation Mix: in MTOE



Fuel	2015		2030 - CES		2040 – CES		AAGR (2015-2040)
	MTOE	% Shares	MTOE	% Shares	MTOE	% Shares	
Coal	9.26	36.7	26.10	58.7	51.57	69.5	7.1%
Natural Gas	2.70	10.7	2.92	6.6	4.66	6.3	2.2%
Oil	1.41	5.6	0.63	1.4	1.66	2.2	0.7%
Renewable*	11.87	47.0	12.01	27.2	12.25	16.5	0.1%
Other Technology	-	-	2.71	6.1	4.07	5.5	-
<b>Total</b>	<b>25.24</b>	<b>100.0</b>	<b>44.43</b>	<b>100.0</b>	<b>74.21</b>	<b>100.0</b>	<b>4.4%</b>



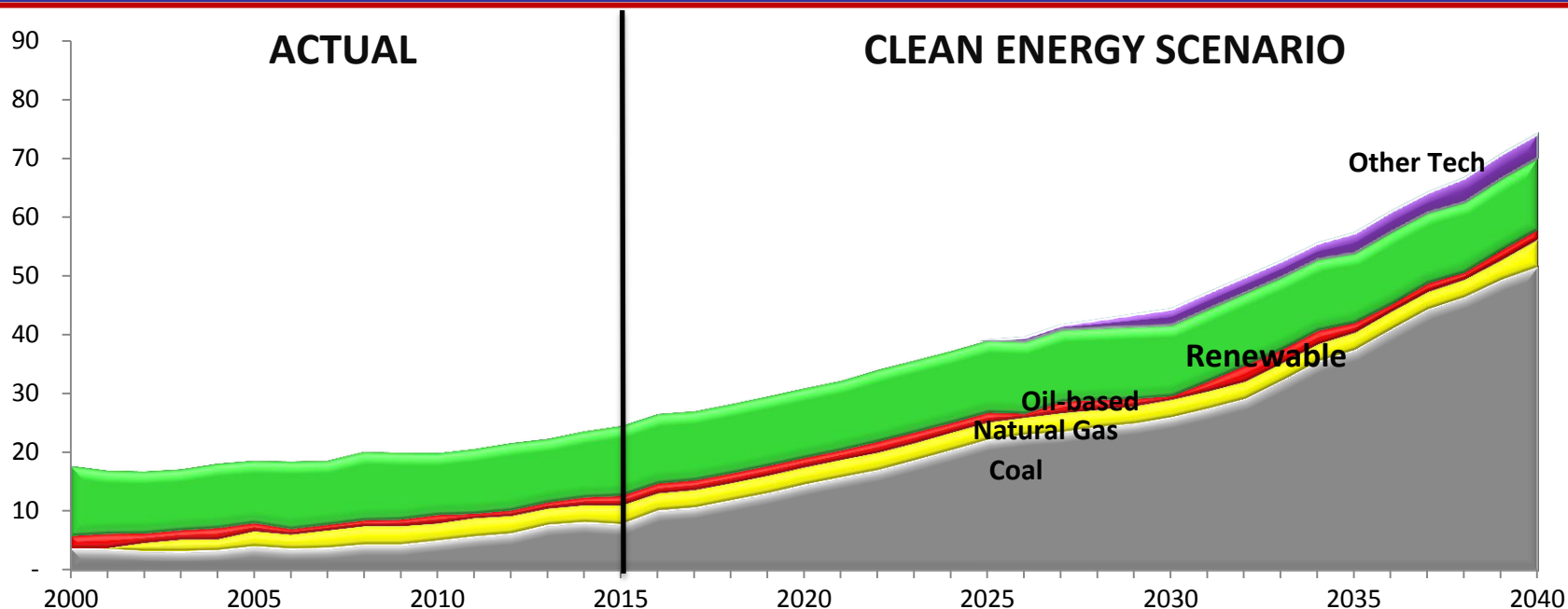
\*geothermal, hydro, biomass, biofuels, wind & solar

Note: Projections are preliminary (as of March 2017) subject to new sectoral targets and developments in the energy sector.



# SUPPLY AND DEMAND PROJECTION

## Fuel Input to Power Generation Mix: in MTOE



Fuel	2015		2030 - CES		2040 - CES		AAGR (2015-2040)
	MTOE	% Shares	MTOE	% Shares	MTOE	% Shares	
Coal	9.26	36.7	26.10	58.7	51.57	69.5	7.1%
Natural Gas	2.70	10.7	2.92	6.6	4.66	6.3	2.2%
Oil	1.41	5.6	0.63	1.4	1.66	2.2	0.7%
Renewable*	11.87	47.0	12.01	27.2	12.25	16.5	0.1%
Other Technology	-	-	2.71	6.1	4.07	5.5	-
<b>Total</b>	<b>25.24</b>	<b>100.0</b>	<b>44.43</b>	<b>100.0</b>	<b>74.21</b>	<b>100.0</b>	<b>4.4%</b>



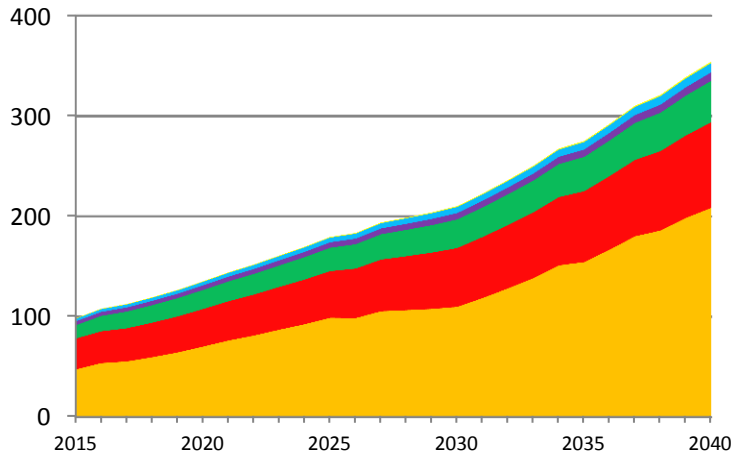
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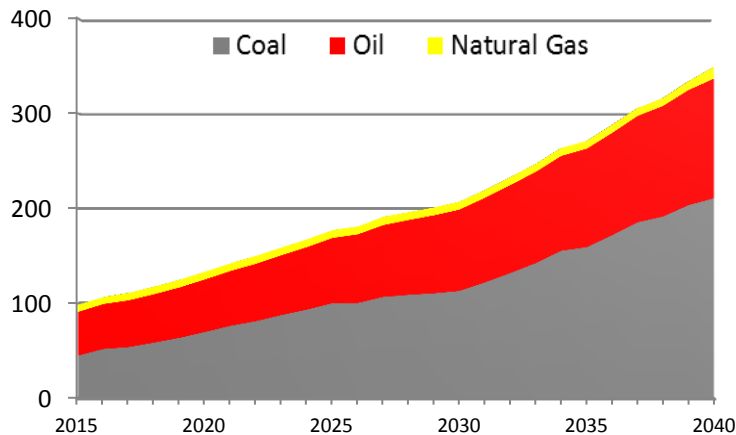
# SUPPLY AND DEMAND PROJECTION

## Total GHG Emission, by Sector & By Fuel



■ Power Generation ■ Transport ■ Industry ■ Commercial ■ Residential ■ AFF

Sector	2015		2040		AAGR
	MTCO <sub>2</sub> e	% Shares	MTCO <sub>2</sub> e	% Shares	
Transformation	48.30	48.5	208.47	59.7	6.1%
Industry	13.28	13.4	36.09	10.3	4.1%
Transport	30.71	30.9	85.31	24.4	4.2%
Commercial	3.88	3.9	8.49	2.4	3.2%
Residential	2.60	2.6	9.27	2.7	5.2%
AFF	0.60	0.6	1.51	0.4	3.8%
<b>Total</b>	<b>99.37</b>	<b>100.0</b>	<b>349.14</b>	<b>100.0</b>	<b>5.2%</b>



Fuel	2015		2040		AAGR
	MTCO <sub>2</sub> e	% Shares	MTCO <sub>2</sub> e	% Shares	
Natural Gas	7.78	7.9	12.73	3.5	1.9%
Oil	46.38	46.7	126.09	36.1	4.1%
Coal	45.22	45.4	210.68	60.3	6.4%
<b>Total</b>	<b>99.37</b>	<b>100.0</b>	<b>349.14</b>	<b>100.0</b>	<b>5.1%</b>



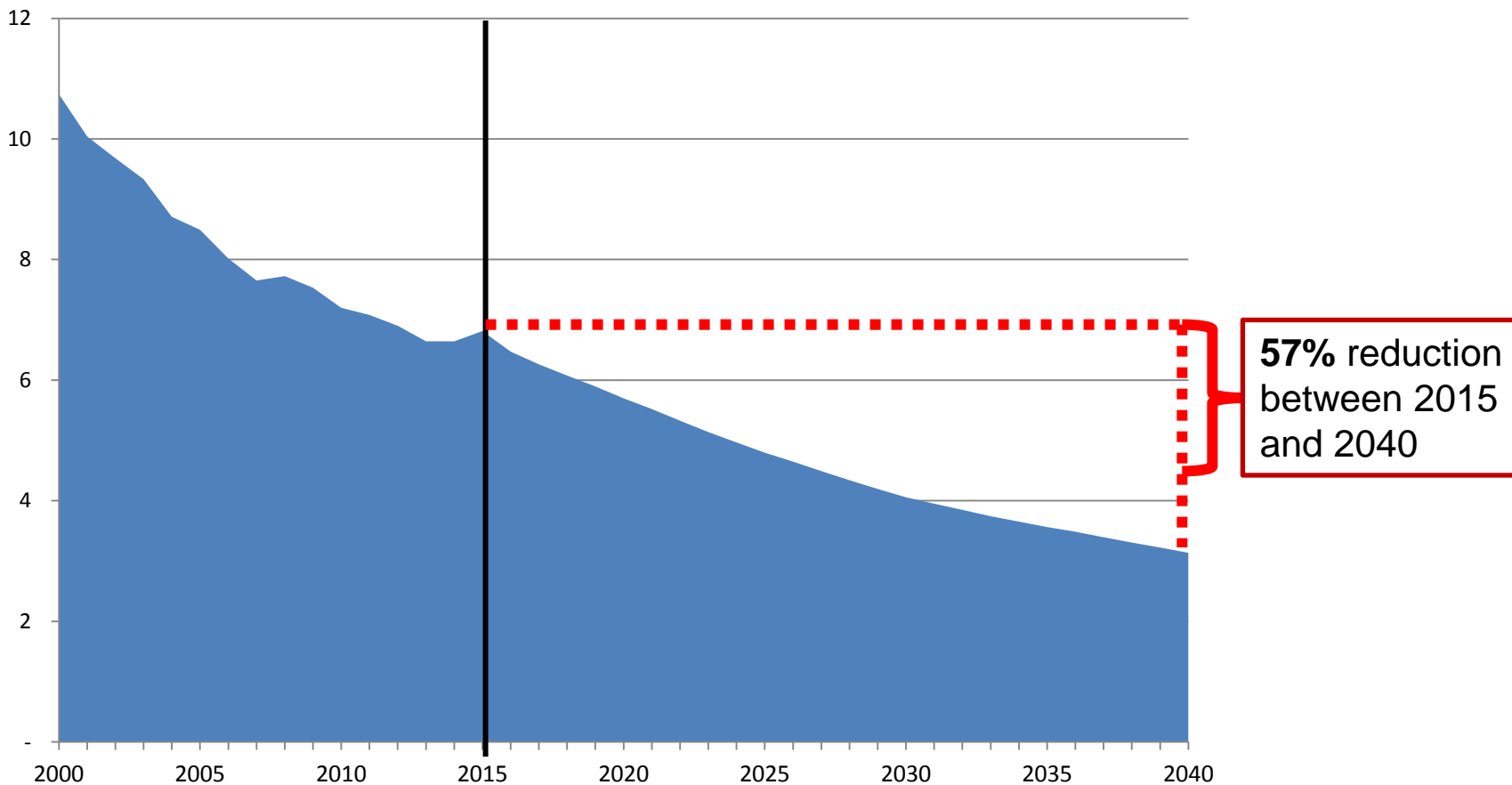
Note: Projections are preliminary (as of March 2017) subject to new sectoral targets and developments in the energy sector.





# SUPPLY AND DEMAND PROJECTION

## Energy Intensity (TOE/MPhp): 2000 - 2040



Note: Projections are preliminary (as of March 2017) subject to new sectoral targets and developments in the energy sector.



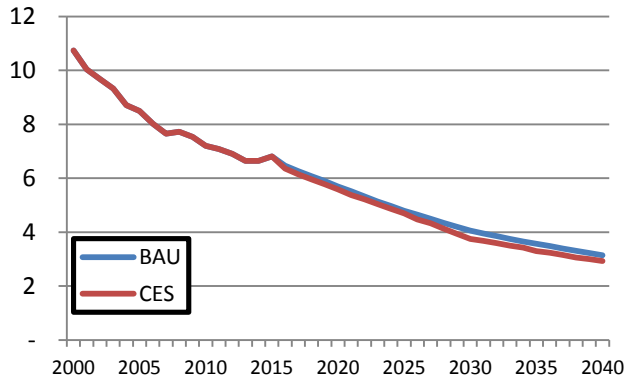
# SUPPLY AND DEMAND PROJECTION



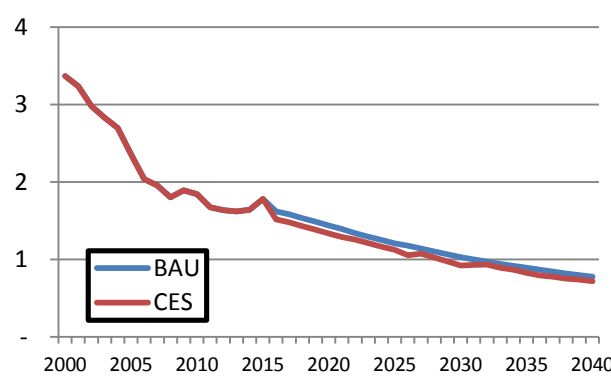
## Energy Indicators: 2000 to 2040

### Business as Usual (BAU) vs Clean Energy Scenario (CES)

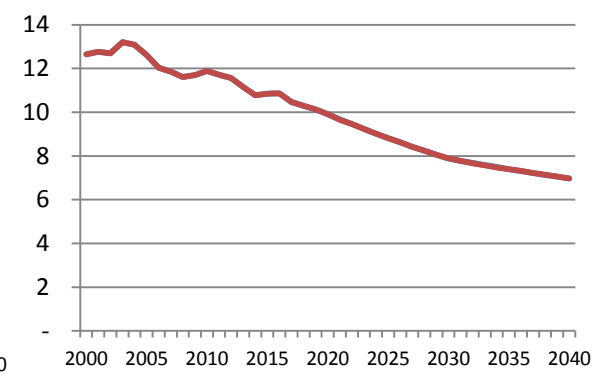
Energy Intensity (TOE/MPhp)



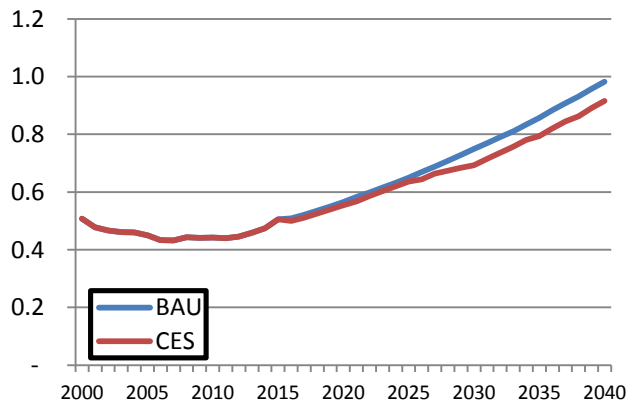
Oil Intensity (bbl/P100k)



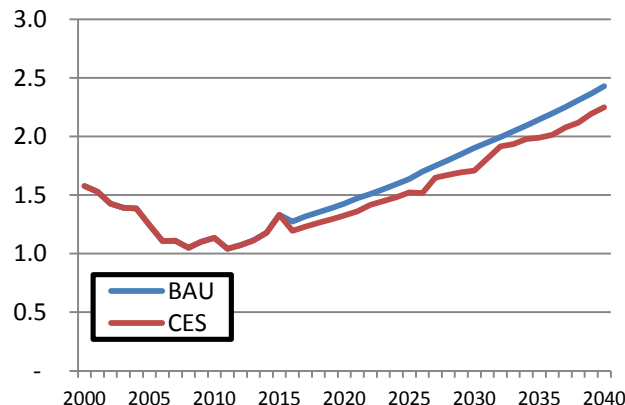
Electricity Intensity (Wh/Php)



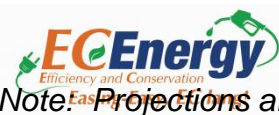
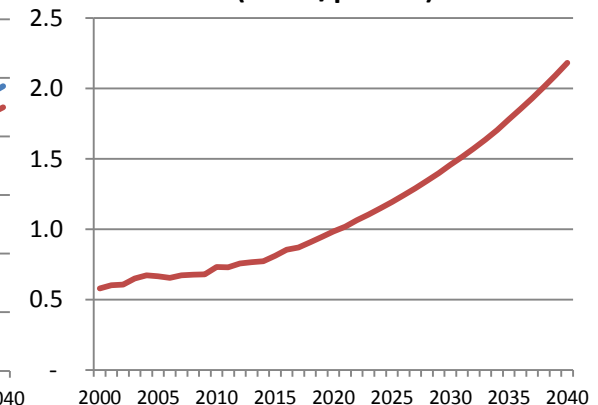
Energy Per Capita (TOE/person)



Oil Capita (bbl/person)



Electricity Per Capita (MWh/person)



Note: Same Total Power Generation for both BAU and CES

Note: Projections are preliminary (as of March 2017) subject to new sectoral targets and developments in the energy sector.

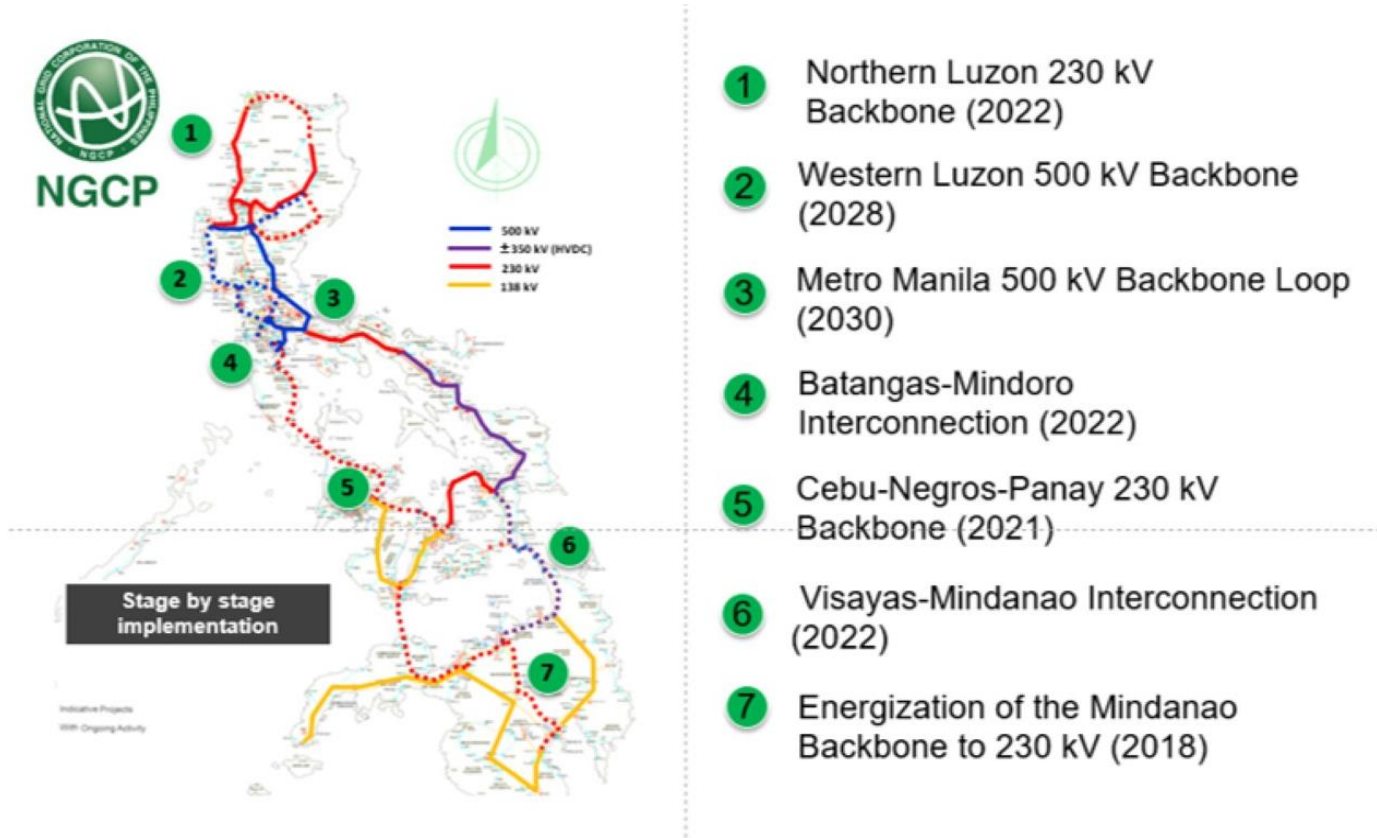


# INVESTMENT OPPORTUNITIES

## Power Sector



### TRANSMISSION MASTERPLAN





# INVESTMENT OPPORTUNITIES

## Power Sector



### Visayas – Mindanao Interconnection Project

Target Completion: April 2022



Eastern Route  
Hydrographic survey found unusually high risks for power cable installation

Western Route  
For conduct of hydrographic survey

Dec 2016









# INVESTMENT OPPORTUNITIES

## Coal Sector



Summary of Regional Coal Reserves (in Million Metric Tons)

<b>QUEZON</b>
Resource Potential - 2.00
In-situ Reserves - 0.09

<b>MINDORO</b>
Resource Potential - 100.00
In-situ Reserves - 1.44

<b>SEMIRARA</b>
Resource Potential - 570.00
In-situ Reserves - 112.32

<b>NEGROS</b>
Resource Potential - 4.50
In-situ Reserves - 2.01

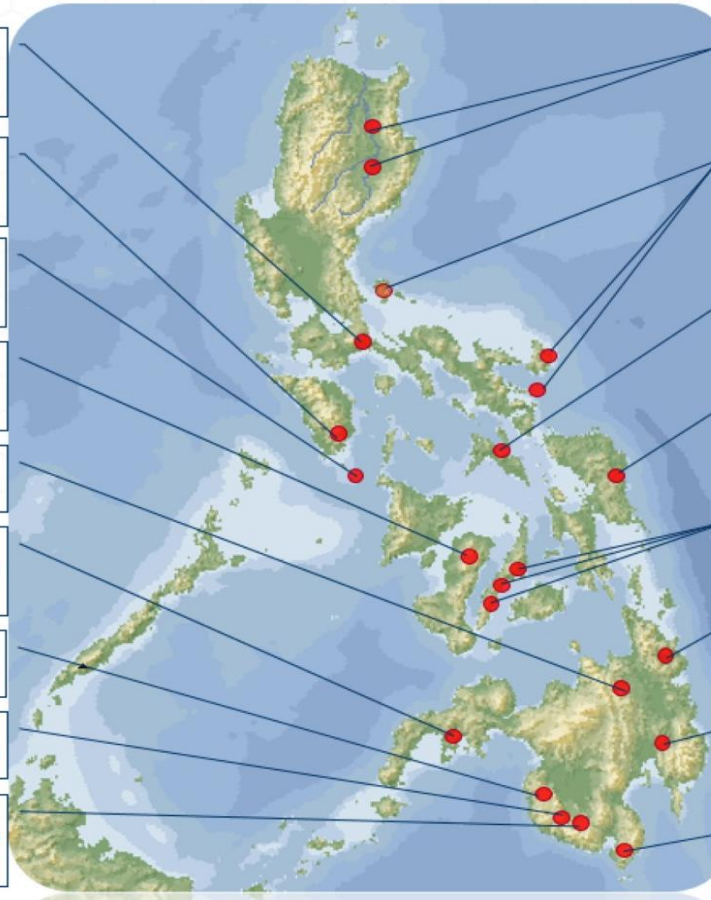
<b>BUKIDNON</b>
Resource Potential - 50.00

<b>ZAMBOANGA</b>
Resource Potential - 45.00
In-situ Reserves - 37.99

<b>MAGUINDANAO</b>
Resource Potential - 108.00

<b>SULTAN KUDARAT</b>
Resource Potential - 300.30

<b>SOUTH COTABATO</b>
Resource Potential - 230.40
In-situ Reserves - 81.07



<b>CAGAYAN VALLEY</b>
Resource Potential - 336.00
In-situ Reserves - 82.57

<b>BATAN-POLILLO-CATANDUANES</b>
Resource Potential - 17.00
In-situ Reserves - 6.02

<b>MASBATE</b>
Resource Potential - 2.50
In-situ Reserves - 0.08

<b>SAMAR</b>
Resource Potential - 27.00
In-situ Reserves - 8.59

<b>CEBU</b>
Resource Potential - 165.00
In-situ Reserves - 11.63

<b>SURIGAO</b>
Resource Potential - 209.00
In-situ Reserves - 69.55

<b>DAVAO</b>
Resource Potential - 100.00
In-situ Reserves - 0.21

<b>SARANGANI</b>
Resource Potential - 120.00





# INVESTMENT OPPORTUNITIES

## Coal Sector



### Coal Operating Contracts Exploration & Development

78 Active Coal Operating Contracts (COCs)

- 48 COCs in the Exploration Stage
- 30 COCs in the Development and Production Stage





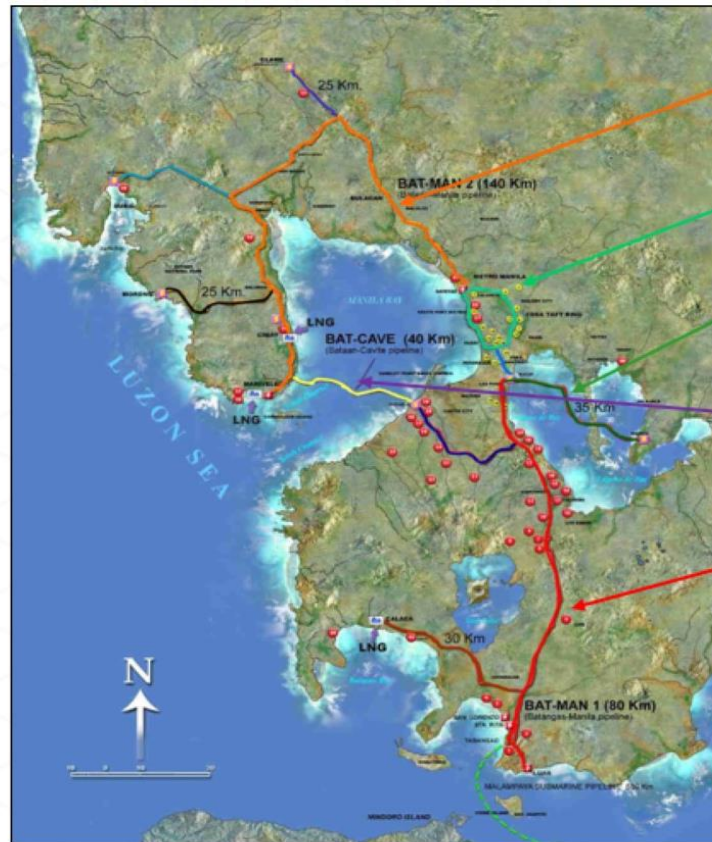
# INVESTMENT OPPORTUNITIES

## Natural Gas Sector



### Natural Gas Infrastructure

- Develop strategic infrastructure for receiving, storage, transmission and distribution
- Promote use of natural gas beyond power
- Serve as major alternative fuel for transport especially public transport



- BATMAN 2**  
(Bataan - Manila)  
140 kms. (2020)
- ET LOOP**  
(EDSA – Taft Loop)  
40 kms. (2020)
- SU-MA**  
(Sucat - Malaya)  
35 kms. (2017)
- BATCAVE**  
(Batangas – Cavite)  
40 kms (2022)
- BATMAN 1**  
(Batangas Manila)  
80-100 kms. (2015-17)



# INVESTMENT OPPORTUNITIES

## Renewable Energy Sector



### National Renewable Energy Program (NREP)

Renewable Energy Targets, 2011 -2030

Sector	Short Term	Medium Term	Long Term	Total
	2011-2015	2016-2020	2021-2030	
Geothermal	220 MW	1,100 MW	175 MW	1,495 MW
Hydropower	341.3 MW	3,161 MW	1,891.8 MW	5,394.1 MW
Biomass	276.7 MW	0	0	276.7 MW
Biofuels	<ul style="list-style-type: none"> <li>•DC on E10 in 2011</li> <li>•Mandatory E10 to all Gasoline by 2012</li> <li>•PNS for B5 by 2014</li> <li>•DC on B5 by 2015</li> <li>•Mandatory B5 to all Diesel by 2015</li> </ul>	<ul style="list-style-type: none"> <li>•PNS for B20 &amp; E85 by 2020</li> <li>•DC on B10 and E20 by 2020</li> </ul>	<ul style="list-style-type: none"> <li>•DC on B20 and E85 by 2025</li> </ul>	
Wind	200 MW	700 MW	1,445 MW	2,345 MW
Solar	50 MW	550 MW	200 MW	800 MW (Aspirational target 1,528 MW)
Ocean Power	0	35.5	35	70.5
<b>TOTAL</b>	<b>1,088 MW</b>	<b>5,546.5 MW</b>	<b>3,746.80 MW</b>	<b>10,381.3 MW</b>





# INVESTMENT OPPORTUNITIES

## Renewable Energy Sector



### Summary of Renewable Energy Projects (As of December 1, 2016)

#### AWARDED PROJECTS UNDER THE RE LAW

RESOURCES	AWARDED PROJECTS		POTENTIAL CAPACITY (MW)		INSTALLED CAPACITY (MW)	
	Grid-Use	Own-Use	Grid-Use	Own-Use	Grid-Use	Own-Use
Hydro Power	427	-	9,296.82	-	822.00	-
Ocean Energy	7	-	26.00	-	-	-
Geothermal	43	-	610.00	-	1,906.19	-
Wind	59	1	1,180.80	-	426.90	0.006
Solar	161	17	4,453.06	4.679	538.45	3.218
Biomass	44	22	335.88	3.12	295.07	140.66
Sub-Total	741	40	15,902.56	7.799	3,988.61	143.88
<b>TOTAL</b>	<b>781</b>		<b>15,910.36</b>		<b>4,132.49</b>	

Note: Including Projects Awarded under OCSP (7 HSCs with 416.3MW and 2 GCSs)

#### BIOFUELS REGISTRATION / ACCREDITATION

RESOURCES	AWARDED	REGISTERED CAPACITY (million liters/year)	COR (with Notice to Proceed)	REGISTERED CAPACITY (million liters/year)
Bioethanol	10	282.12	3	149.00
Biodiesel	11	584.9	2	90.00
<b>TOTAL</b>	<b>21</b>	<b>867.02</b>	<b>5</b>	<b>239.00</b>



# INVESTMENT OPPORTUNITIES

## Renewable Energy Sector



### Summary of Renewable Energy Projects (As of December 1, 2016)

#### PENDING APPLICATIONS UNDER THE RE LAW

RESOURCES	PENDING APPLICATIONS		POTENTIAL CAPACITY MW		INSTALLED CAPACITY MW	
	Grid-Use	Own-Use	Grid-Use	Own-Use	Grid-Use	Own-Use
Hydro Power	86	-	1,447.02			
Ocean Energy	-	-	-	-	-	-
Geothermal	3	-	60.00	-	-	-
Wind	24	-	260.00	-	-	-
Solar	181	1	1,893.00	0.39312	-	-
Biomass	14	2	157.70	8.00	-	-
Sub-Total	308	3	3,817.72	8.39	-	-
<b>TOTAL</b>	<b>311</b>		<b>3,826.11</b>		<b>0.00</b>	



# CHALLENGES IN POLICY FORMULATION



- ❑ Conflicting laws and policies, e.g. renewable energy law promotes the exploration of geothermal and hydro resources, while indigenous people rights law protects the ancestral lands of these people. Potential geothermal and hydro sources are located in ancestral areas.
- ❑ Investors lack of confidence to invest in energy business due to excessive regulatory requirements.



# CHALLENGES IN POLICY FORMULATION



- 
- Lack of political will in policy implementation.
  - Basically lack of necessary expertise in the field of energy, e.g., very few nuclear engineers and energy engineers.
  - Manpower shortage in the field of energy. Most Filipino engineers were employed abroad in pursuit of better financial considerations.
  - Lack of support from other government agencies
-





# CHALLENGES IN POLICY FORMULATION



- 
- Inadequate research and studies
  - Poor education in the area of energy conservation.
  - Shift in priority initiatives due to changes in political management
  - Conflicting demands/interests of energy stakeholders
-



# PRIORITY SUBJECTS OF STUDY



- Assessment of the Renewable Energy Law implementation in the Philippines
- Assessment of the 70, 20, 10 Policy for power generation
- Supporting Study for the National Position on Nuclear Power Option
- Strategic Framework on Disaster Rehabilitation and Recovery in the Power sector



# PRIORITY SUBJECTS OF STUDY

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- Public Policy to Institutionalized the Development of More Reliable Data on Energy Consumption
- Policy on Indigenous Coal



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# **Thank you!**

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