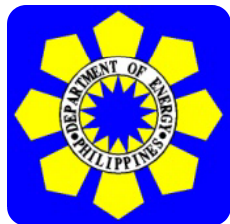


# INVESTMENT OPPORTUNITIES IN THE ENERGY SECTOR



Department of Energy



# INVESTMENT OPPORTUNITIES

**Power**

**Oil & Gas**

**Coal**

**Downstream Natural Gas**

**Downstream Oil**

**Alternative Fuels (for  
Transport)**

**Renewable Energy**



Power



# Summary of Power Outlook

GRID	Installed Capacity	Dependable Capacity	Committed Capacity	Indicative Capacity
LUZON	12,528	11,349	767.4	10,152.5
VISAYAS	2,448	2,103	429.6	718
MINDANAO	2,049	1,614	515	2,534.6
	<b>17,025</b>	<b>15,066</b>	<b>1,712</b>	<b>13,405.1</b>

# Power

## ❑ Power generation

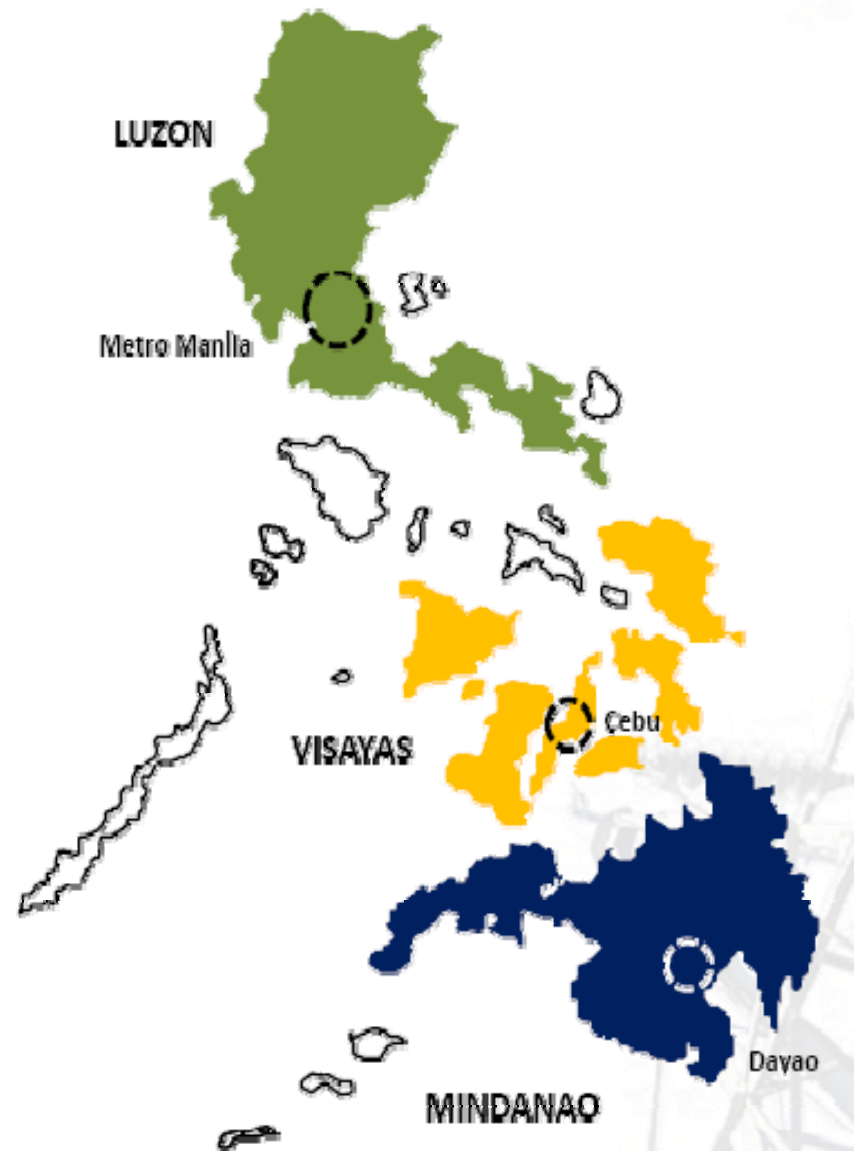
- Greenfield generation projects
- Possible joint venture with proponents of indicative projects

## ❑ Competitive power market

- Electricity trading in the Wholesale Electricity Spot Market

## ❑ Missionary electrification

- New Power Providers in the island grid or Qualified Third Party



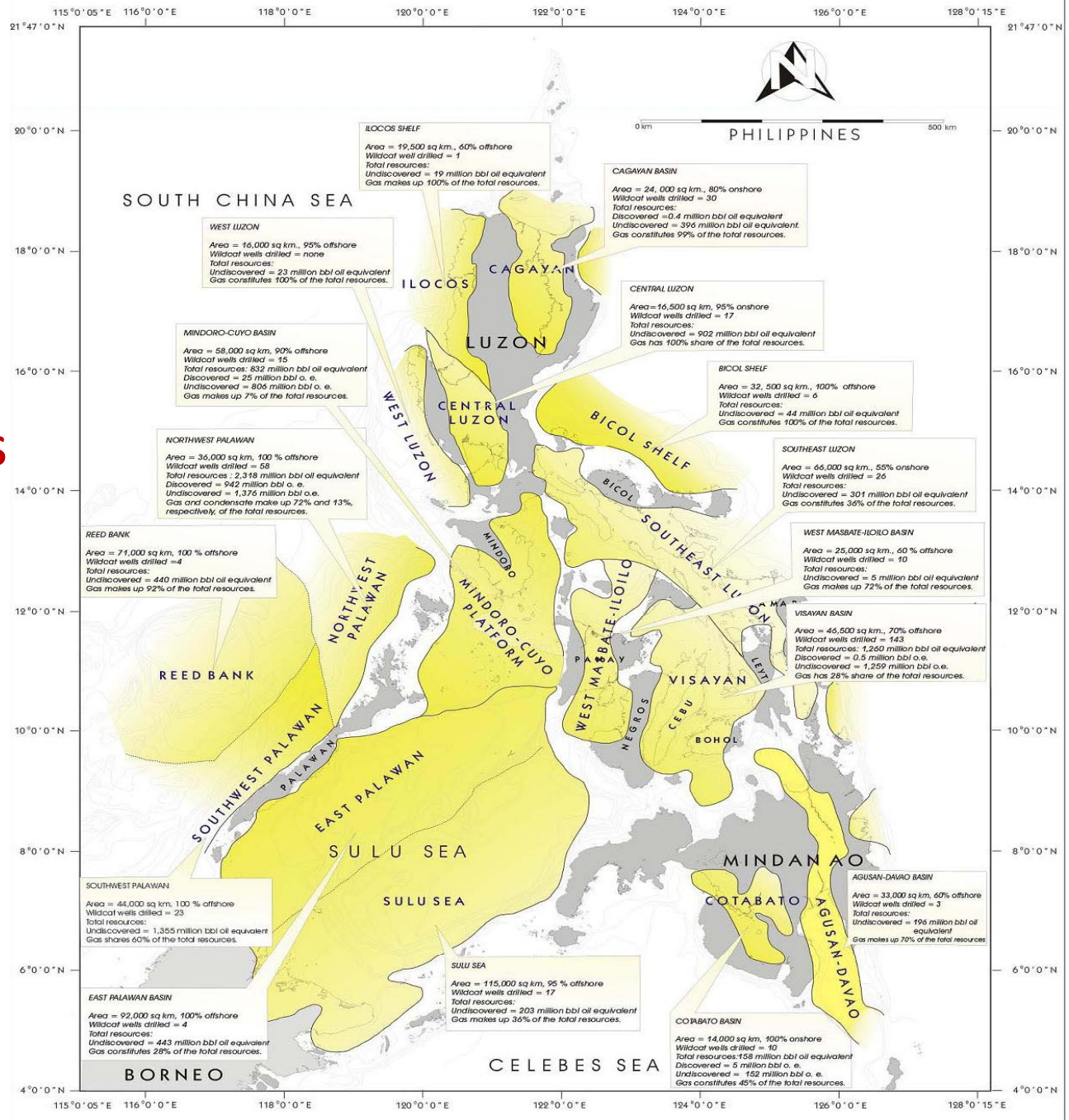
Note: Transparent Islands in the above diagram are not covered by NGCP's network.

OIL & GAS



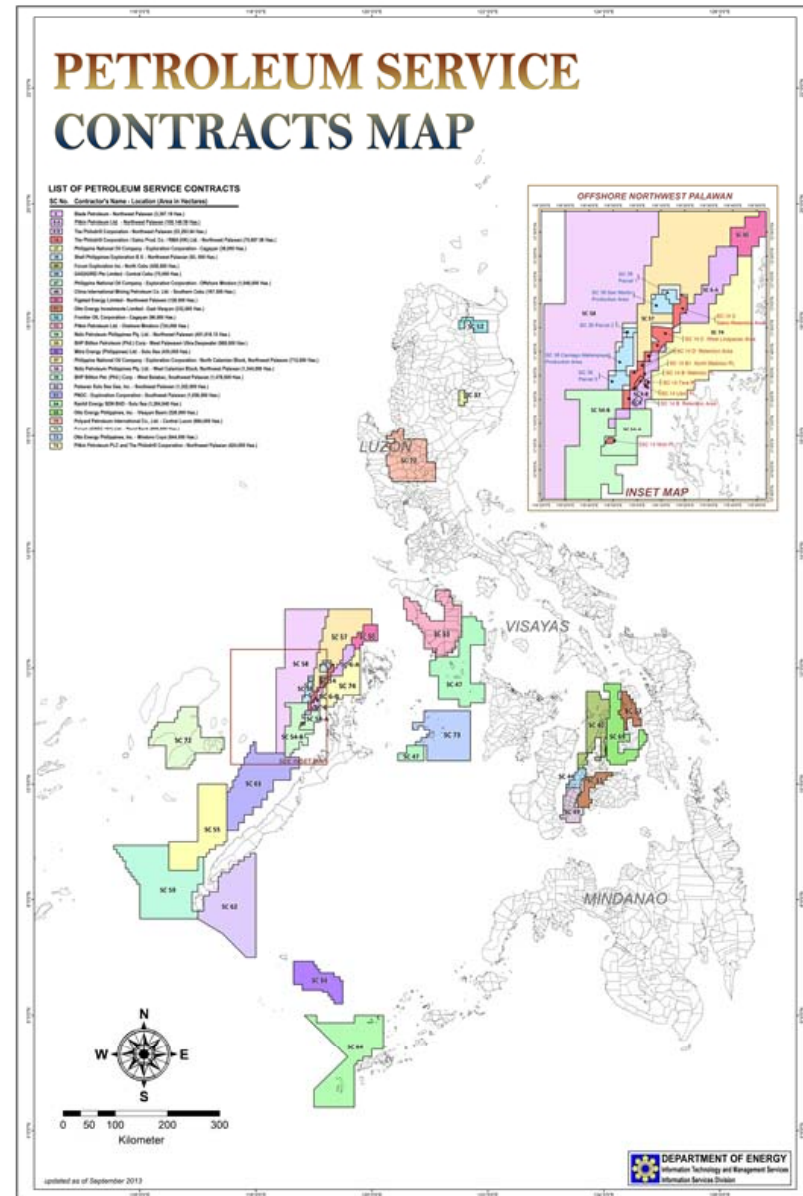
# Areas of Opportunity

There are **16** Sedimentary basins representing an area of over **700,000 sq km.**



# Upstream Oil & Gas Exploration

- There are 28 existing petroleum service contracts

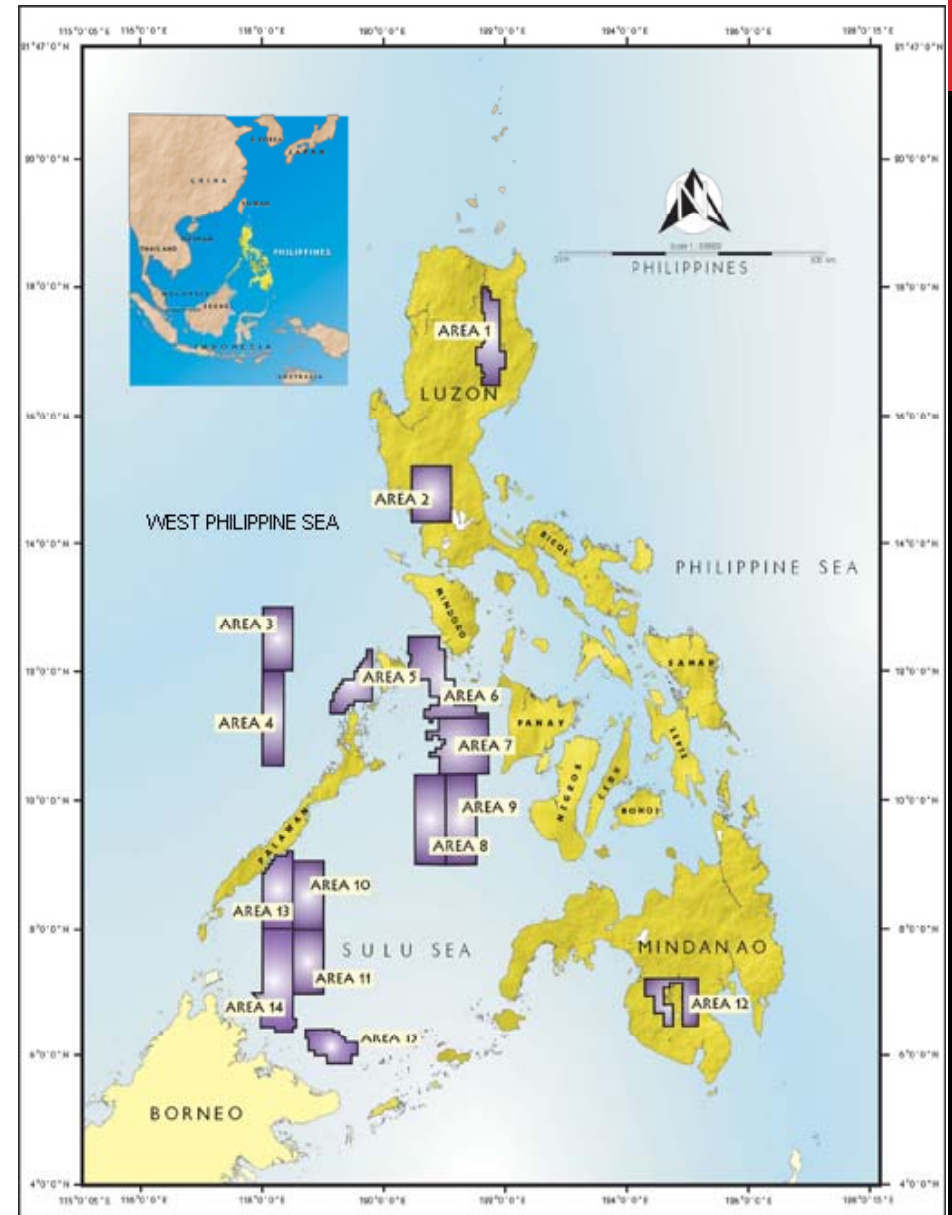


# Existing Petroleum Service Contracts

SC No.	Operator	Location	Area (hectares)
6	Blade Petroleum	NW Palawan	3,397.19
6A	Pitkin Petroleum Ltd.	NW Palawan	108,146.59
6B	The Philodrill Corp.	NW Palawan	53,293.95
14	The Philodrill Corp. / Galoc Production Co./ Pitkin Petroleum Ltd.	NW Palawan	70,887.52
37	Philippine National Oil Co. – Exploration Corp.	Cagayan	36,000.00
38	Shell Philippines Exploration B. V.	NW Palawan	83,000
40	Forum Exploration Inc.	North Cebu	458,000.00
44	Gas To Grid Pte. Ltd.	Central Cebu	75,000
47	Philippine National Oil Co. – Exploration Corp.	Offshore Mindoro	1,466,700
49	China International Mining Petroleum Co., Ltd.	South Cebu	265,000
50	Frigstad Energy	Calauit, NW Palawan	128,000
51	Otto Energy Investments Ltd.	East Visayan Basin	332,000
52	Frontier Oil Corp.	Piat San Jose, Cagayan	96,000
53	Pitkin Petroleum Ltd.	Onshore Mindoro	660,000
54	Nido Petroleum Phils. Pty. Ltd	NW Palawan	(Area A = 401,616.15 Area B = 312,000)
55	BHP Billiton Pet. (Phil.) Corp.	West Palawan Ultra-Deepwater	900,000
56	Mitra Energy Ltd.	Sulu Sea	430,000
57	Philippine National Oil Co. – Exploration Corp./ China National Offshore Oil Corp. Int'l	Calamian Block, NW Palawan	712,000
58	Nido Petroleum Phils. Pty. Ltd.	West Calamian Block, NW Palawan	1,344,000
59	BHP Billiton Petroleum (Phil.) Corp.	West Balabac, SW Palawan	1,476,000
63	Philippine National Oil Co. – Exploration Corp. / Nido Petroleum Phils. Pty. Ltd.	SW Palawan	1,056,000
69	OTTO Energy Phils. Inc.	Visayan Basin	704,000
70	Polyard Petroleum International Co. Ltd.	Central Luzon Basin	684,000
72	Forum (Gsec101) Ltd.	Reed Bank	1,063,000

# UPSTREAM OIL & GAS EXPLORATION

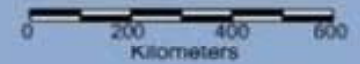
- Launched the Philippine Energy Contracting Round (PECR) 4 with 15 areas offered
- 3 petroleum contracts awarded and 1 endorsed to the Office of the President



COAL



# Coal Basins of the Philippines



South China Sea

Philippine Sea

Spratty Islands

Sulu Sea

Celebes Sea

Cagayan Valley

Luzon

Polillo - Batan - Catanduanes

Mindoro

Masbate

Semirara

Visayas

Samar - Leyte

Negros

Cebu

Suligao

Zamboanga

Mindanao

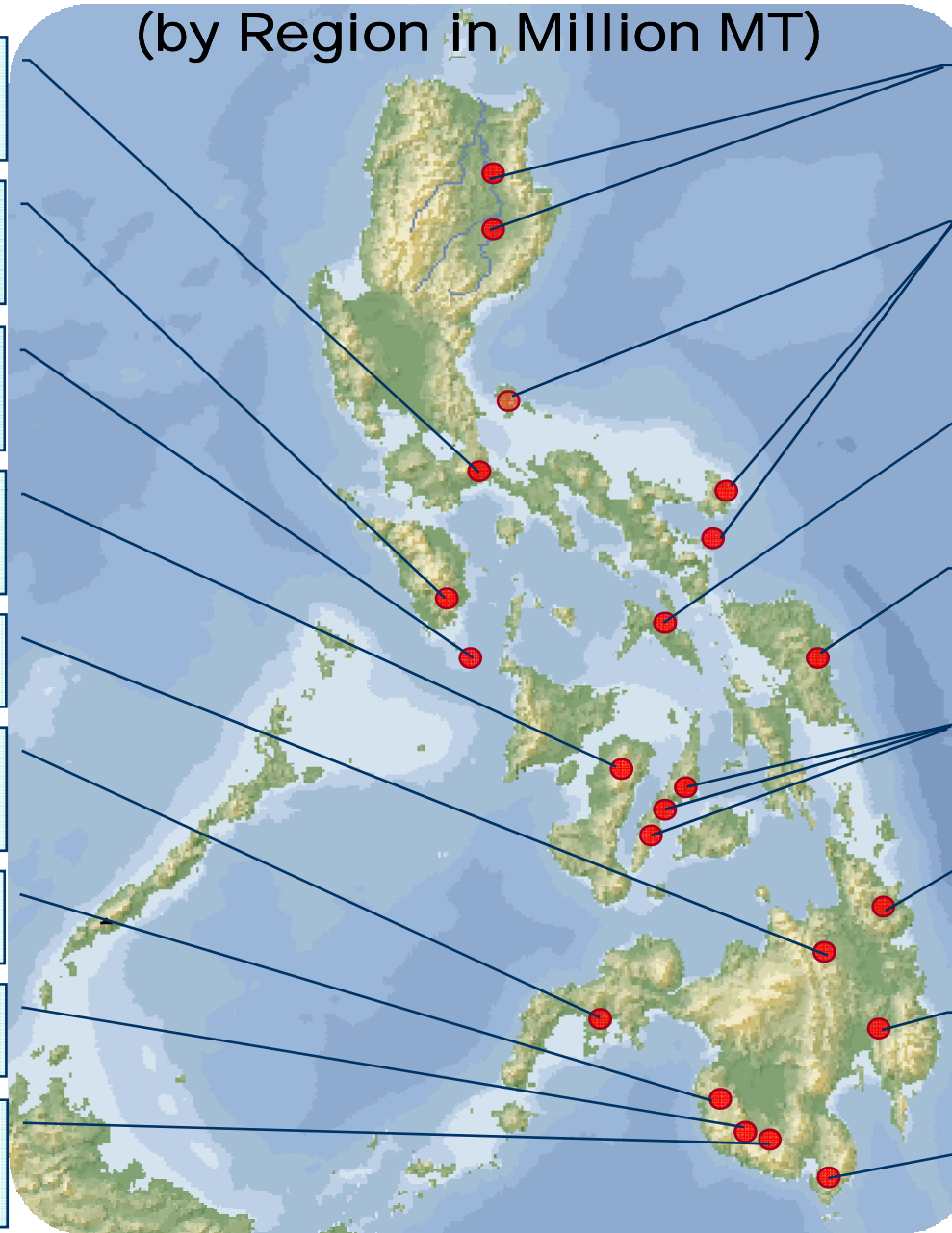
Cotabato - Sarangani

Davao

Source: Geothermal & Coal Reserves Development Division  
Prepared by: Anal R. Rasdas

# 2011 Coal Reserves

(by Region in Million MT)



<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 - 127.57

<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 - 81.06

<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 - 6.03

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

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

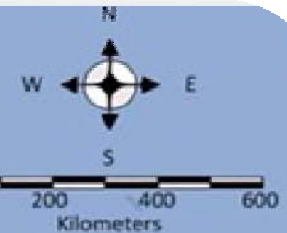
<b>CEBU</b>
Resource Potential - 165.00
In-situ Reserves - 11.63

<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

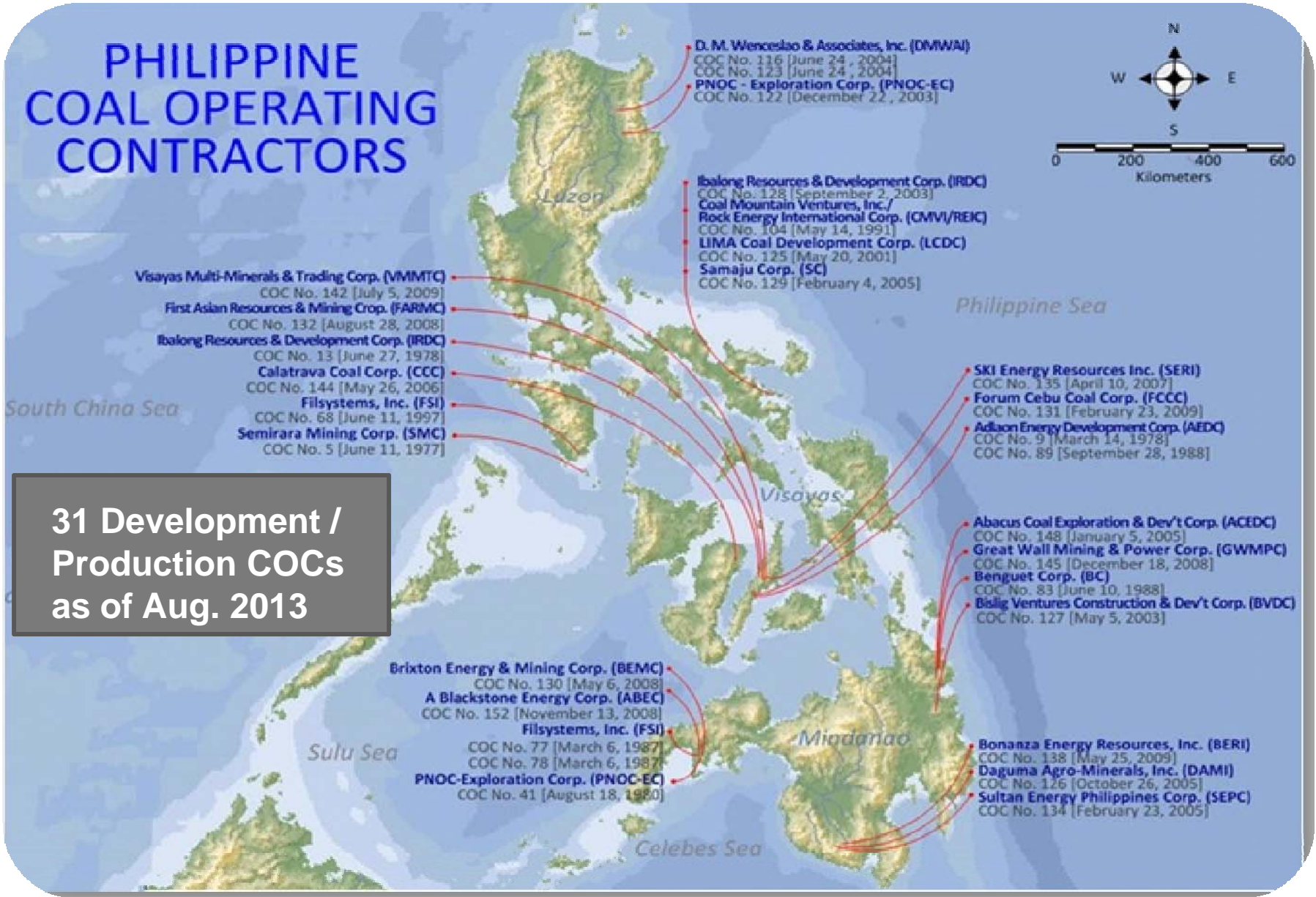
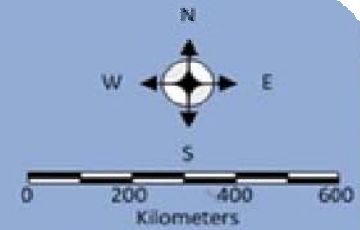
# PHILIPPINE COAL OPERATING CONTRACTORS



- **PNOC - Exploration Corp. (PNOC-EC)**  
COC No. 141 [July 5, 2005]
  - **Aragorn Coal Resources, Inc. (ACRI)**  
COC No. 146 [January 5, 2007]
  - **LIMA Coal Development Corp. (LCDC)**  
COC No. 153 [April 1, 2009]
  - **Blackgem Resources & Energy, Inc. (BREI)**  
COC No. 174 [December 14, 2011]
- 
- **Lebach Mining Corp. (LMC)**  
COC No. 157 [September 16, 2009]
  - **Aragorn Coal Resources, Inc. (ACRI)**  
COC No. 147 [January 5, 2007]
  - **3 Kings Sunrise Mining Corp. (3KSMC)**  
COC No. 165 [September 16, 2009]
  - **BBB Mining & Energy Corp. (BMEC)**  
COC No. 173 [December 14, 2011]
  - **SKI Energy Resources Inc. (SERI)**  
COC No. 179 [December 14, 2011]
  - **COC No. 136 [May 26, 2010]**
  - **COC No. 180 [December 14, 2011]**
- 
- **Timberwolves Resources, Inc. (TRI)**  
COC No. 181 [December 14, 2011]
  - **PNOC - Exploration Corp. (PNOC-EC)**  
COC No. 140 [July 5, 2005]
  - **ASK Mining & Energy Corp. (ASKMEC)**  
COC No. 162 [September 16, 2009]
  - **Goodyield Resources Development, Inc.**  
COC No. 176 [December 14, 2011]
  - **E-Oil & Gas Company, Inc. (EOGC)**  
COC No. 160 [September 16, 2009]
  - **D.M. Construc'n Eqp't. Resources, Inc. (DMC-CERI)**  
COC No. 154 [April 1, 2009]
  - **Titan Mining & Energy Corp. (TMEC)**  
COC No. 159 [September 16, 2009]
  - **Blackgem Resources & Energy, Inc. (BREI)**  
COC No. 169 [September 18, 2009]
  - **COC No. 175 [December 14, 2011]**
  - **MSSK Coal Corp. (MSSKCC)**  
COC No. 163 [September 16, 2009]
  - **COC No. 164 [September 16, 2009]**
  - **Dell Eqp't. & Construction Corp. (DECC)**  
COC No. 170 [November 18, 2009]
- 
- **Guidance Management Corp. (GMC)**  
COC No. 151 [August 28, 2008]
  - **Cedaphil Mining Corp. (CMC)**  
COC No. 171 [March 24, 2010]
  - **Core8 Mining Corp. (C8MC)**  
COC No. 172 [March 24, 2010]
  - **Guidance Management Corp. (GMC)**  
COC No. 150 [August 28, 2008]
- 
- **Titan Mining & Energy Corp. (TMEC)**  
COC No. 166 [November 18, 2009]
  - **COC No. 167 [November 18, 2009]**
  - **COC No. 168 [November 18, 2009]**
  - **COC No. 158 [November 18, 2009]**
  - **Gdeal Mineral Resources Co., Inc. (GMRCI)**  
COC No. 177 [December 14, 2011]
  - **Kwangming Mineral Co., Inc. (KMCI)**  
COC No. 177 [December 14, 2011]

40 Exploration  
COCs as of Aug.  
2013

# PHILIPPINE COAL OPERATING CONTRACTORS



**D. M. Wenceslao & Associates, Inc. (DMWAI)**  
 COC No. 116 [June 24, 2004]  
 COC No. 123 [June 24, 2004]  
**PNOC - Exploration Corp. (PNOC-EC)**  
 COC No. 122 [December 22, 2003]

**Ibalong Resources & Development Corp. (IRDC)**  
 COC No. 128 [September 2, 2003]  
**Coal Mountain Ventures, Inc./  
 Rock Energy International Corp. (GMV/REIC)**  
 COC No. 104 [May 14, 1991]  
**LIMA Coal Development Corp. (LCDC)**  
 COC No. 125 [May 20, 2001]  
**Samaju Corp. (SC)**  
 COC No. 129 [February 4, 2005]

**Visayas Multi-Minerals & Trading Corp. (VMMTC)**  
 COC No. 142 [July 5, 2009]  
**First Asian Resources & Mining Corp. (FARMC)**  
 COC No. 132 [August 28, 2008]  
**Ibalong Resources & Development Corp. (IRDC)**  
 COC No. 13 [June 27, 1978]  
**Calatrava Coal Corp. (CCC)**  
 COC No. 144 [May 26, 2006]  
**Filsystems, Inc. (FSI)**  
 COC No. 68 [June 11, 1997]  
**Semirara Mining Corp. (SMC)**  
 COC No. 5 [June 11, 1977]

**SKI Energy Resources Inc. (SERI)**  
 COC No. 135 [April 10, 2007]  
**Forum Cebu Coal Corp. (FCCC)**  
 COC No. 131 [February 23, 2009]  
**Adlaon Energy Development Corp. (AEDC)**  
 COC No. 9 [March 14, 1978]  
 COC No. 89 [September 28, 1988]

**Abacus Coal Exploration & Dev't Corp. (ACEDC)**  
 COC No. 148 [January 5, 2005]  
**Great Wall Mining & Power Corp. (GWMPC)**  
 COC No. 145 [December 18, 2008]  
**Benguet Corp. (BC)**  
 COC No. 83 [June 10, 1988]  
**Bellig Ventures Construction & Dev't Corp. (BVDC)**  
 COC No. 127 [May 5, 2003]

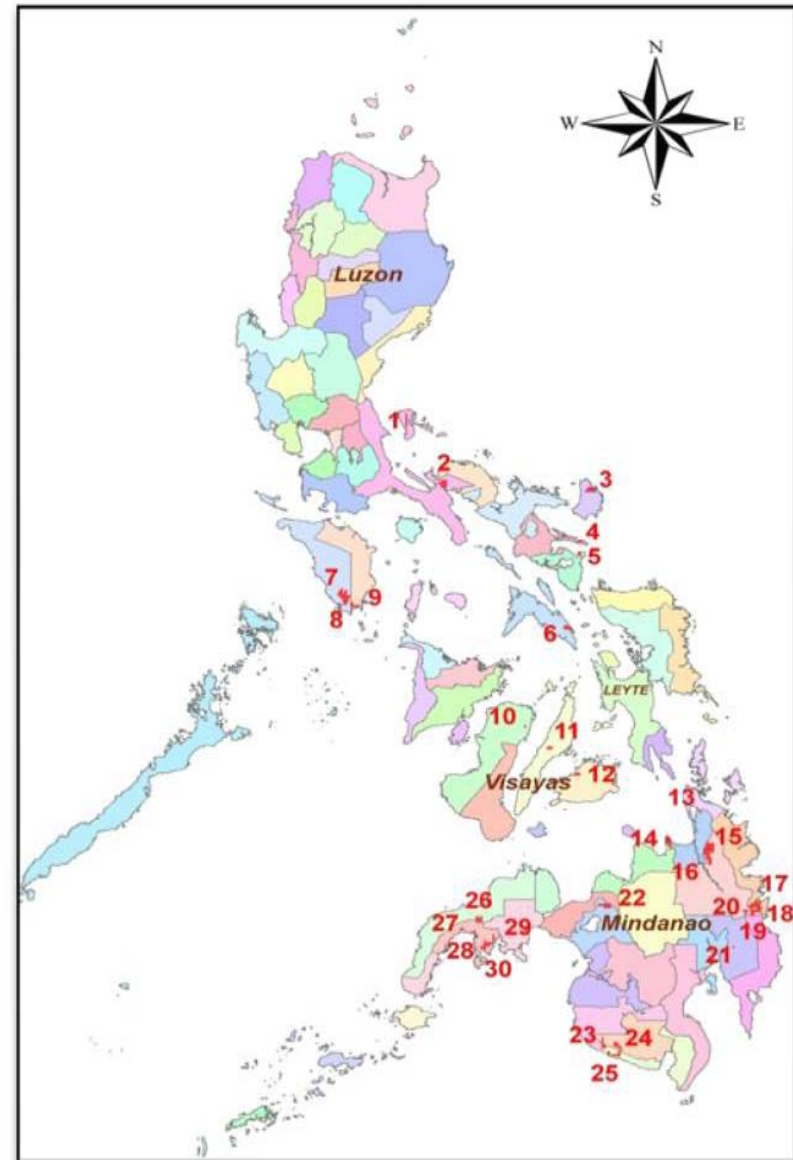
**Brixton Energy & Mining Corp. (BEMC)**  
 COC No. 130 [May 6, 2008]  
**A Blackstone Energy Corp. (ABEC)**  
 COC No. 152 [November 13, 2008]  
**Filsystems, Inc. (FSI)**  
 COC No. 77 [March 6, 1987]  
 COC No. 78 [March 6, 1987]  
**PNOC-Exploration Corp. (PNOC-EC)**  
 COC No. 41 [August 18, 1980]

**Bonanza Energy Resources, Inc. (BERI)**  
 COC No. 138 [May 25, 2009]  
**Dagama Agro-Minerals, Inc. (DAMI)**  
 COC No. 126 [October 26, 2005]  
**Sultan Energy Philippines Corp. (SEPC)**  
 COC No. 134 [February 23, 2005]

**31 Development /  
 Production COCs  
 as of Aug. 2013**

# Coal Exploration

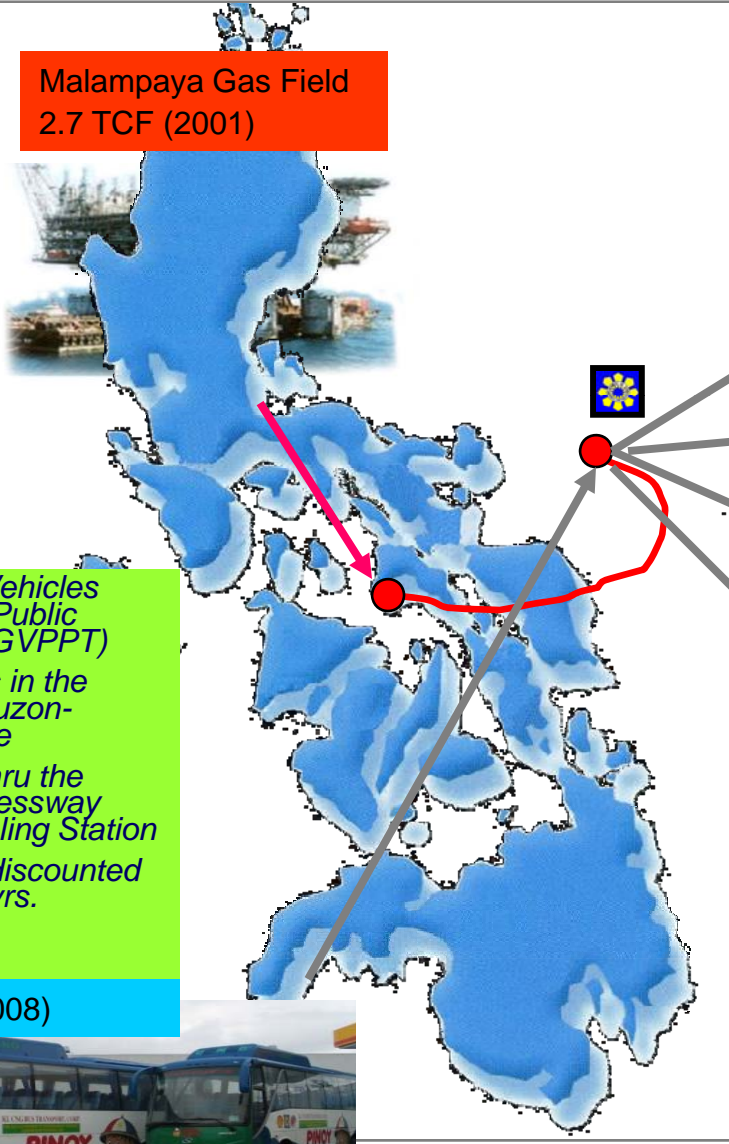
- PECR 4 for Coal was launched on 01 Dec. 2011 with 30 coal areas offered.
- 69 applications were received from 28 companies during the opening of bids on 30 March 2012. (This was a record in the history of PECR for Coal).
- Of the 69 applications, only 57 were accepted for complying with all required financial and technical documents.
- 11 coal operating contracts awarded



# Natural Gas



# Natural Gas Industry



Malampaya Gas Field  
2.7 TCF (2001)

Natural Gas Vehicles Program for Public Transport (NGVPPT)

- 200 buses in the Southern Luzon-Manila route
- serviced thru the South Expressway NGV Refueling Station
- at a fixed/discounted price for 7 yrs.



560 MW San Lorenzo First Gen IPP



1,000 MW Sta. Rita First Gen/ IPP

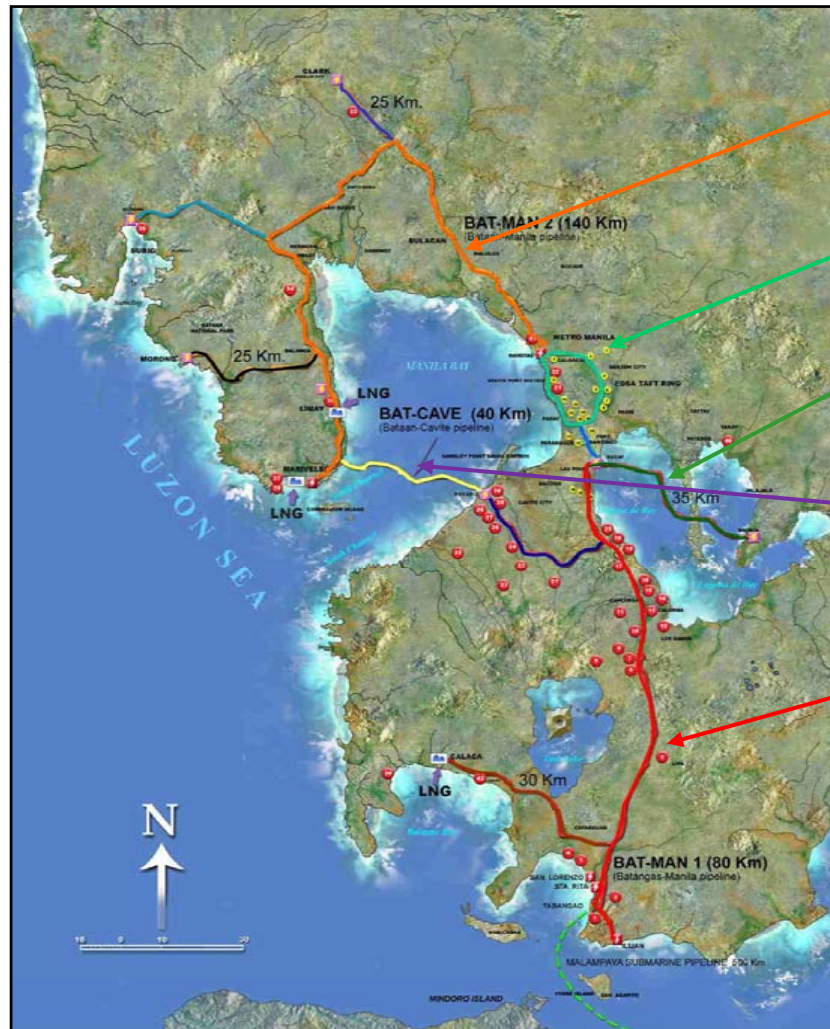


1,200 MW Ilijan Power Plant NPC IPP(KEPCO)



# NATURAL GAS

- 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
- Currently, updating the Masterplan on Natural Gas



**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)

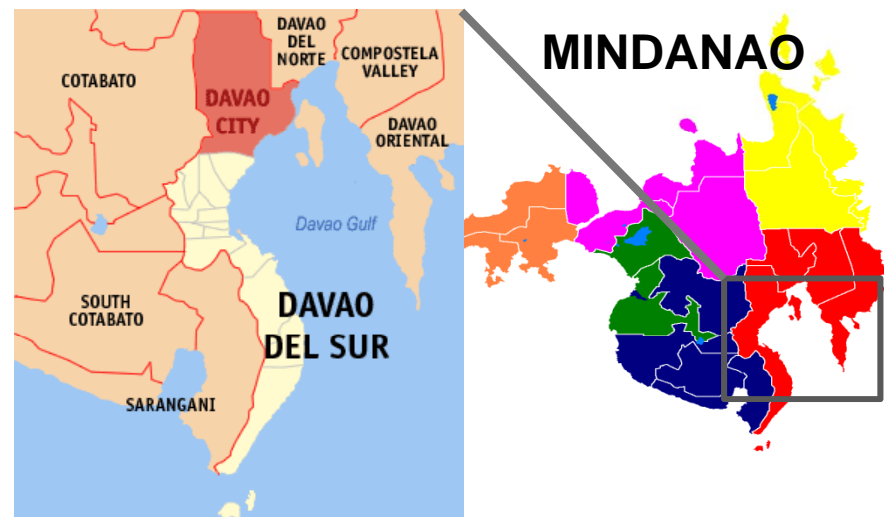
**BATMAN 1**  
(Batangas Manila)  
80-100 kms. (2015-17)

# NATURAL GAS - LNG TERMINALS

Conduct a Master Plan on LNG

- to validate LNG terminals in Luzon and Mindanao

LNG Terminal Candidates in Batangas



# Renewable Energy



# RENEWABLE ENERGY – FIT RATES & INSTALLATION TARGETS

Resource / Technology	ERC Approved Feed-in Tariff Rates (PhP/kWh)	ERC Approved Feed-in Tariff Rates (US\$/kWh)	Installation Targets
Run-of-River Hydropower	5.9	0.140	250
Biomass Energy	6.63	0.158	250
Wind Power	8.53	0.203	200
Solar Power	9.68	0.230	50
Ocean Energy	-		10
<b>TOTAL</b>			<b>760</b>

- FIT Rules approved by ERC on 12 July 2010 and took effect on 12 August 2010
- ERC approved the FIT Rates on 27 July 2012
- Issuance of DC 2013-05-009 prescribing DOE Guidelines for the Selection Process of Renewable Energy Projects Under FIT System and the Award of Certificate for FIT Eligibility

# RENEWABLE ENERGY SERVICE CONTRACTS

Resource	Awarded Projects		Potential Capacity (MW)			Installed Capacity (MW)		
	Grid-Use	Own-Use	No. of Projects	Grid-Use	Own-Use	No. of Projects	Grid-Use	Own-Use
Hydro	177	1	153	2,668.90	1.50	25	131.22	
Ocean	3		3	5.00				
Geothermal	39		29	870.00		10	1,847.69	
Wind	37	1	38	1,753.50	0.006		33.00	
Solar	34	3	37	482.706	0.614			
Biomass	25	23	15	81.60	32.80	33	146.35	172.18
<b>Sub-total</b>	<b>315</b>	<b>28</b>	<b>275</b>	<b>5,861.706</b>	<b>34.92</b>	<b>68</b>	<b>2,158.26</b>	<b>172.18</b>
<b>TOTAL</b>	<b>343</b>		<b>275</b>	<b>5,683.041</b>		<b>68</b>	<b>2,330.44</b>	
<b>TOTAL RENEWABLE ENERGY CAPACITY</b>					<b>8,013.481 MW</b>			

As of 30 August 2013



# Renewable Energy Development

## *FIT Monitoring Board Summary (as of August 2013)*

RESOURCE	FOR CONVERSION		WITH CERTIFICATE OF CONFIRMATION OF COMMERCIALITY	
	NO. OF PROJECTS	CAPACITY (MW)	NO. OF PROJECTS	CAPACITY (MW)
HYDRO	51	501.0	12	136.6
WIND	12	669.5	5	339.5
SOLAR	11	160	3	80
BIOMASS	10	77.8	1	1.1
<b>TOTAL</b>	<b>81</b>	<b>1,289.4</b>	<b>15</b>	<b>468.2</b>

Note:

- Department Circular No. 2009-07-0011 entitled “Guidelines governing a transparent and competitive system of awarding renewable energy service/operating contracts and providing for the registration process or RE developers” is currently being revisited to facilitate the processing of RE Applications.
- Target date of completion of 249 pending RE applications is on November 2013

# Downstream Oil



# Downstream Oil

- **Area / Regional Depots**
- **Service / Refilling Stations**
- **LPG Refilling Stations**
- **Distribution Pipelines**



# Alternative Fuels



# COMPRESSED NATURAL GAS

	Particulars
CNG	<ul style="list-style-type: none"><li>▪ 41 CNG fed buses commercially operating along Batangas-Laguna-Manila route</li><li>▪ 6 Certificates of Accreditation issued CNG Bus Operators (KL CNG, RRCG, BBL, HM Transport, N. dela Rosa Liner and Greenstar Express)</li><li>▪ 2 Certificates of Authority to Import 10 CNG Buses each issued for RRCG and N. dela Rosa Liner</li></ul>



Targets: 15,000 units CNG buses; 16,000 units CNG taxis by 2030; 150 refilling stations nationwide

# AUTO-LPG

## Particulars

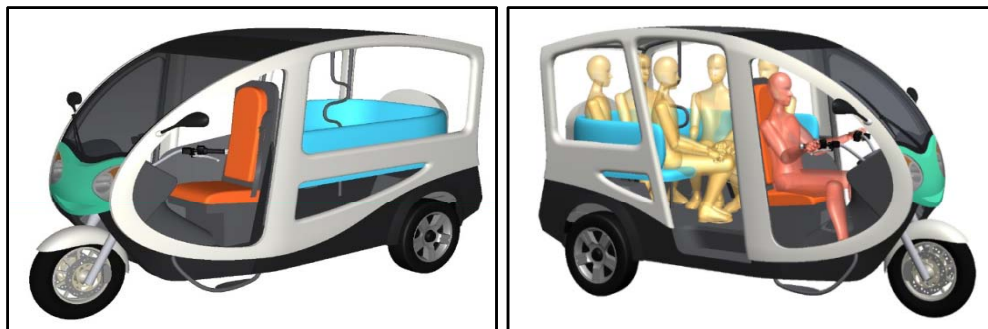
- Auto-LPG
  - 17,500 units of taxis converted to LPG as of end-2010
  - 19,052 units of taxis converted to LPG as of end-2011
  - 31 LPG conversion shops
  - 222 auto-LPG refilling stations available nationwide

Area/ Region	Public Stations	Garage Based	Bulk Suppliers
Metro Manila	102	35	0
Luzon	6	2	4
Visayas	26	20	1
Mindanao	16	9	1
Total	150	66	6



# E-VEHICLES

- 523 existing electric vehicles
- Target: 100,000 e-trikes nationwide through a loan Agreement between the Philippine Government through Department of Finance and the Asian Development Bank
- First batch: 3,000 e-trikes



Thank You!

Energy Investment Forum in Mindanao  
September 25, 2013





## Contact Details:

**Investment Promotion Office (IPO)  
Merritt Road, Fort Bonifacio  
Taguig City, Metro Manila  
Philippines**

**Trunkline : (+632) 479-2900 locals 371 and 389**

**Telefax No. : (+632) 840-2255**

**E-mail address : [doe\\_ipo@doe.gov.ph](mailto:doe_ipo@doe.gov.ph);  
[doe\\_ipo@yahoo.com](mailto:doe_ipo@yahoo.com)**