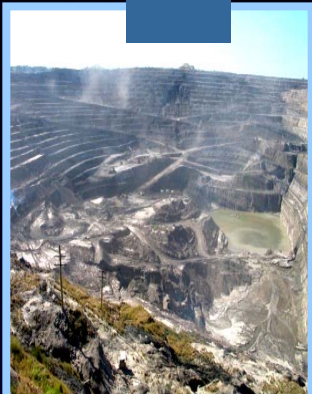


PUBLIC CONSULTATION SERIES FOR THE PHILIPPINE ENERGY PLAN (PEP) 2008-2030

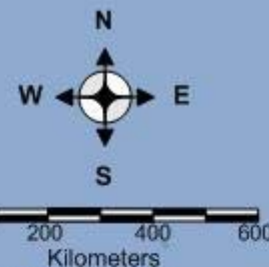


COAL, OIL & GAS and GEOTHERMAL

ALEJANDRO F. OANES
OIC – Geothermal and Coal Division
Energy Resource Development Bureau



PHILIPPINE COAL OPERATING CONTRACTORS



South China Sea

Spratly Islands

Sulu Sea

Celebes Sea

Philippine Sea

Filsystems, Inc.

D/P COC No. 78 [June 11, 1997]

D/P COC No. 93 [February 2, 1989]

Semirara Coal Corporation

D/P COC No. 5 [June 11, 1977]

Calatrava Coal Corporation

Explo COC No. 144 [May 25, 2006]

Forum Exploration, Inc.

Explo COC No. 132 [February 23, 2005]

Visayas Multi-Minerals & Trading Corporation

Explo COC No. 142 [July 5, 2005]

MG Mining & Energy Corporation

Explo COC No. 133 [February 23, 2005]

Ibalong Resources & Development Corp.

D/P COC No. 13 [June 27, 1978]

Forum Exploration, Inc.

Explo COC No. 131 [February 23, 2005]

Philippine National Oil Company

**Taiwan Overseas Mining Corporation
(PNOC-TOMC)**

D/P COC No. 41 [August 14, 1980]

Ulyssis International Corporation

Explo No. 139 [May 26, 2005]

Brixton Energy & Mining Corporation

Explo No. 130 [February 23, 2005]

Filsystems, Inc.

D/P COC No. 69 [July 11, 1984]

D. M. Wenceslao & Associates, Inc.

D/P COC No. 123 [June 24, 2004]

Philippine National Oil Company -

Exploration Corporation

Explo COC No. 141 [July 5, 2005]

Philippine National Oil Company -

Exploration Corporation

D/P COC No. 122 [December 23, 1998]

Aragorn Coal Resources, Inc.

Explo COC No. 145 [November 17, 2006]

Monte Oro Resources & Energy, Inc.

Explo COC No. 137 [November 8, 2005]

Coal Mountain Ventures, Inc./Rock Energy

D/P COC No. 104 [May 14, 1991]

Ibalong Resources & Development Corporation

D/P COC No. 126 [September 2, 2003]

LIMA Coal Development Corporation

D/P COC No. 125 [May 29, 2001]

SAMAJU Corporation

D/P COC No. 129 [February 4, 2005]

Rock Energy International Corporation

Explo COC No. 137 [May 26, 2005]

Aragorn Coal Resources, Inc.

Explo COC No. 147 [January 5, 2007]

Industrial Enterprises, Inc.

D/P COC No. 92 [October 14, 1988]

SKI Construction Group, Inc.

Explo COC No. 136 [May 26, 2005]

Adlaon Energy Development Corporation

D/P COC No. 13 [June 27, 1978]

Adlaon Energy Development Corporation/

International Industrial Management &

Development Corporation (INIMACO)

D/P COC No. 9 [March 14, 1978]

Philippine National Oil Company -

Exploration Corporation

Explo COC No. 140 [July 5, 2005]

Abacus Consolidated Resources &

Holdings, Inc. (ACRHI)

Explo COC No. 148 [January 10, 2007]

Caraga Energy & Minerals

Resources Dev't. Corp.

Explo COC No. 145 [November 17, 2006]

MG Mining & Energy Corporation

D/P COC No. 27 [May 5, 2003]

Daguma Agro-Minerals, Inc.

Explo COC No. 126 [November 19, 2002]

MG Mining & Energy Corporation

Explo COC No. 134 [February 23, 2005]

Bonanza Energy Resources, Inc.

Explo COC No. 138 [May 26, 2005]

SMALL-SCALE COAL MINE PERMITTEES



0 200 400 600
Kilometers



COAL POTENTIAL AND RESERVE ESTIMATE (MT)

Coal Basin	Resource Potential	Positive Reserves	Probable Reserves	In-situ Reserves	Mineable Reserves
Cagayan Valley	336,000,000	80,104,730	3,695,000	82,568,063	70,182,854
<i>Cebu [Central]</i>	<i>40,000,000</i>	<i>4,697,557</i>	<i>6,500,267</i>	<i>9,031,069</i>	<i>6,420,579</i>
Cebu [North]	75,000,000	2,229,719	655,727	2,666,870	1,600,122
Cebu [South]	50,000,000	1,295,113	1,870,206	2,541,917	1,525,150
Davao	100,000,000	208,000		208,000	124,800
Masbate	2,500,000	74,994		74,994	44,996
Mindoro	100,000,000	1,310,641	198,000	1,442,641	865,585
Negros	4,500,000	1,204,952	1,213,387	2,013,877	1,208,326
Polillo, Batan, & Catanduanes	17,000,000	5,122,747	1,604,675	6,182,277	3,709,366
Quezon	2,000,000	93,000		93,000	55,800
Samar	27,000,000	7,474,890	1,667,725	8,586,707	7,278,807
Semirara	550,000,000	124,379,660	43,820,358	153,593,232	130,554,247
Surigao	209,000,000	29,298,653	60,978,034	69,950,676	47,799,580
<i>Zamboanga</i>	<i>45,000,000</i>	<i>36,762,598</i>	<i>6,778,835</i>	<i>41,546,540</i>	<i>24,927,924</i>
Bukidnon	50,000,000				
Maguindanao	108,000,000				
Sarangani	120,000,000				
South Cotabato	230,400,000	23,590,423	66,123,516	67,672,767	40,603,660
Sultan Kudarat	300,300,000				
Total	2,366,700,000	317,847,677	195,105,730	448,172,630	336,901,796

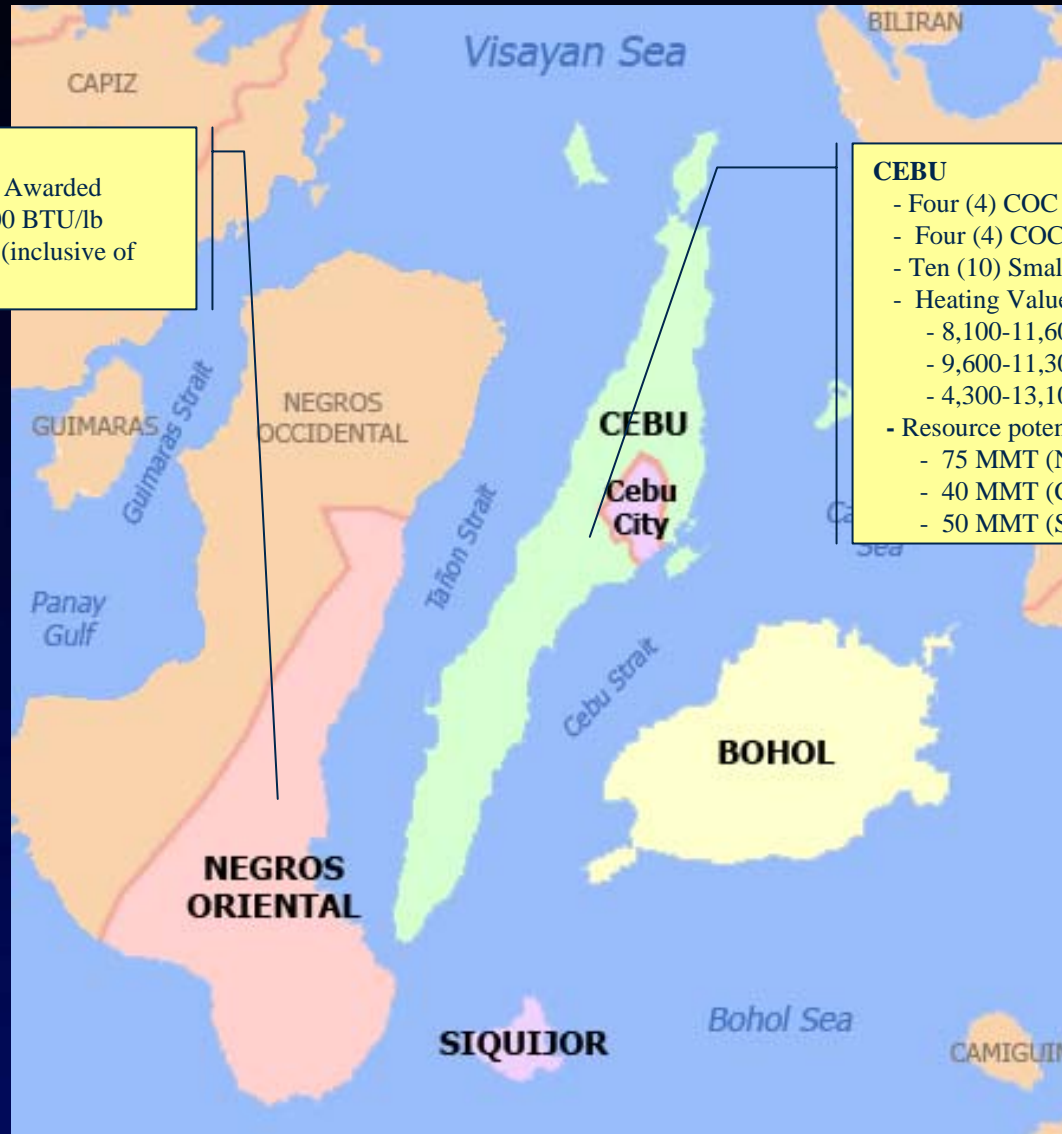
COAL RESOURCE POTENTIAL FOR REGION 7

NEGROS ORIENTAL

- Three (3) Small-Scale Permit Awarded
- Heating Value – 7,300 to 9,300 BTU/lb
- Resource Potential 4.5 MMT (inclusive of Negros Occ.)

CEBU

- Four (4) COC Exploration
- Four (4) COC Development and Production
- Ten (10) Small-Scale Permit Awarded
- Heating Value
 - 8,100-11,600 BTU/lb (North Cebu)
 - 9,600-11,300 BTU/lb (Central Cebu)
 - 4,300-13,100 BTU/lb (South Cebu)
- Resource potential
 - 75 MMT (North Cebu)
 - 40 MMT (Central Cebu)
 - 50 MMT (South Cebu)



ACTION PLANS

COAL

GOAL : To increase the indigenous coal production by 250% (base 2007)

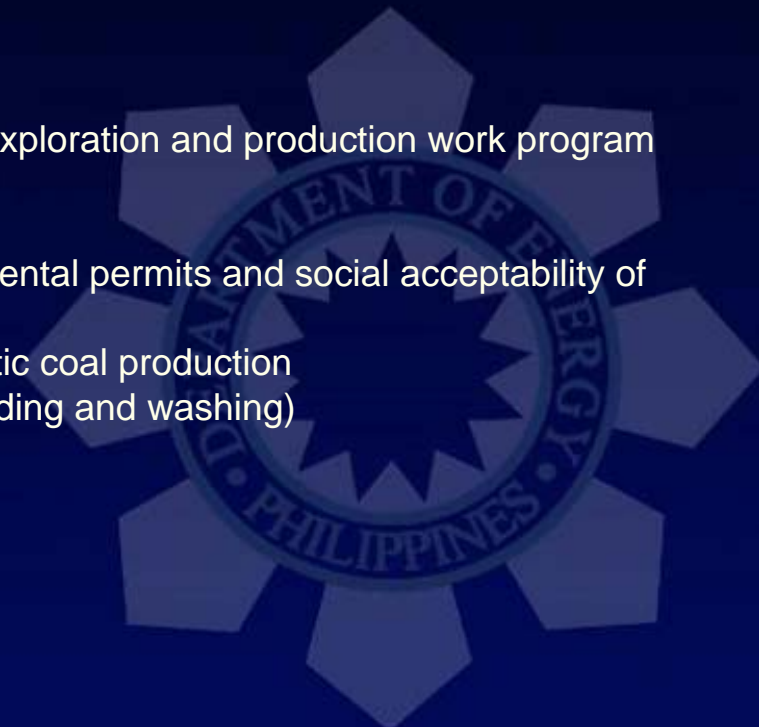
SECTORAL TARGETS :

- **Validate 580 MMT of coal reserves (base of 2007)**
- **Award of 2 new coal operating contracts**

TARGET DATE : 2008 – 2030

STRATEGIC ACTIONS

- Ensure performance of contractors and permittees on their exploration and production work program
- Conduct of exploration survey on free or uncontracted areas
- Promotion and implementation of Contracting Rounds
- Coordination with EMB and NCIP on acquisition of environmental permits and social acceptability of coal projects
- Conduct coal flow and market linkage study to assist domestic coal production
- Pursue local coal quality enhancement procedures (I.e. blending and washing)
- Continue the Small-Scale Coal Mining Program
- Pursue studies on alternative uses of coal
- Continue IEC on coal projects and clean coal technologies
- Improve web portal and interconnection for data sharing

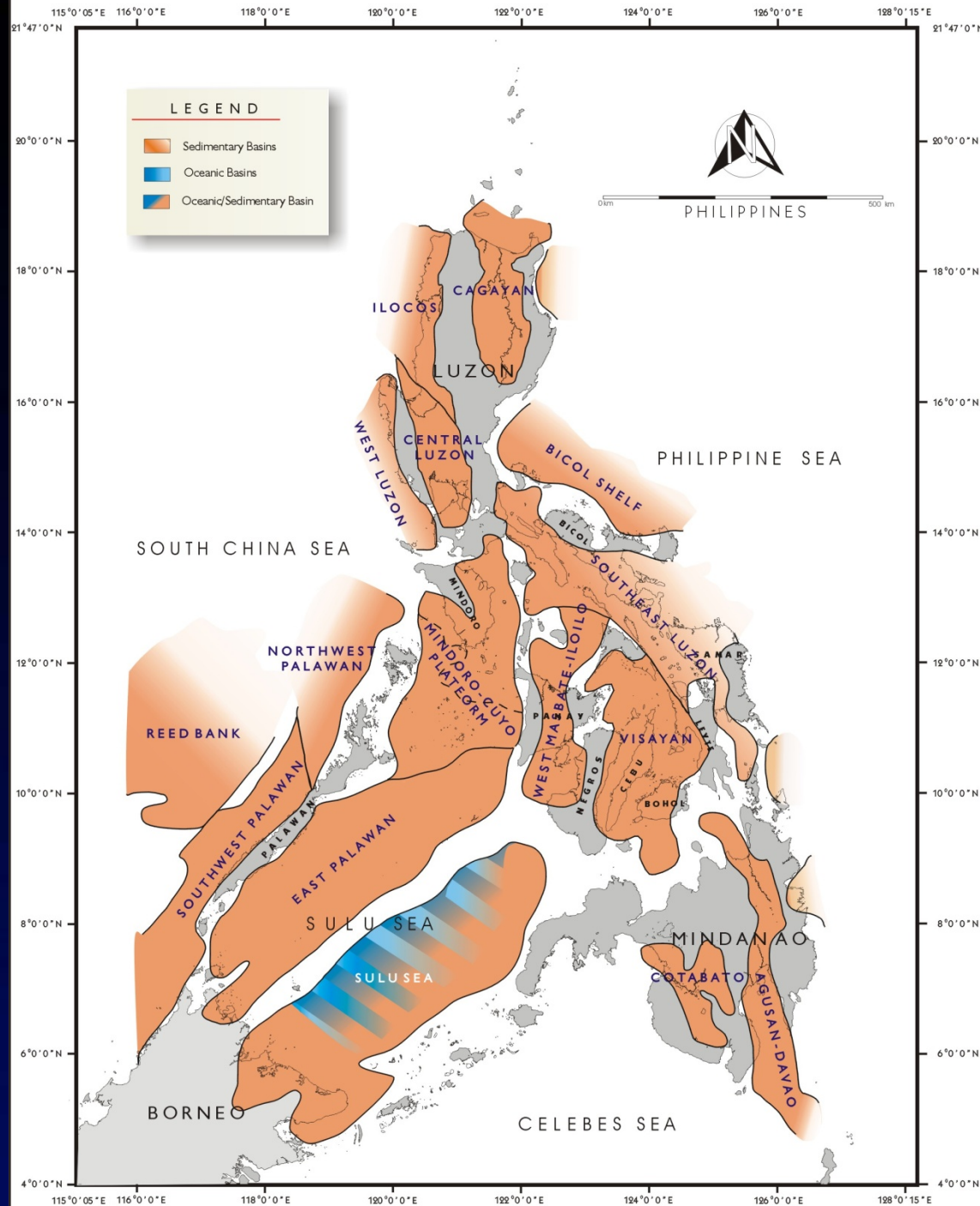


OIL AND GAS

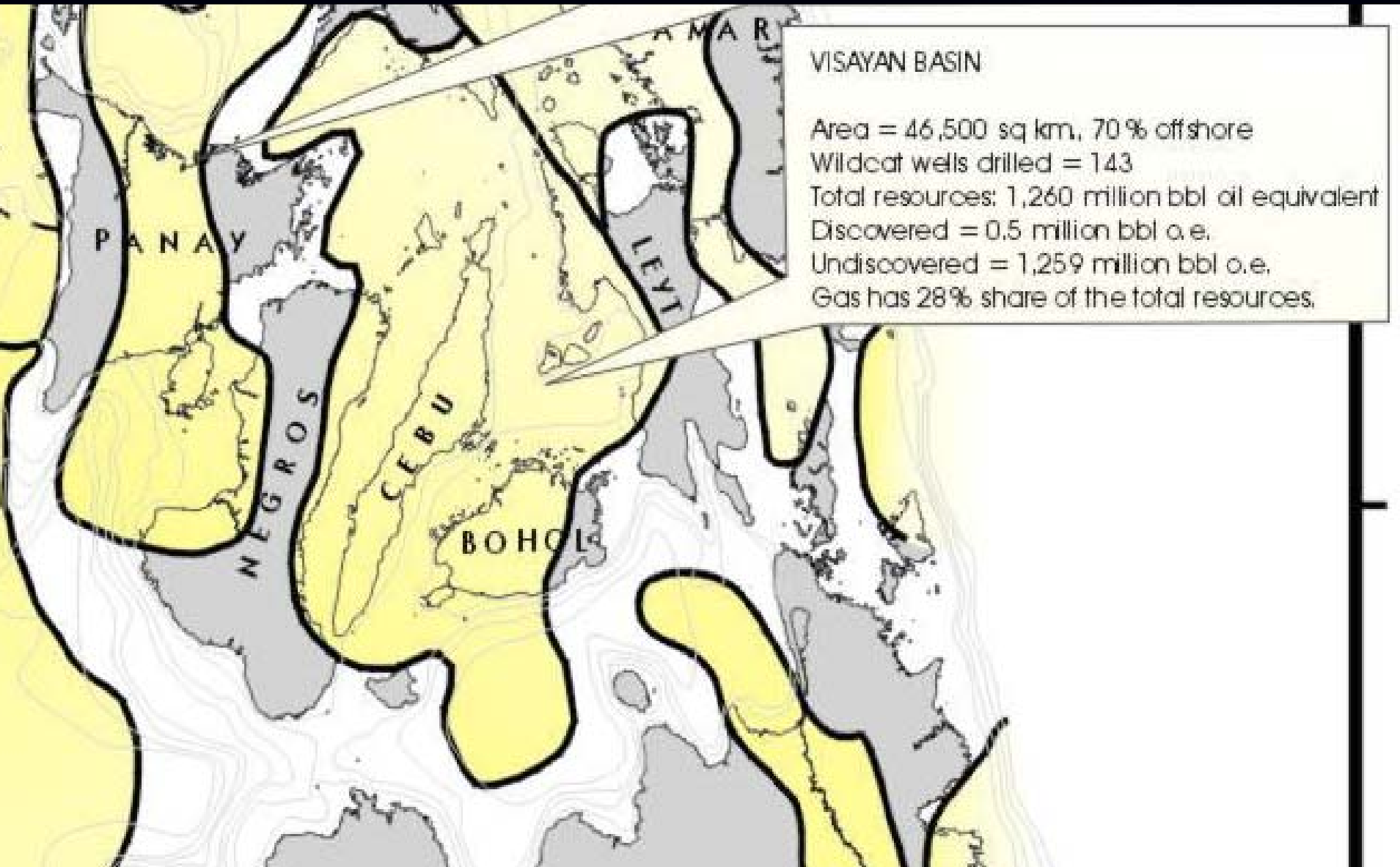


Sedimentary basins

- Large depressions on the earth's crust where thousands of meters thick of sediments accumulate
- With appropriate depth and temperature, sedimentary rocks rich in organic matter are transformed into petroleum

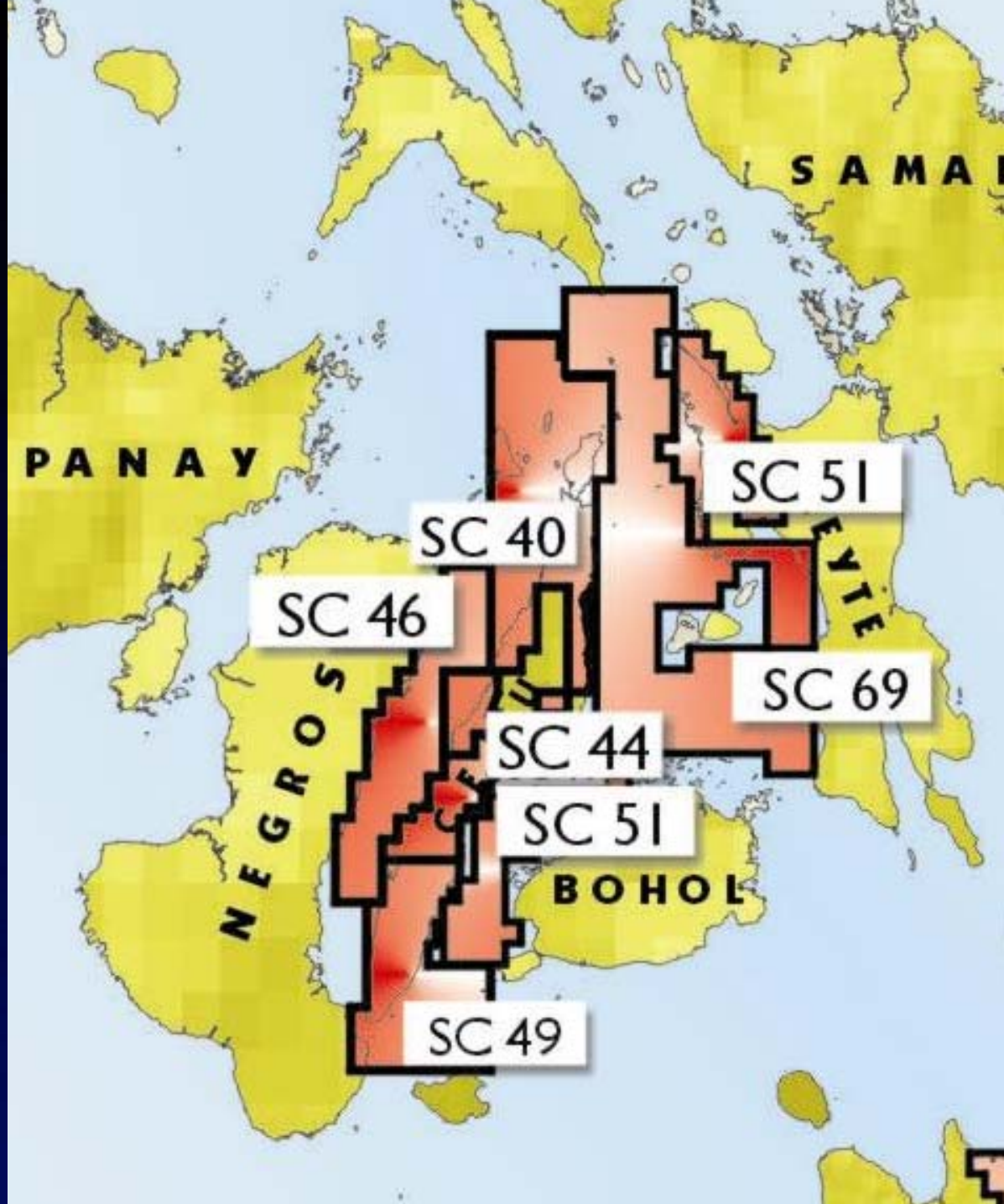


Visayan Basin Potential



Service Contracts in the Visayan Basin & Operators

- SC 40 - Forum
- SC 44 – G2G
- SC 49 - Ranhill
- SC 51 - NorAsian
- SC 69 – NorAsian Energy



Action Plan for Region 7

TARGETS: Year 2008 to 2030

- Award blocks/acreages
- Generate 2D/3D seismic data
- Develop fields
- Update resource potential
- Produce oil and gas

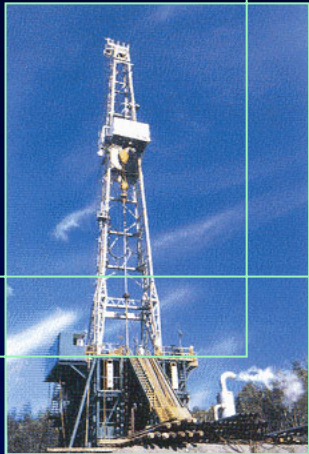
STRATEGIC ACTIONS:

- Offer blocks/acreages
- Acquire 2D/3D seismic data
- Drill wells
- Map prospects and leads
- Monitor oil and gas production





GEO THERMAL





Republic of the Philippines
Department of Energy

Geothermal Service Contracts



Mount Makiling-Banahaw, Laguna/Quezon
Total Installed Capacity - 425.73 MWe

Mabini, Batangas

Bacon-Manito, Sorsogon/Albay
Total Installed Capacity - 151.5 MWe

Northern Negros, Negros Occidental
Total Installed Capacity - 49.375 MWe

Palinpinon, Negros Oriental
Total Installed Capacity - 192.5 MWe

Mount Apo, North Cotabato/Davao
Total Installed Capacity - 108.48 MWe

Mount Labo, Camarines Provinces

Tiwi, Albay
Total Installed Capacity - 330 MWe

Biliran Island, Biliran Province

Tongonan, Leyte
Total Installed Capacity - 722.68 MWe

Mount Cabalian, Southern Leyte

Amacan, Compostela Valley

LEGEND



Producing Fields

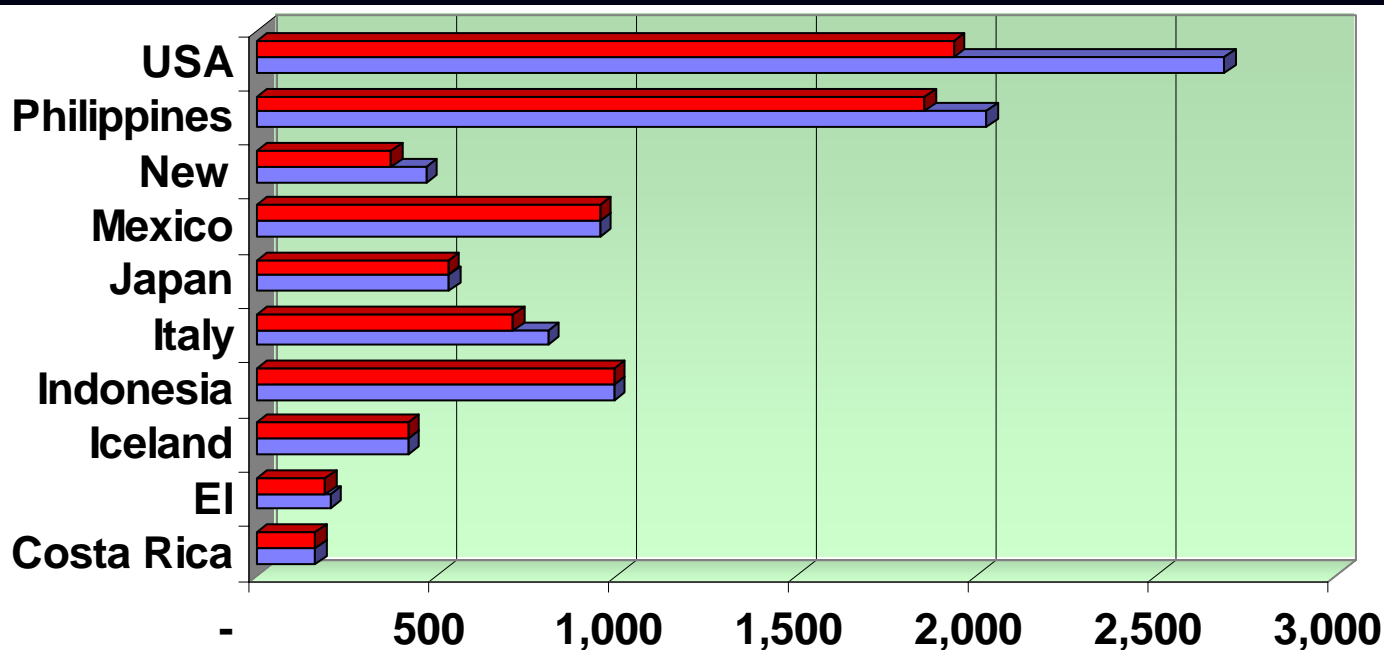


Under Exploration

Data as of July 2008
Source: Geothermal & Coal Division

WORLD'S LEADING GEOTHERMAL POWER PRODUCER

2007 Installed/Running Capacity in MW



Year 2007	Costa Rica	El Salvador	Iceland	Indonesia	Italy	Japan	Mexico	New Zealand	Philippines*	USA
Running Capacity (MW)	163	189	421	992	711	530	953	373	1,856	1,935
Installed Capacity (MW)	163	204	421	992	810	535	953	472	2,027	2,687

Source: Geo-Heat Center Bulletin, September 2007

* DOE data

RESOURCE POTENTIAL FOR REGION 7 for Power Generation and Nonpower application



CEBU

•Asturias

- Surface temperature is 48 °C

• Carcar

- Surface temperature is 38 °C

• Catmon

- Surface temperature is 38 °C

• Malabuyoc

- Surface temperature is 59 °C

• Naga

- Surface temperature is 35 °C

• San Nemesio

- Surface temperature is 34 °C

NEGROS ORIENTAL

• Palinpinon

- 192.5 MW installed capacity
- GSC awarded on 16 October 1981

• Nasulo Geothermal Power Project

- 20 MW resource potential
- committed for commissioning in 2010

• Dauin

- 40 MW resource potential

ACTION PLANS

GEOHERMAL

GOAL : To be the world's largest producer of geothermal energy

SPECIFIC TARGET : Installation of additional 60 MW for Region 7

STRATEGIC ACTIONS:

1. **Encourage Service Contractors to undertake expansion and optimization projects**
2. **Continued exploration in identified, underexplored and unexplored geothermal areas**
3. **Promotion activities under the Philippine Energy Contracting Round**
4. **Conduct assessment of low enthalpy geothermal resources and promotion of studied areas for development**
5. **Improve database and networking for better data access of both internal and external clients**

**PUBLIC CONSULTATION SERIES FOR THE
PHILIPPINE ENERGY PLAN (PEP) 2008-2030**

18 July 2008

THANK YOU!

