



The Government of the
Philippine Republic



Department of Energy



Opportunities and Challenges to Scaling up Wind Power in the Philippines

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Energy for All Partnership

Inception Meeting of the Working Group on Wind Powering the Poor

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Seoul, South Korea**

Outline

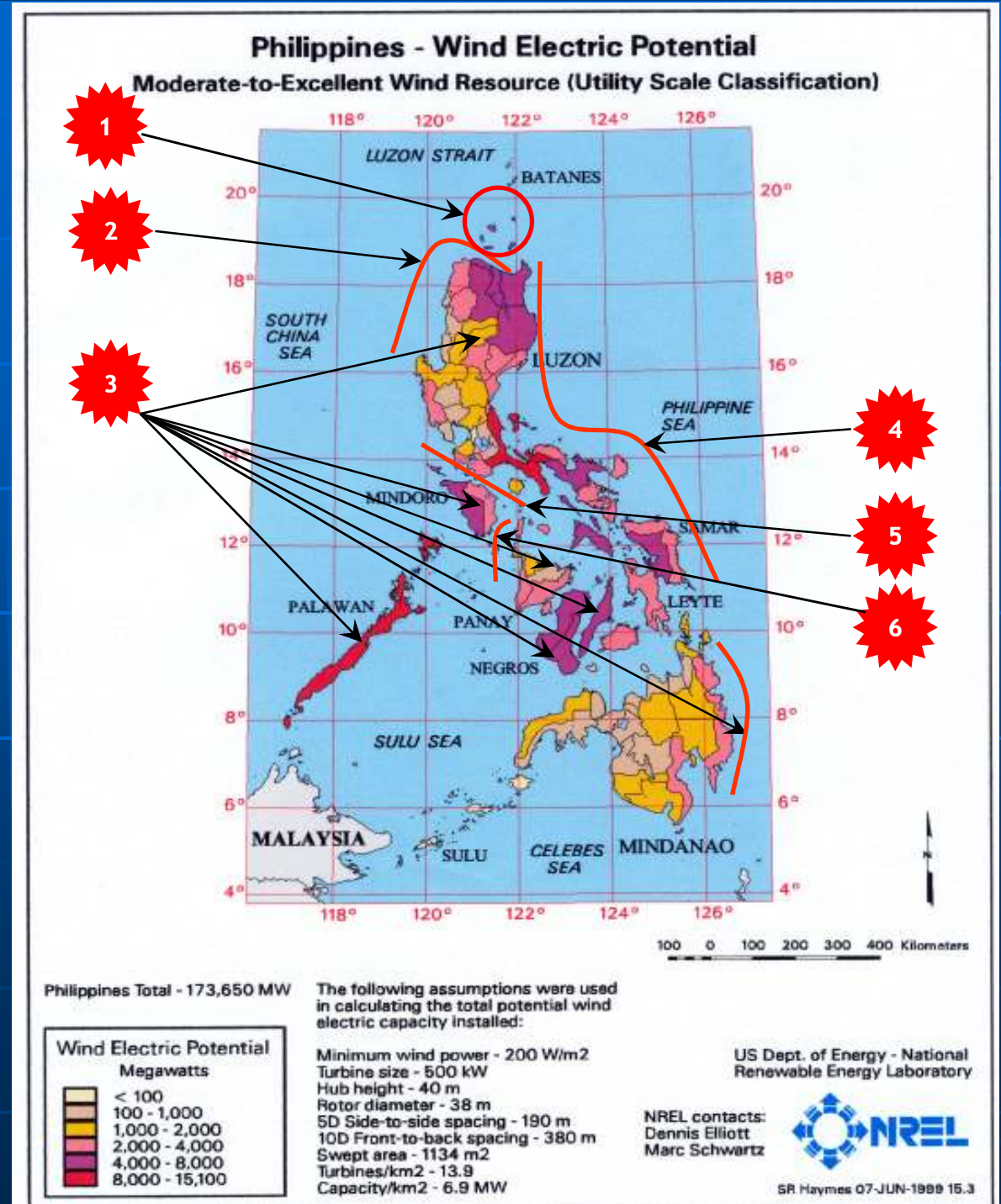
- 1. Wind Energy Resources**
- 2. Renewable Energy Plan**
- 3. Accomplishments**
- 4. Regulatory Framework**

Wind Energy Resources

Over **10,000 km²** with **76,600 MW** of potential capacity

6 Identified Regions

1. Batanes and Babuyan Island
2. Northwest tip of Luzon (Ilocos Norte)
3. Higher interior terrain of Luzon, Mindoro, Samar, Leyte, Panay, Negros, Cebu, Palawan, Eastern Mindanao and adjacent islands
4. Well-exposed east-facing coastal locations from Northern Luzon southward to Samar
5. The wind corridors between Luzon and Mindoro (including Lubang Island)
6. Between Mindoro and Panay (including the Semirara & Cuyo Island)

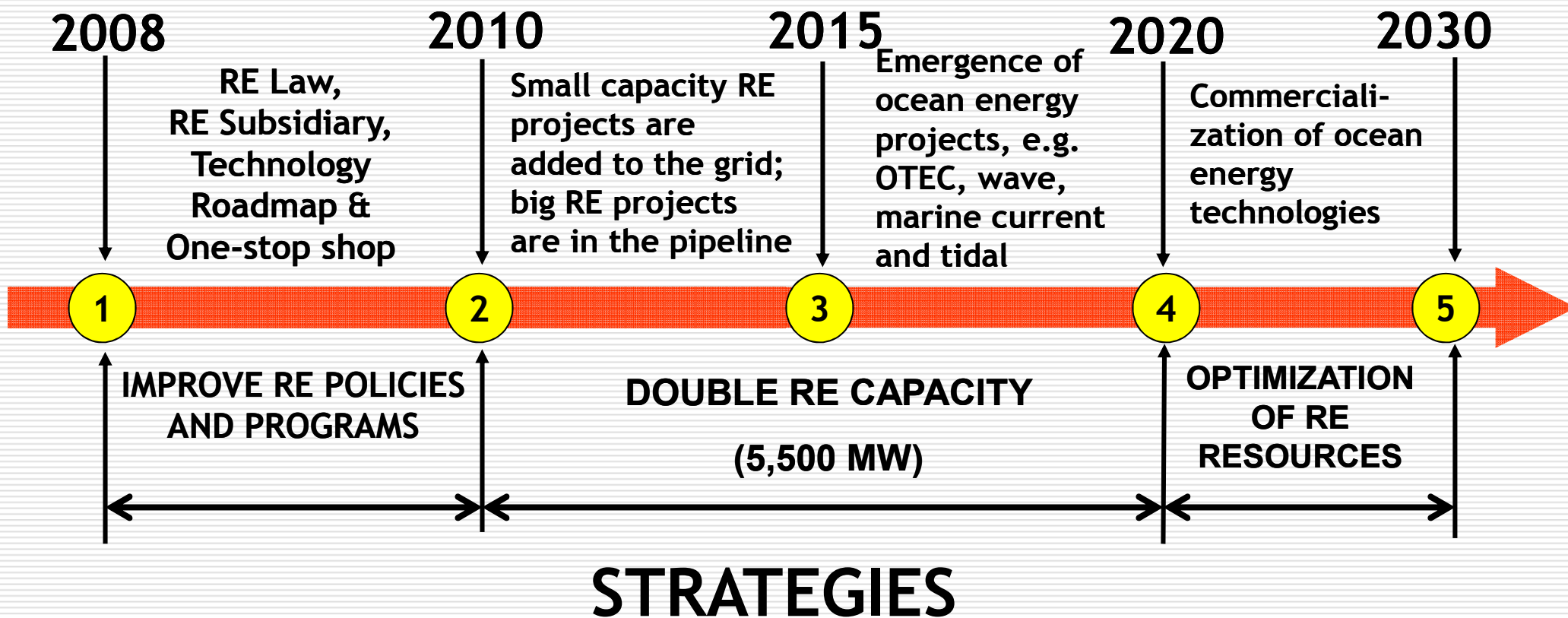


Wind Energy Resources

- Identified potential sites with power density of at least **500 W/m²** and **transmission line** cost of not over 25% of levelized cost of combined generation and transmission costs.
 - Philippine total potential is about **7,400 MW** covering 1,038 wind sites:
 - Luzon : 686 sites; 4,900 MW
 - Visayas : 305 sites; 2,168 MW
 - Mindanao : 47 sites; 336 MW

RE PLAN (2008 – 2030)

ENSURING STABLE AND QUALITY SUPPLY OF ENERGY
Intensify RE Development and Utilization



CO₂ Emission Reduction = 28.176 Million Tons


Fuel Displacement = 78.266 MMBFOE (542.011 Million TOE)

WE AIM :

- ❖ **Make RP the number one geothermal energy producer in the world (*no.2 in capacity and no. 1 in steam utilization*)**
- ❖ **Maintain RP ranking as the number one wind energy producer in Southeast Asia**
- ❖ **Install 3,400 MW of hydro capacity**
- ❖ **Expand contribution of biomass, solar and ocean energy by 350 MW**


Physical Targets

RESOURCE	EXISTING CAPACITY in year 2008 (MW)	TARGET CAPACITY (as of August 15, 2009)	TOTAL in 2020
Geothermal	2,027	1,070	3,097
Hydro	3,367	3,438	7,075
Wind	33	850	883
Solar	6.74	30	37
Biomass	68	200	268
Ocean	0	120	120
Total	5,500	5,708	11,472



Capacity: 33 MW
(20 WTG @ 1.65 MW)
Height of hub : 70 m
Cost = US\$ 47.6 M

Northwind Wind Power Project in Bangui Bay Ilocos Norte

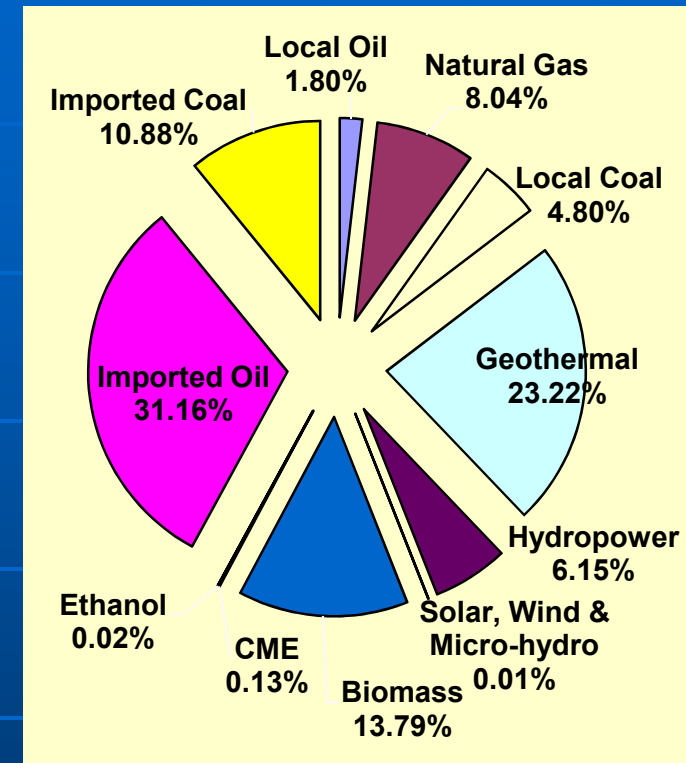


**Philippines is now
the leading wind
energy producer in
Southeast Asia**

Northwind Wind Power Project in Bangui Bay Ilocos Norte

2008 Energy Situationer

- ✓ Increased self-sufficiency to 58%
 - RE accounts for 43%
- ✓ Increased self-sufficiency in the power generation mix to 67%
 - RE accounts for 34%
 - Total installed capacity stood at 15,681 MW with dependable capacity of about 13,049 MW



REPUBLIC ACT 9513

Renewable Energy Act of 2008

**AN ACT PROMOTING THE
DEVELOPMENT, UTILIZATION
AND COMMERCIALIZATION OF
RENEWABLE ENERGY
RESOURCES AND FOR OTHER
PURPOSES**

OBJECTIVES

- Fiscal incentives
- Non-fiscal incentives
- Institutional support

SALIENT FEATURES

FISCAL INCENTIVES

RE Developers (New & Existing)	RE Suppliers, Fabricators, Manufacturers
7 year Income Tax Holiday (<u>ITH</u>)	7 year Income Tax Holiday (ITH)
10 year Duty-free Importation of RE Machinery, Equipment and <u>Materials</u>	10 year Tax and Duty-free Importation of Components, Parts and Materials
1.5% Special Realty Tax Rates on Equipment and <u>Machinery</u>	
7 year Net Operating Loss <u>Carry-Over</u>	
10 % <u>Corporate Tax</u> Rate after ITH	
Accelerated <u>Depreciation</u>	
Zero Percent <u>Value-Added Tax</u> Rate	Zero-rated value added tax transactions
<u>Cash Incentive</u> of Renewable Energy Developers for Missionary Electrification	
Tax Exemption of <u>Carbon Credits</u>	
100% <u>Tax Credit</u> on Domestic Capital Equipment and Services	100% Tax Credit on Domestic Capital Components, Parts and Materials
Exemption from the <u>Universal Charge</u>	
Payment of <u>Transmission Charge</u>	
<u>Hybrid and Cogeneration</u> Systems	Financial Assistance program

SALIENT FEATURES

FISCAL INCENTIVES

- **Incentives for Farmers Engaged in the Plantation of Biomass Resources**
 - All individuals and entities engaged in the plantation of crops and trees used as **biomass resources** such as but not limited to jatropha, coconut, and sugarcane, as **certified by the Department of Energy**;
 - Within ten (10) years from the effectivity of the Act, **duty-free importation and be exempted from Value-Added Tax (VAT)** on all types of agricultural inputs, equipment and machinery;

SALIENT FEATURES

FISCAL INCENTIVES

- **Tax Rebate for Purchase of RE Components**
 - To encourage the adoption of RE technologies, the DOF, in consultation with DOST, DOE, and DTI, shall provide rebates for all or part of the tax paid for the purchase of RE equipment **for residential, industrial, or community use**. The DOF shall also prescribe the appropriate period for granting the tax rebates;

SALIENT FEATURES

NON-FISCAL INCENTIVES

- **Renewable Portfolio Standard (RPS)**
 - refers to a **market-based policy** that requires electricity suppliers to source an agreed portion of their energy supply from eligible RE resources;
- **Feed-In Tariff System**
 - refers to **price premium** for the wind, solar, ocean, run-of-river hydropower and biomass generated electricity;

SALIENT FEATURES

NON-FISCAL INCENTIVES

■ Green Energy Option

- DOE to establish a **program** which provides the end-users the **option to choose** RE resources as their sources of energy;

■ Net Metering for Renewable Energy

- refers to a system, appropriate for distributed generation, in which a distribution grid user has a **two-way connection to the grid** and is only charged for his net electricity consumption and is credited for any overall contribution to the electricity grid;

SALIENT FEATURES

- National Renewable Energy Board
- Renewable Energy Management Bureau
- RE Trust Fund
- Financial Assistance Program

UPDATES

- Hydropower Projects:
 - 111 applications for Pre-Development Service Contracts
 - 22 applications for Development/Operating Contracts
- Ocean Power Projects
 - Pre-Development Service Contract for 36 OTEC sites
- Wind Power Projects:
 - 39 applications for Pre-Development Contracts
 - 8 PCCs for conversion to Pre-Development Contracts
- Biomass Projects:
 - 8 applications for Operating Contracts
 - 2 applications for Accreditation as Solar Suppliers/Manufacturers/Fabricators

UPDATES

- Solar Power Projects:
 - 6 applications for Accreditation as Solar Suppliers/Manufacturers/Fabricators
- Geothermal Projects:
 - 14 applications for Pre-Development Contracts
 - 5 GSCs for conversion to Operating Contracts

CHALLENGES

- **Technical Aspects**
 - Intermittent resource
 - Capacity Factor
- **Non-technical Aspects**
 - Institutional/Organizational
 - Socio-cultural
 - Financial
 - Political

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Thank You !