

LED: Perspective from a Developing Economy

By

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2 November 2011



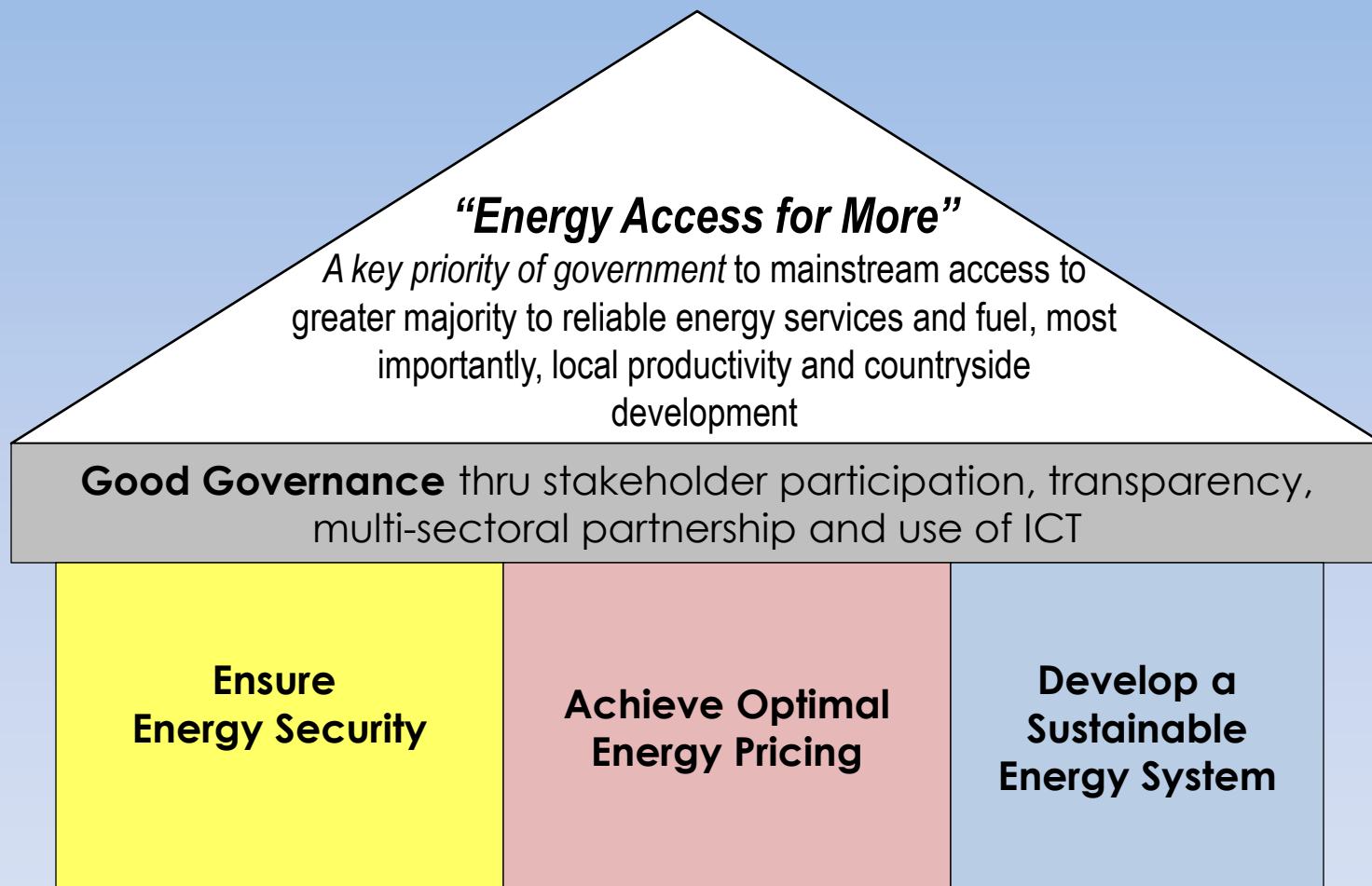
**Asia-Pacific
Economic Cooperation**



Australian Government

**Department of Climate Change
and Energy Efficiency**

PHILIPPINE ENERGY REFORM AGENDA



ERA vis-à-vis Major Programs

Major Programs	Energy Security	Optimal Energy Pricing	Sustainable Energy System
Energy Policy and Planning	√	√	√
Energy Resource Development			
▪ <i>Fossil Fuels</i>	√	√	√
▪ <i>Renewable Energy</i>	√		√
Downstream Oil	√		√
Downstream Natural Gas	√	√	√
Power and Electrification	√	√	√
Biofuels	√		√
Alternative Fuels for Transport	√	√	√
Energy Efficiency and Conservation	√	√	√
Energy Standards and Safety	√		√
Climate Change	√		√
Investment Promotion	√	√	√

What have been done so far

Diversified Energy Mix

Enhanced Indigenous Energy Development

Invested in Clean Energy

Ensured Sufficient Supply

Increased Energy Access for Household

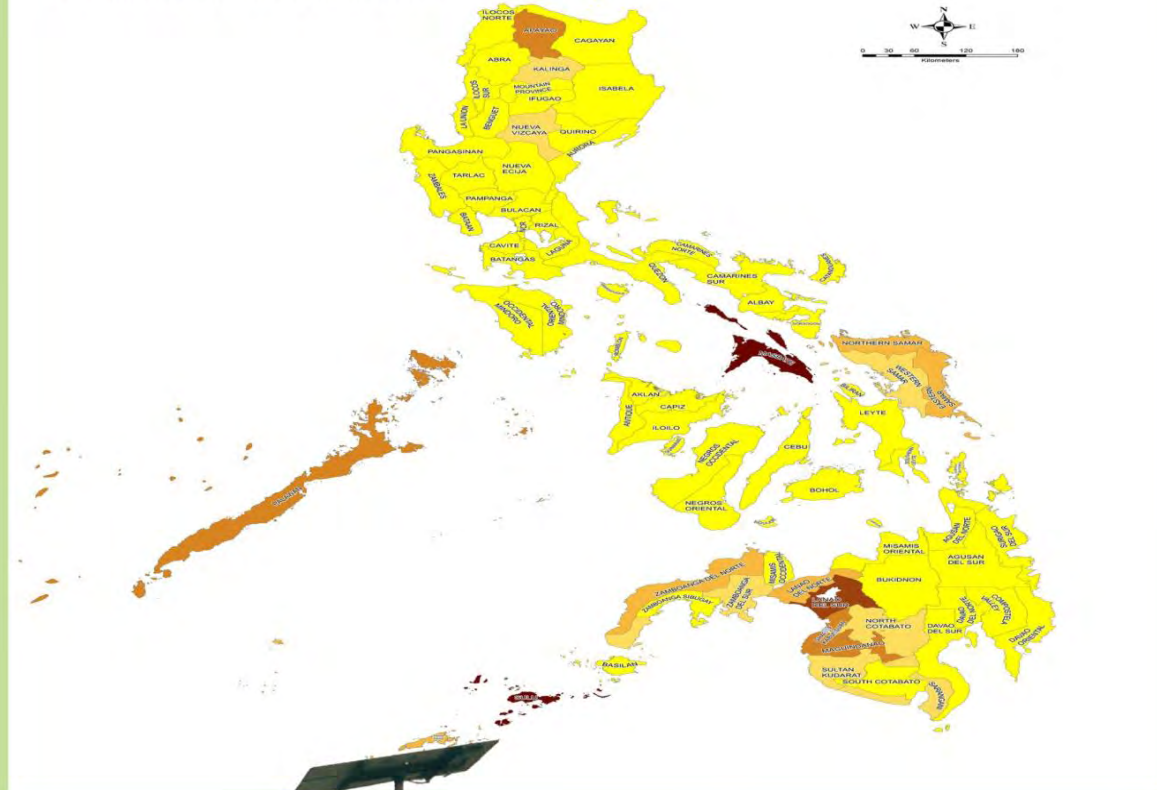
Promoted Energy Efficiency



Expanded Rural Electrification

Philippine Energization Level

Percentage Level by Province



Energy Access for Households

YEAR	TOTAL HOUSEHOLDS				% Electrified
	POTENTIAL	ANNUAL TARGET	SERVED	UNSERVED	Total
2011	17,594,474	323,233	14,715,279	2,879,195	83.636%
2012	17,788,496	370,900	15,086,179	2,702,317	84.809%
2013	17,986,021	370,900	15,457,079	2,528,942	85.939%
2014	18,193,402	370,900	15,827,979	2,365,423	86.998%
2015	18,403,128	370,900	16,198,879	2,204,249	88.022%
2016	18,612,755	370,900	16,569,779	2,042,976	89.024%
2017	18,822,959	370,900	16,940,679	1,882,280	90.000%

SOURCES: * Distribution Development Plan 2009-2018 , DOE-PPDD

Status of Energization by National Electrification Administration as of November 2010

Briefing Joint Congressional Power Commission by NEA February 2011

Singapore, 1-2 November 2011

Electrification Projects

Increased Electrification for Households

Rural Electrification Program

Goal : To achieve 90% household electrification by 2017

Strategy:

Implement rural/missionary electrification with greater public sector participation in a holistic and sustainable manner



Household Electrification Project

LED Applications

- Beneficiaries:
 - Off-grid households
- Role of the DOE
 - Assessment of site, socio-economic conditions, acceptability of technology, support to the project
 - Facilitate trainings of beneficiaries/project technicians on the installation, operation and maintenance of the solar-LED home system
 - Facilitation of after-sales support



Household Electrification Project

LED Applications

- Beneficiaries:
2,750 Off-grid households
- Summary of LED Lamps used in HEP 2010
 - 1-watt LED 2,756 units
 - 3-watt LED 8,262 units
 - 7-watt, linear LED
12 units
 - 15-watt LED for streetlights
40 units



3 watts x 3 units



1 watt x 1 unit

Promoting Lighting Energy Efficiency

LED Applications

- Retrofit of Traffic Lights to LED in 159 Intersections in major Metro Manila roads
- On-going



Traffic Lights

Programmed Activities for 2011-2012

LED Applications

- Installation of PV-LED Home System in 223 households, 12 PV-LED streetlights, 2-75 Wp PV-LED ShS in 4 island barangays (Antique, Aklan, Palawan, Davao del Norte)
- Installation of PV-LED Home System (30 Wp) in 3,159 households
- Installation of 35 units of 75 Wp PV-LED Streetlights (15 W LEDs)
- Installation of 39 units 75 Wp PV Solar Home System



Programmed Activities for 2011-2012

- Installation of LED Traffic Lights in 88 Intersections of major Metro Manila roads
- Installation of PV-LED system in the Boni Tunnel, Mandaluyong, Metro Manila



Boni Tunnel

Master LED Tubes (94 pcs)
Long life
30,000 burning hours
Aluminum heat-sink feature
70% lumen maintenance
22W
Pacific Luminaire (47 sets)

Prospective Activity

Philippine National Roadway Lighting Standard Development

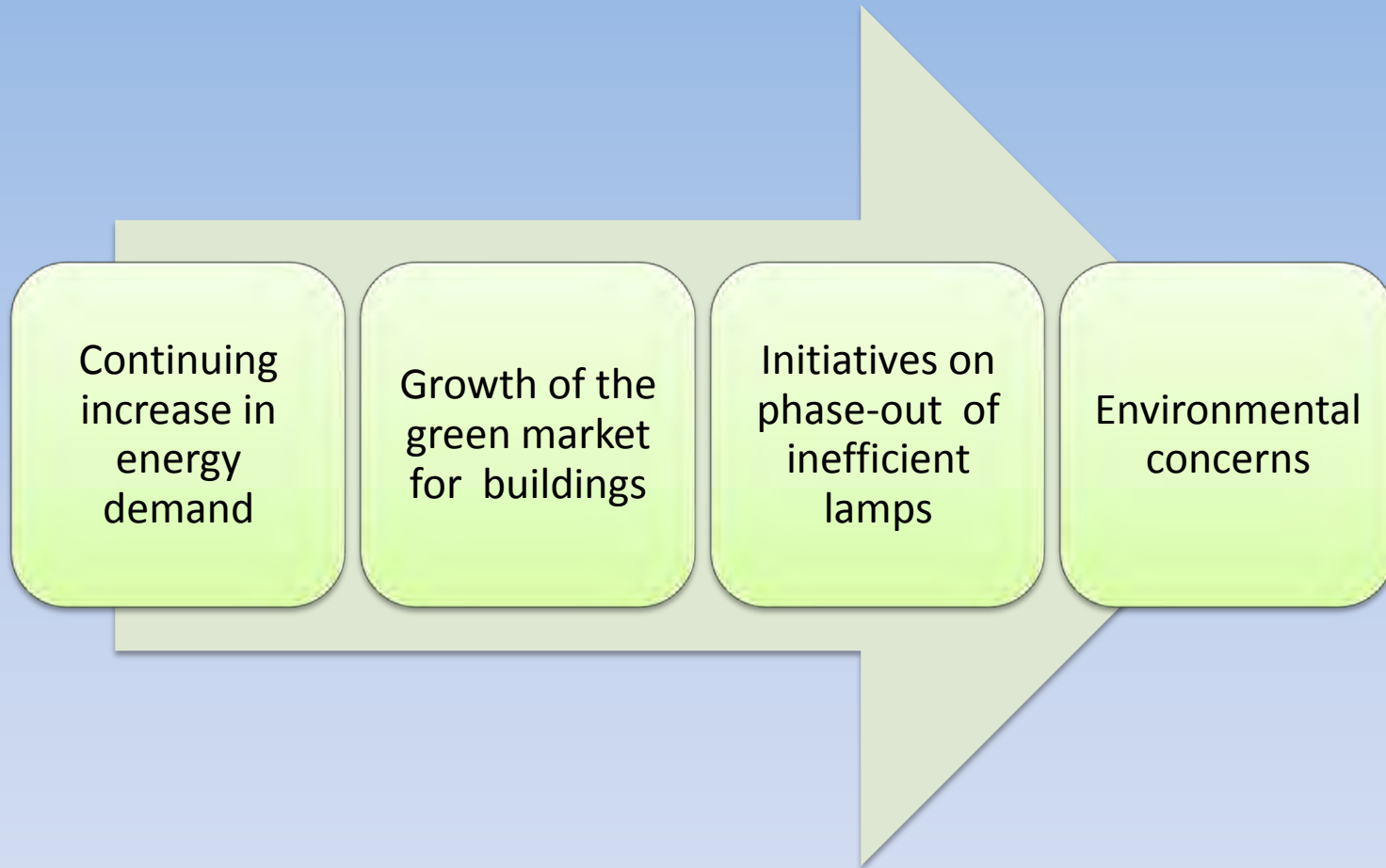


120W LED

- **80,000 hours life span**

**Road Board
Republic of the Philippines**

What Drives the Growth of the LED Market?



Gaps

LED Roadmap

National Standard for LEDs

Availability/Accessibility

Technical expertise

Determining technology choices – balancing need with up-front cost of implementation

Gaps

LED testing facility

Funding sources identification

CDM process mentoring

Information/Education/Communication Program

Food for Thought



Why not.....

Initiate a harmonized LED standard development for the region this early in the game?

Create a framework for LED roadmap for countries clustered in accordance with similarities in economic and social backgrounds in the region?

Create a training program for energy efficiency and renewable energy workers? For policy makers and movers?

Help governments create small business energy programs that offer loans to small businesses for energy efficiency improvements?

Food for Thought



Why not

Consolidate information on funding sources for energy efficient lighting projects including information on getting CDM credits? (It's not as easy as it seems!)

“The significant problems we face today cannot be solved at the same level of thinking as when they were created.”

Albert Einstein

Thank you!!!

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PAPER FROM:

**APEC LED WORKSHOP: *POLICIES TO PROTECT AND
EDUCATE CONSUMERS***

APEC#212-RE-04.1

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