



Renewable Energy Development in Jamaica

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Presentation Outline

- Introduction
- Utilization and Current State
 - Domestic Renewable Energy Market
- Institutional Framework
- Renewable Energy Development
 - Contribution to Electricity
 - Timeline of Recent Milestones
 - Renewable Energy Projects/Programmes (2013)
- Concluding Remarks

Introduction

- Energy vital to growth and socio-economic development
- Domestic market highly susceptible to world energy market disruptions
 - Jamaica imports fossil fuels to satisfy **90%** of energy needs
- Local efforts focus on affordable and reliable supply
 - Considerations for minimum environmental damage
 - Monitoring and evaluating the utilization of limited resources important (physical, financial and technical)
- Institutional framework key to sustainability (legislation, regulation, pricing, production and use)





UTILIZATION AND CURRENT STATE

Domestic Renewable Energy Market

Several forms of renewable sources available in Jamaica

- Fuels (ethanol, biodiesel)
- Electricity (wind, hydro, solar)
- Solids (bagasse, woodchips, fuel wood)
- Gases (biogas)

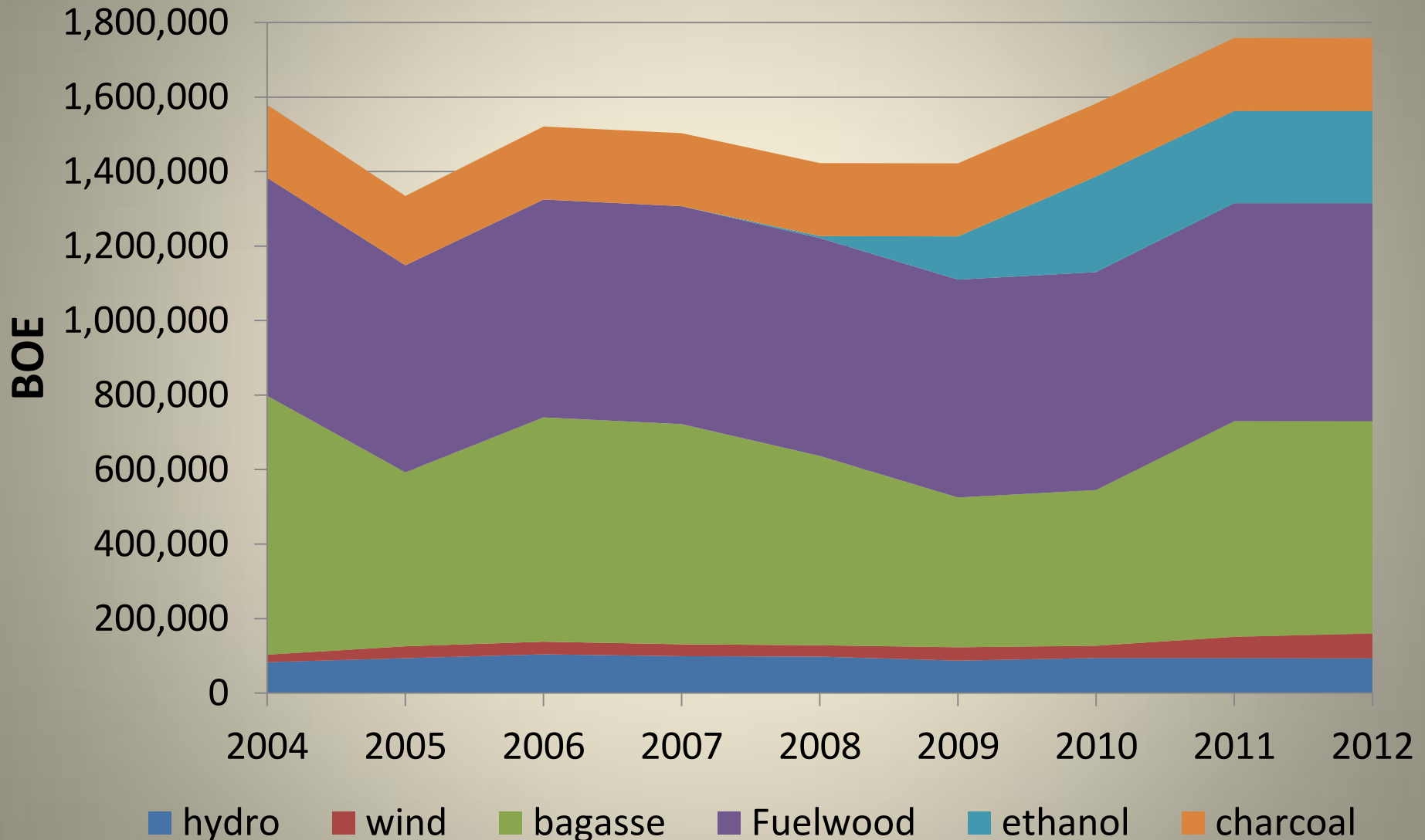
Renewables

(wind, solar, hydro, biomass – biofuels, biogas, charcoal, fuel woodchips)

- Electricity
- Transportation (road)
- Electricity generation
- Residential
- Manufacturing
- Agriculture Processing
- Service sector

- Driving
- Lighting
- Refrigeration
- Process heating
- Cooking

Renewable Energy Consumption Trends



Energy Supply and Consumption (boe)

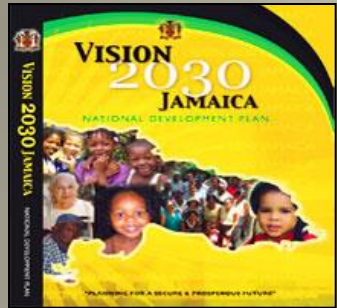
	Petroleum Imports	Renewable Consumption	Other Energy Available (Coal)	Total Supply	RE in mix (%)
2004	25,530,179	1,579,000	323,000	27,432,179	6%
2005	27,033,983	1,334,500	259,000	28,627,483	5%
2006	29,990,474	1,521,000	186,624	31,698,099	5%
2007	29,086,636	1,503,000	176,000	30,765,636	5%
2008	28,310,718	1,674,279	389,000	30,373,997	6%
2009	21,607,004	1,559,652	167,000	23,333,656	7%
2010	19,968,327	1,569,364	139,000	21,676,691	7%
2011	20,616,766	1,758,689	361,000	22,736,454	8%
2012	19,733,569	1,758,436	284,000	21,776,005	8%



INSTITUTIONAL FRAMEWORK

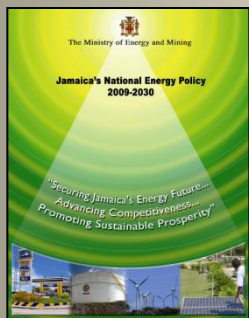
Policies and Plans

- Planning strategies created and are being implemented



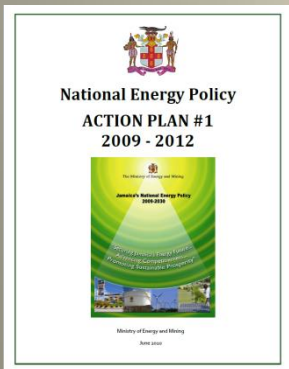
– Long-term strategies

- National Development Plan – Vision 2030 Jamaica
- National Energy Policy 2009-2030 (promulgated)
 - National Renewable Energy Policy (draft)
 - National Biofuels Policy (draft)
 - National Policy for the Trading of Carbon Emissions (draft)



– Medium term strategies

- National Energy Action Plans
 - Outlines projects and programs over 3 year periods



National Renewable Energy Focus

■ Policy Goals

- ❑ Economic, infrastructural and planning conditions conducive to RE Development
- ❑ Financial and fiscal policy instruments
- ❑ Legislative and regulatory environment **All Island Electric Act (2011)**
- ❑ Technology development and promotion and introduction of RETs

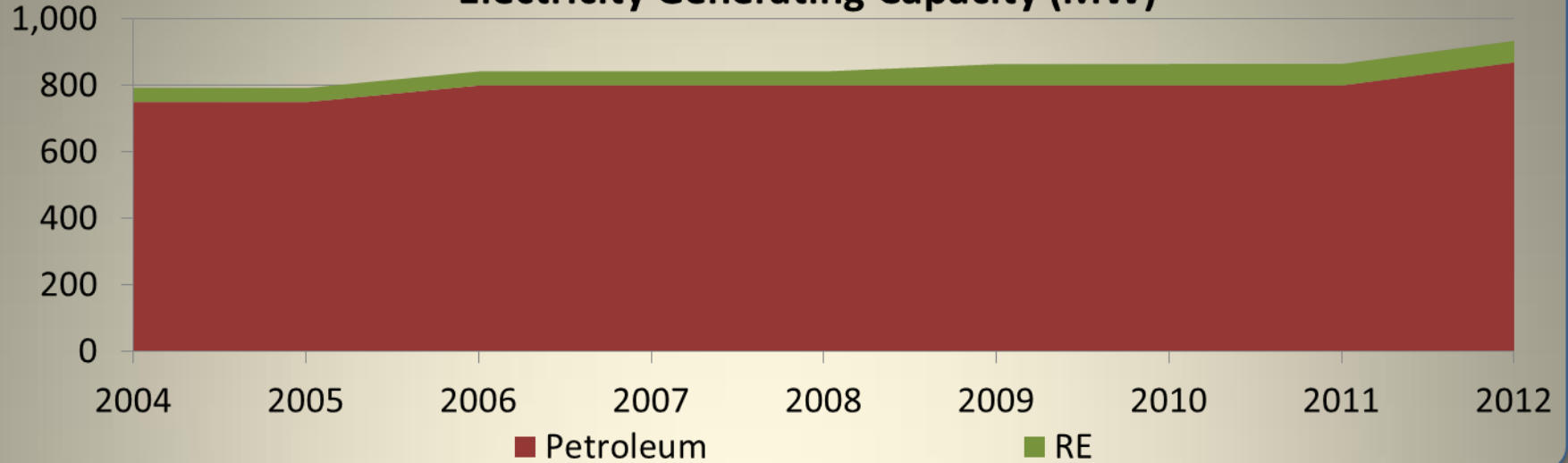
<u>Targets</u>		<u>Savings</u>
11% by 2012	↔	US\$48.8M
12.5% by 2015	↔	US\$55.4M
20% by 2030	↔	US\$88.6M



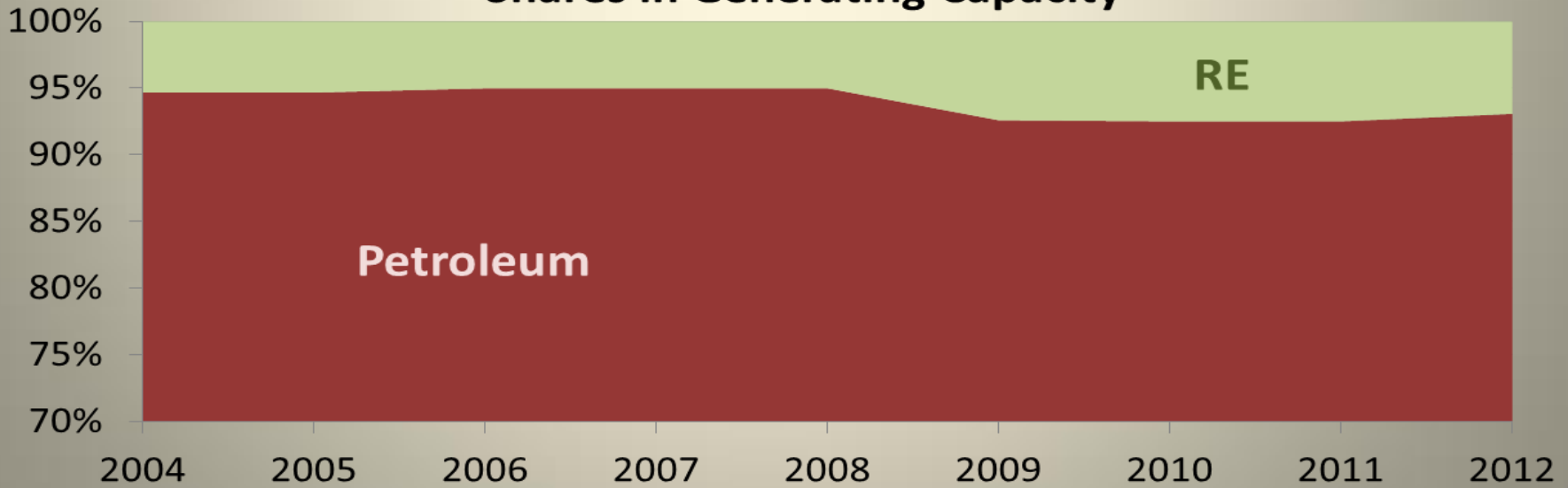
RENEWABLE ENERGY DEVELOPMENT

Contribution to Electricity

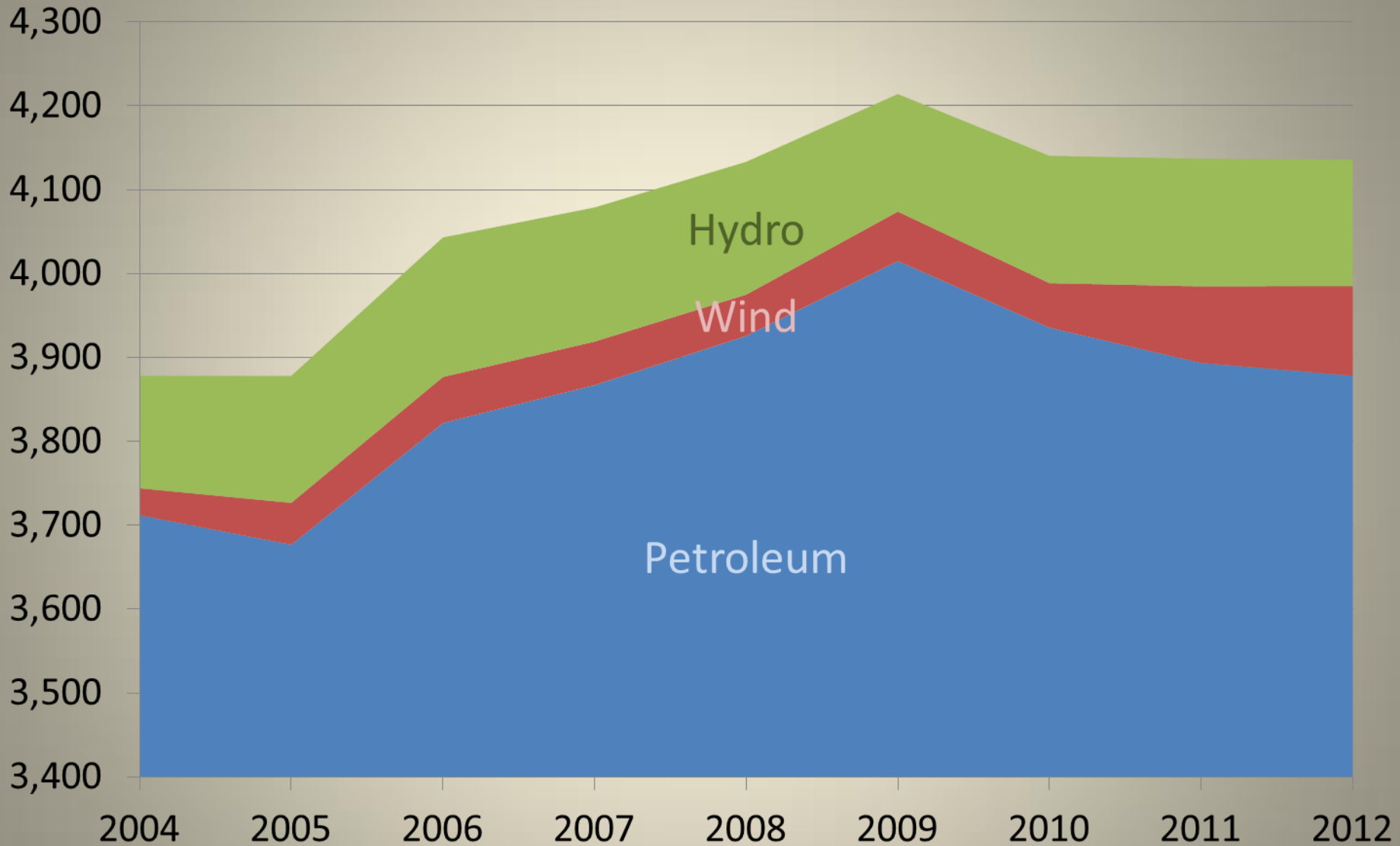
Electricity Generating Capacity (MW)



Shares in Generating Capacity



Growth in Net Generation (GWh)



Timeline of Recent Milestones

Wind

- Wigton Wind Farm
 - Phase I – 20.7MW (2004)
 - Phase II – 18MW (2010)
 - Phase III – 24 MW (2015)
- Munroe – 3MW (2009)
- Blue Mountain Renewables LLC – 34MW (2015)

Hydro power

- Constant Spring Re-commissioned (2009)
- Maggoty – 7.2MW (2014)
- Feasibility and Pre feasibility on several sites (2014)

Solar

- WRB Enterprises – 20MW (2015)

Biofuels

- Ethanol blended Gasolene – 2010
- Biodiesel Pilot Project – 2011

Renewable Energy Projects/Programmes (2013)

OUR 115 MW RFP – 78MW (energy only)

- Wighton Wind Farm – 24 MW (Wind)
- Blue Mountain Renewables LLC – 34 MW (Wind)
- WRB Enterprises – 20 MW (Solar)
- Smart Grid Roadmap for Jamaica (MSTEM & World Bank)
- Grid Impact Assessment and Analysis (MSTEM & World Bank)
- Five (5) hydro power Feasibility Studies (MSTEM, PCJ & World Bank)
- Sustainable Energy Road Map for Jamaica (MSTEM & Worldwatch Institute)
- Biodiesel Pilot Project – PCJ and Min. of Agriculture & Fisheries
- Wind Resource Assessment – 20 Sites (IDB and PCJ)

Renewable Energy Projects/Programmes (2013)

- Solar Market Survey (*PCJ*)
- Solar-Hydrogen Gas for Domestic Cooking (*UTech, MSTEM, Bureau of Standards Jamaica, UWI & Brunel University*)
- First Edition of Online Tutored Course – Implementing RE & EE in the Hotel Industry in the Caribbean (*JTHA*)
- Net Billing (OUR, MSTEM (GEI), JPS, BSJ & Small Scale RE producers)
 - Standard Offer Contract
 - Licences issued
 - Inspection of renewable energy facilities
- Wind Power for Domestic/Community Feasibility Study and Regulatory Review (*MSTEM & UNDP*)
- Solar Energy Pilot Project for the installation of PV systems targeting rural communities commenced (*REP*)

Concluding Remarks

- Energy encompasses every aspect of our lives
- Pursuing renewable energy makes economic sense
- Wise long-term planning can contribute significantly to growth and development
- Government's leading and facilitating role very crucial throughout the process
- Private sector encouraged to pursue indigenous RE investment opportunities
- Tertiary institutions involvement necessary to bolster technical and human capacity
- Huge potential for renewable energy exists

Thank You

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