



National Energy Policy

2009 – 2030

Presentation To Jamaica Institute of Engineers

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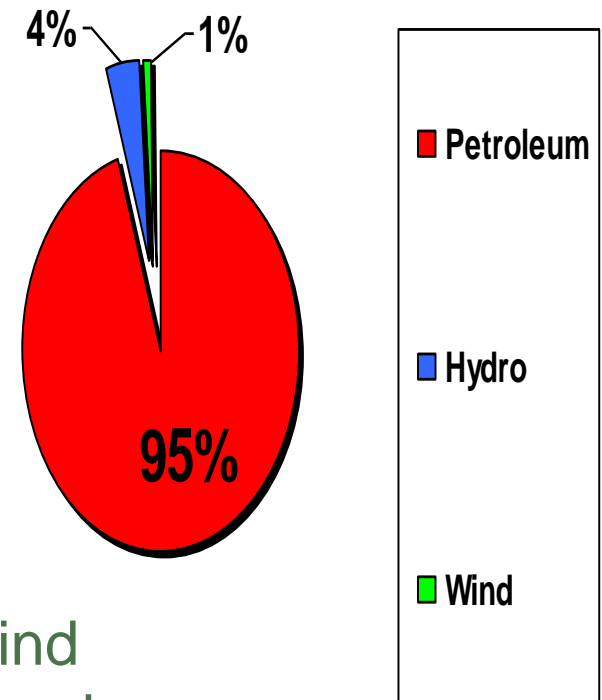
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PRESENTATION OUTLINE

- Profile of Jamaica's Energy Sector
- Jamaica's National Energy Policy
2009 – 2030
- Energy Conservation & Efficiency (ECE)
- ECE Priority Policy Areas
- Improving Energy Efficiency in Jamaica
 - Energy Supply Side
 - Distribution Systems
 - End Use and Demand Side Management (DSM)
- Implementation, Monitoring & Evaluation Framework

PROFILE: JAMAICA ENERGY SECTOR

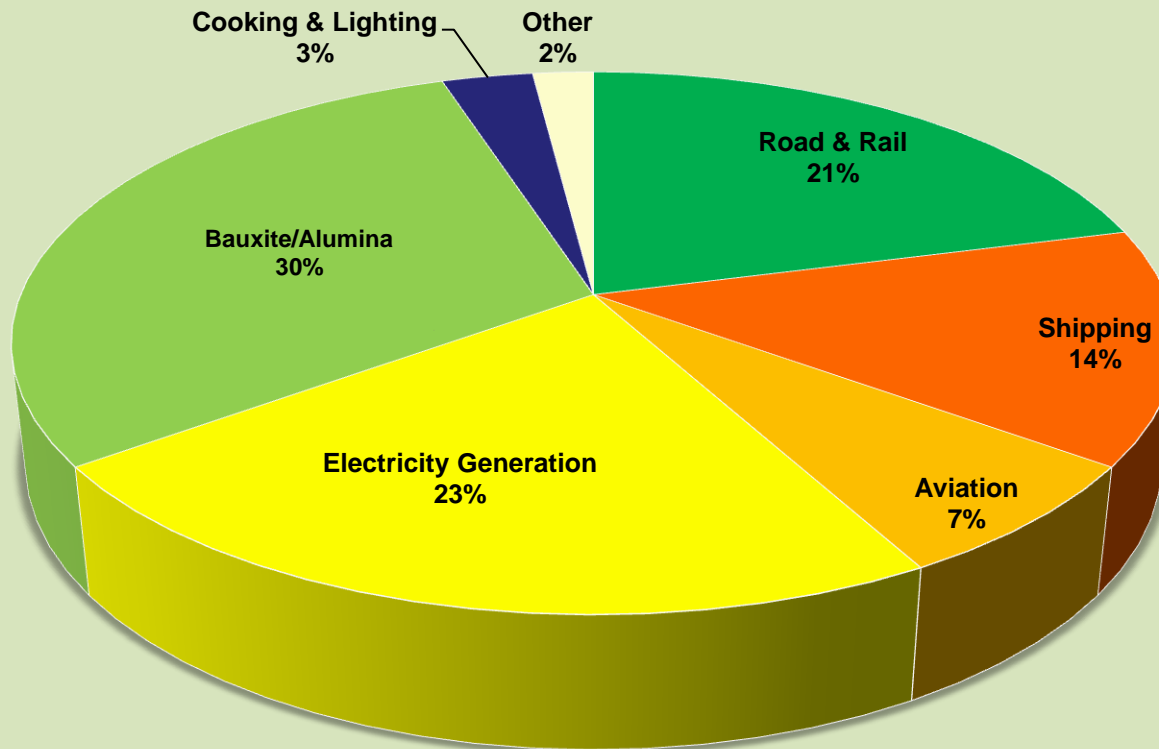
- High dependence on imported oil
 - 2006 - 2008: Avg. annual import - 29.974 M bbls valued at US\$2bn
 - 39% of GDP, 2009
- High Concentration:
 - Bauxite/alumina – 30%
 - Power/electricity generation – 23%
 - Transport – 42%
 - Per capita consumption - 8.0boe
 - Excluding the bauxite sector - 5.0boe
- Low efficiency
 - Electricity generation – 29%,
 - Bauxite/Alumina – 75%– 85%
- Only 5% from Renewable - Hydro and Wind
- Need for an appropriate regulatory framework



Profile of Jamaica's Energy Sector

Cont'd

Petroleum Consumption by Activity



Jamaica: National Energy Policy 2009 – 2030



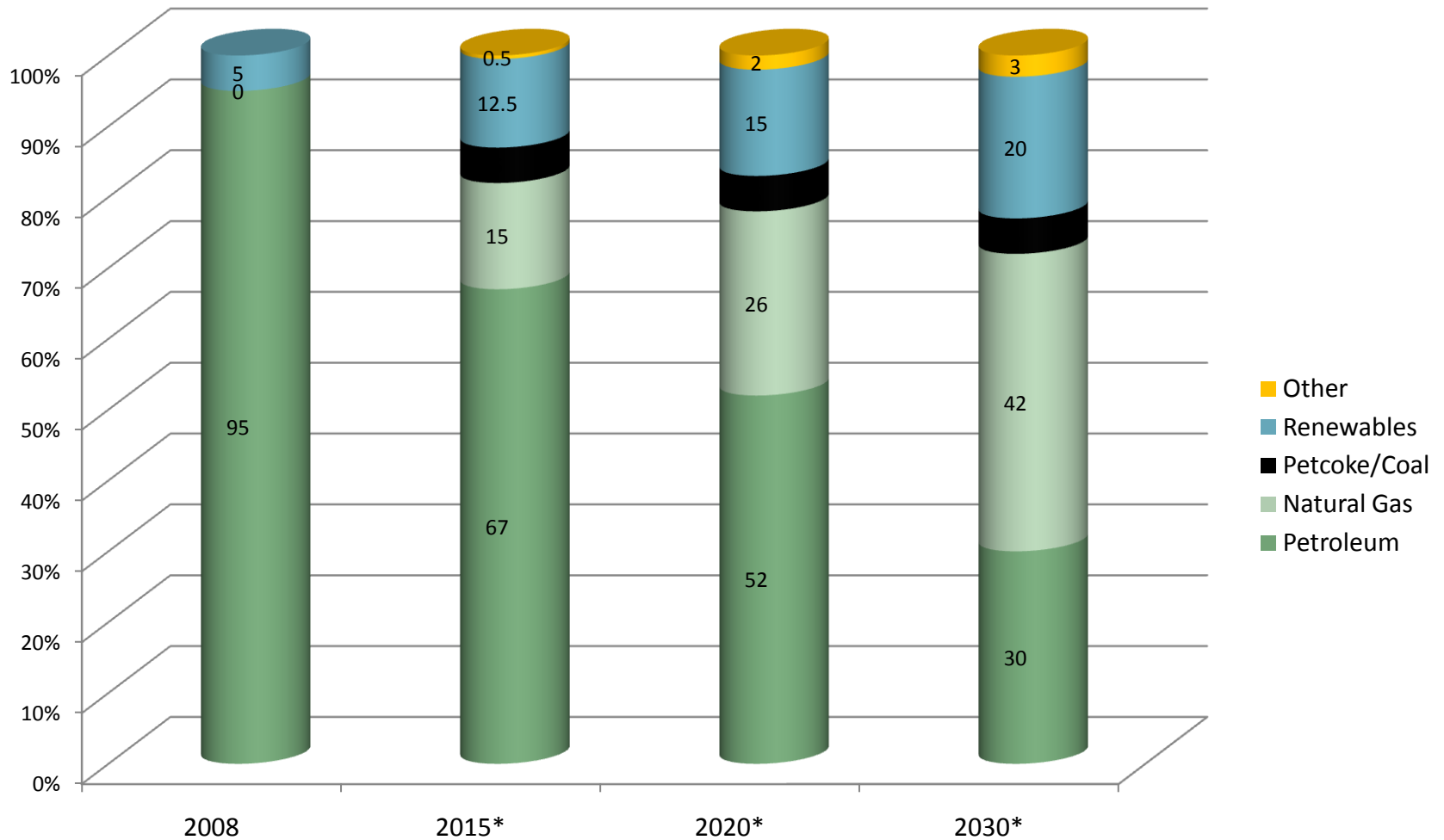
**“Securing Jamaica’s Energy Future...
Advancing Competitiveness...Promoting
Sustainable Prosperity...”**

7 Priority Areas & Related Goals

1. Improved Energy Conservation and Efficiency
2. Modernized Energy Infrastructure
3. Development of Renewable Energy Sources
4. Energy Supply Security & Diversification of fuel Sources
5. Governance/Regulatory Framework
6. Government Ministries, Agencies & Departments as Model leader
7. Eco-efficiency and Green Economy



Jamaica's Energy Supply Matrix



Strategic Focus

Vision

A modern, efficient, diversified & environmentally sustainable energy sector providing affordable and accessible energy supplies with long-term energy security and supported by informed public behaviour on energy issues & an appropriate policy, regulatory and institutional framework

Mission

To Secure Jamaica's Energy Future, Advance Competitiveness and Promote Sustainable Prosperity

“A modern, efficient, diversified and environmentally sustainable energy sector providing affordable and accessible energy supplies with long-term energy security and supported by informed public behaviour on energy issues and an appropriate policy, regulatory and institutional framework”

<p>Goal 1:</p> <p>Jamaicans use energy wisely and aggressively pursue opportunities for conservation and efficiency</p>	<p>Goal 2:</p> <p>Jamaica has a modernized and expanded energy infrastructure that enhances energy generation capacity and ensures that energy supplies are safely, reliably, and affordably transported to homes, communities and the productive sectors on a sustainable basis</p>	<p>Goal 3:</p> <p>Jamaica realizes its energy resource potential through the development of renewable energy sources and enhances its international competitiveness, energy security whilst reducing its carbon footprint</p>	<p>Goal 4:</p> <p>Jamaica's energy supply is secure and sufficient to support long-term economic and social development</p>	<p>Goal 5:</p> <p>Jamaica has a well-defined and established governance, institutional, legal and regulatory framework for the energy sector, that facilitates stakeholder involvement and engagement</p>	<p>Goal 6:</p> <p>Government ministries and agencies are a model/leader in energy conservation and environmental stewardship in Jamaica</p>	<p>Goal 7:</p> <p>Jamaica's industry structures embrace eco-efficiency, natural capitalism and moves towards building a green economy</p>
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Strategies and Key Actions to 2030

Implementation Framework – Action Plans etc.

Monitoring and Evaluation

Policy Review

Focus Areas

- **Institutional Framework & Capacity Building**
- **Target Areas**
 - **Electric Utility**
 - **Transportation**
 - **Public Sector**
 - **Residential**
 - **Commercial & Industrial**
- **Codes, Standards & Labelling**
- **Building Codes for ECE**
- **ECE Market**
- **Working Hours – Flexi-Time, Telecommuting**

FY 2010/2011

Major Activities, Thrusts, Achievements and Challenges



**West Kingston
Power Plant
Groundbreaking**



**Wigton Expansion
Groundbreaking**








Achievements




- **Energy Policy passed in Parliament**
 - Draft sub-policies and consultations
 - Strengthening of stakeholders' collaboration

- **Cabinet approves arrangements for Liquefied Natural Gas (LNG) Project**
- **Continued linkages with energy organizations (e.g. OLADE)**
 - Technical training (e.g. JODI, energy modeling, RE technologies...)
 - Involved in technical meetings to improve member states' capacity (e.g. JODI, SIEE, SIEN)
 - Implementation of a National Energy Information System (SIEN)
- **Improved & expanded relationship with IDPs**

Achievements Cont'd

Deliverables	Status
1. National Energy Policy 3-yr action plan 2009-2012	Completed 
2. Facilitation of process to develop specific targets for the energy sector for the M&E framework	<ul style="list-style-type: none"> •Final stakeholder meeting to be held January 2011 •Targets and Indicators to be finalized by March 2011
3. Renewable Energy Policy	Final draft completed 
4. Waste-to-Energy/Energy-from-Waste Policy	Final draft completed 
5. Bio-fuels Policy	Final draft completed 
6. ECE Policy and protocols for the operation of public sector facilities and entities	Final draft completed 

Achievements Cont'd

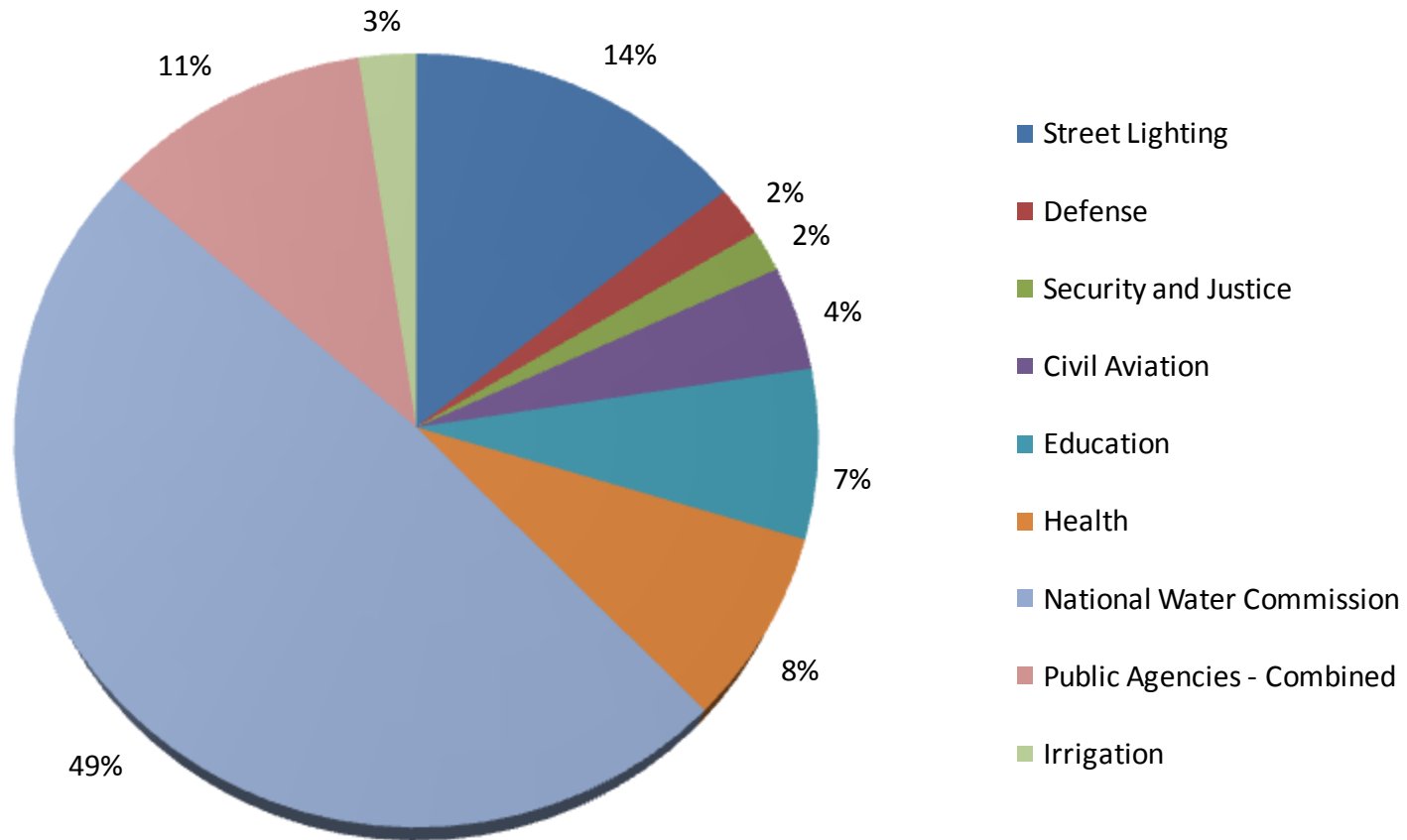
Deliverables	Status
7. Curriculum for the training of public sector officials on energy conservation	First draft prepared and final draft is expected to be completed by January 2011
8. Finalized Carbon Emissions Trading Policy and Implementation Plan	Final draft completed 
9. Policy paper on incentives/disincentives for the development and use of innovative technologies to improve energy efficiencies	Completed 
10. Recommendations for inclusion of energy issues in Revised National Transport Policy	Completed 
11. Online energy information clearing house mechanism	Population and operationalization by January 2011

Achievements cont'd

- **IDB Identification Mission (Dec. 1 – 4, 2010)**
 - Energy Efficiency and Conservation in Public Sector Project – EECTA (IDB-tech. asst)
 - Preparation of the Energy Efficiency and Conservation Loan Program (JA-L1025)
 - To be presented to the IDB Board for approval in 2011
 - IDB provides grant financing for EECTA... US\$350,000
 - Counterpart funding... US\$87,500
 - *Total amount available is US\$437,500*
 - Ministry pursuing a public sector energy efficiency investment program
 - Reduce government energy expenditures
 - Mitigate GHG emissions
 - Stimulate a clean energy industry in Jamaica
 - Government set a target of 15% reduction in public sector energy consumption
 - Recent audits done on NWC and public hospitals
 - Result shows significant ECE potential

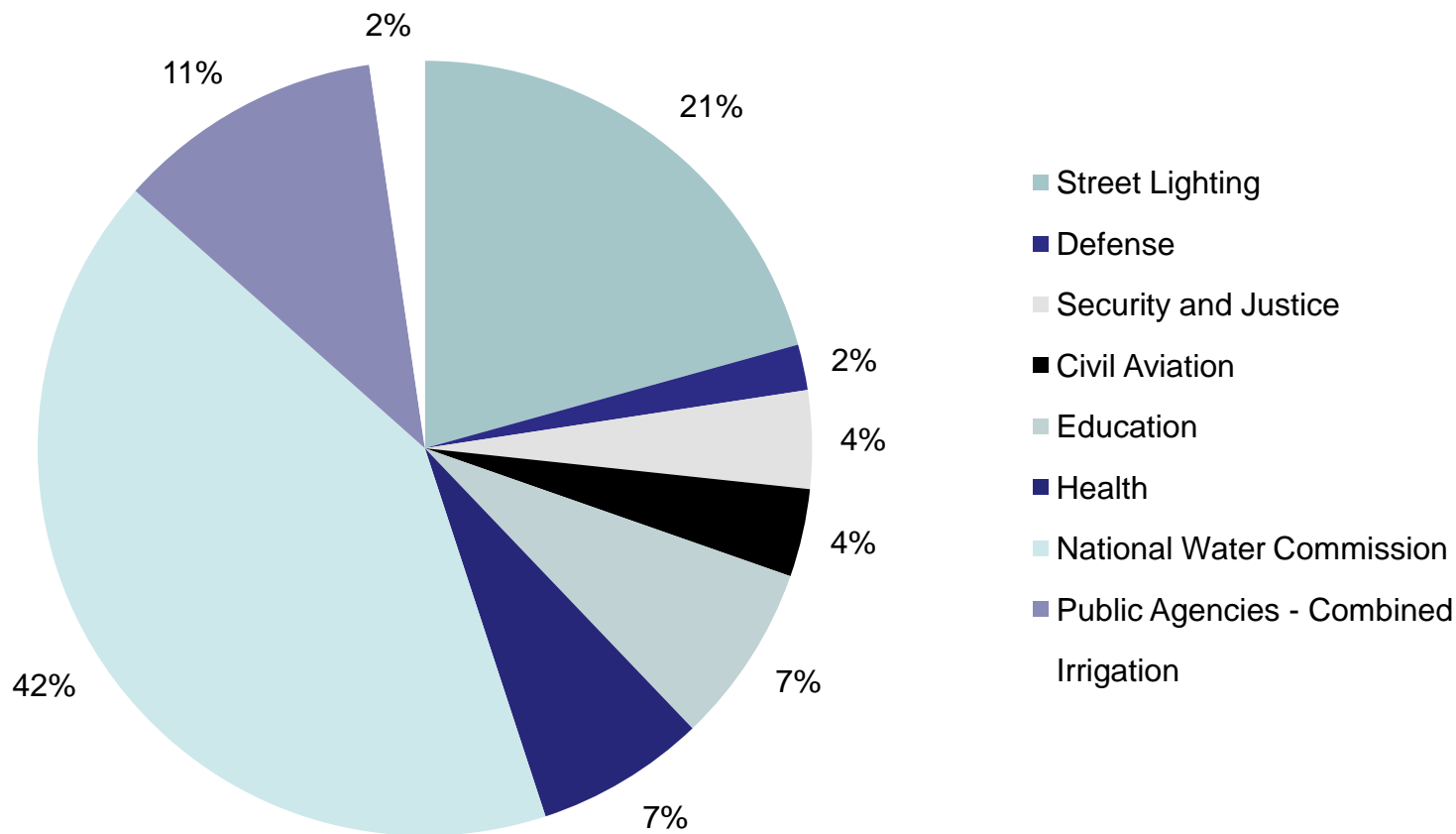


Electricity Consumption by Public Entity



Total annual public sector electricity consumption is 392.2 GWh, NWC accounts for 191 GWh (49% of the total). Eight entities account for 89% of all consumption.

Electricity Cost by Category



The total public sector cost of electricity for 2010 is estimated to be JMD 10.4 billion. NWC accounts for JMD 4.3 billion, or 42% of the total. Eight entities account for 89% of all GOJ electricity costs.

Summary: The Numbers

Adding up all of the ECE measures analyzed, Jamaica has the potential for significant and attractive investment:

- **Total estimated investment:** JMD 7.8 billion
- **Total estimated savings:** JMD 3.2 billion/y
- **Simple payback** 2.4 years
- **Existing gov't consumption saved:** 29%
- **National level consumption saved:** 3.5%
- **Electricity savings:** 115 million kWh/y
- **Electrical demand reduction:** 35-40 MW
- **Barrels of oil saved:** 200,000 bbl/y
- **Greenhouse gas emissions reduced:** 75,000 tCO₂/y

Achievements cont'd

- **World Bank Energy Security and Efficiency Enhancement Project**
 - Component 1: Strengthening regulatory and institutional framework to improve sector performance, increase private investment and transition to cleaner fuels
 - Operationalization of the National Energy Policy
 - Strengthening the regulatory framework and PPP monitoring capacity of the energy sector
 - Accelerate development of cost effective privately financed generation investment in the power sector
 - Diversification towards cleaner fuels (i.e. LNG)
 - Component 2: Developing Jamaica's energy efficiency and renewable energy potential
 - Component 3: Project management and M&E





Achievements cont'd

- **Clean Development Mechanism (CDM) Consultancy**

- Proposal to participate in Carbon Market

- **Continued stabilization of Petroleum Industry despite severe threats**
- **National capacity building in energy modeling**
 - IAEA-Jamaica Project (Human Resource Development and Energy Planning)
 - Training in Model for Energy Supply Strategy Alternatives and their General Environmental Impacts (MESSAGE)
 - Expert Mission to IAEA
 - Draft Sustainable Development Report (using modeling tools)
- **Partnerships/alliances with tertiary institutions (Utech)**
 - Design and development of energy database

Achievements Cont'd

Projects and Programmes	(IDP Support)
IDB	US\$350,000
IDB	US\$20,000,000
World Bank	US\$15,000,000
German Government	US\$750,000
EU	US\$310,000
OAS	US\$300,000
UNDP	US\$60,000
OLADE	US\$393.000
Total (preliminary)	US\$37, 163,000

Challenges and Mitigating Measures



- **Capacity constraints (institutional, technical / human resource)**
 - Implemented & proposed training
 - Approval of Organizational Structure - (Corporate Management Division)

- Extended period of no approved structure for the Ministry of Energy and Mining. Approval granted in 2011.
- Price volatility and petroleum dependence

Challenges and Corrective Measures cont'd



- Old legislative framework
 - Acts are archaic
 - Comprehensive review needed
 - Amendments to be made

- Monitoring and regulation of energy sector
 - Enforcement (e.g. gas stations licensed with RM courts)
 - Legislation to amend PQCA with CPC
- Curtailing illegal petroleum trade
 - Proposal to implement GPS tracking



Going Forward



Corporate Plan 2011-2014

- Conduct periodic assessment of new and alternative resource technologies to improve optimum energy mix
 - Exploration for oil and gas
 - RE development (wind, solar, hydro, biomass...)
 - Research in alternative options (nuclear, hydrogen fuel cells, OCT...)
- Continue to collect related sector data
 - Conduct periodic reviews of sector
 - Prepare reports and analysis
 - Inform planning, policy and decision making processes
- Periodic reviews of modeling tools and related sustainable development reports



Corporate Plan 2011-2014 cont'd

- Monitor compliance with regulations and other activities in the petroleum industry
 - Liaise with stakeholders and energy inspectors
 - Review and facilitate the licensing and registration processes (drivers, distributors, service stations...)
 - Foster industrial harmony
- Continue to provide oversight for electricity sector
 - Review of OUR recommendations (LCEP, regulations...)
 - Examine merit order dispatch arrangements
 - Research and monitor sector based on international best practices
- Continue to promote ECE initiatives
 - Monitor govt. consumption patterns for electricity, water and fuel
 - Assess impact of ECE initiatives in govt. agencies
 - Develop public awareness programmes



Corporate Plan 2011-2014 cont'd

- Identify and capitalize on various sources of funding for energy projects
 - Propose project developments (concept & formulation)
 - Project feasibility
 - Alliances with IDPs
 - Oversight for project implementation
 - RUP, REP, LNG, Electricity System, RE, ECE...
- Expedite policy implementation and conduct quarterly performance reviews of agencies



Operational Plan 2011/2012

- Energy Policy “Next Steps”
- Implementation of Energy Policy – Implementation Plan
- Finalization of Electricity Policy
- Approval and Implementation of Energy Sub-Policies
- Need to build capacity (institutional, technical and human)
- Review and Update various legislations
 - Electricity Lighting Act
 - PCJ’s RE exclusivity
 - PQCA (follow up with CPC)
- Continue to collect related sector data
 - Conduct periodic reviews, reports and analysis
 - Inform planning, policy and decision making processes



Biodiesel



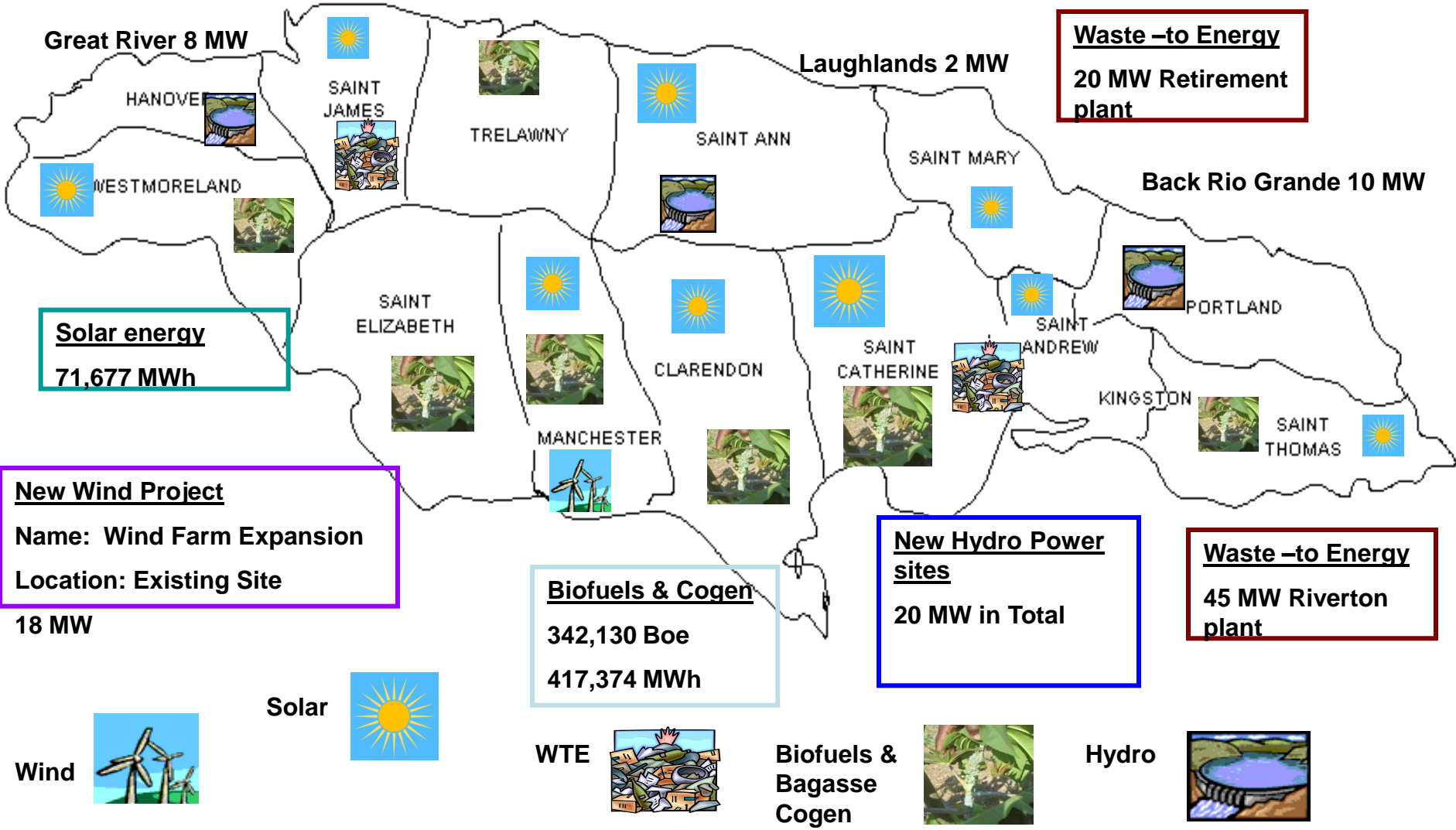
Castor Bean Seeds



Waste Vegetable Oil (WVO) Jatropha Seeds

- Jamaica has the potential to produce and use biodiesel made from feedstocks such as WVO or Indigenous crops such as castor and jatropha.
- The PCJ has commenced a small pilot project on biodiesel which will help to inform policy.

Renewable Energy Map 2015/16



Priority “Next Steps”

- Approval and Staffing of MEM’s Organization
 - Set –up Projects Office and Procure Staff
 - Strengthen Research, Monitoring and Evaluation
- Projects Implementation
 - Energy Security and Efficiency Enhancement Project
 - Public Sector Energy Efficiency Investment Project
 - Low Carbon Road Map and Carbon Mobilization
 - CHENACT - 2
 - Capacity Building Programme
- Policy Review and Updates
- Comprehensive Communication
And Public Education Programme



Thank You

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