

Energy Efficiency in Jamaica
The Current Situation:
Looking to the Future

Regional Intergovernmental Conference
on Energy Efficiency – UN ECLAC
Santiago, Chile
September 15 – 16, 2009

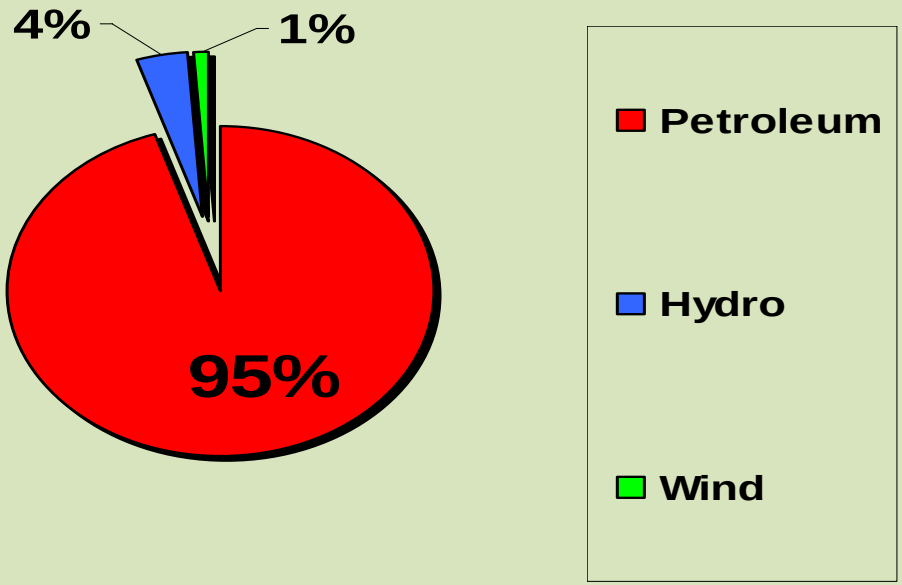
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PRESENTATION OUTLINE

- Profile of Jamaica's Energy Sector
- Energy Conservation and Efficiency (ECE)
- ECE Policy Issues 2008 – 2022
- Jamaica's National Energy Policy 2009 – 2030
- Energy Efficiency: Looking to the Future
  - Opportunities to reduce Consumption
  - Priority Areas
- Implementation, Monitoring and Evaluation Framework

Profile of Jamaica's Energy Sector

- **High dependence on imported oil**
- **High oil import bill**
- **Internal energy per capita consumption – 8.0 and excluding the bauxite sector 5.0**
- **Low efficiency of energy conversion and usage**
- **Only 5% of the energy supply mix comes from other sources**



Profile of Jamaica's Energy Sector Cont'd

Three (3) areas account for the largest share of petroleum consumption

- **Bauxite/alumina,**
- **Power/electricity generation and**
- **Transport**

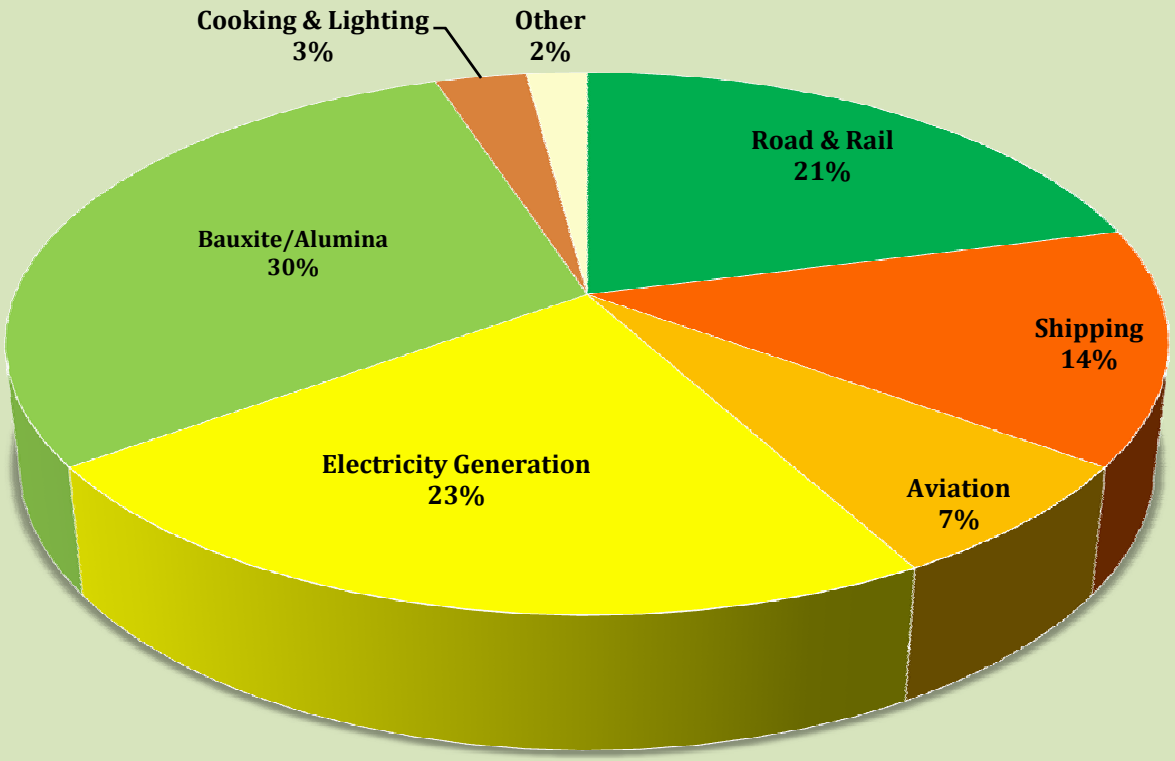
Low power generation efficiency and reliability

Need for an appropriate regulatory framework



Profile of Jamaica's Energy Sector Cont'd

Petroleum Consumption by Activity



Energy Conservation & Efficiency

- Energy Conservation
  - **Public Sector**
    - Energy Audits and Implementation of ECOS
    - 4M Bulb Project
    - Hospitals Energy Efficiency Programme
      - Retrofitting of Chillers
    - National Water Commission (NWC)
    - Schools
    - Police Stations
  - **Private Sector**
    - Energy Fund
  - **Transportation**
    - Solar
    - Ethanol Blend Fuel (E-10 Project)
  - **Policy and Regulatory Framework**

- Renewable Energies Potential in Jamaica – GTZ ECLAC Study
- **Renewable Energy (RE) Technologies**
  - Hydro
  - Wind
  - Bio-Fuels
  - Solar
  - Other
- **Centre of Excellence for RE**
- **Energy and the Environment**
- **Carbon Trading**

Energy Conservation & Efficiency Cont'd



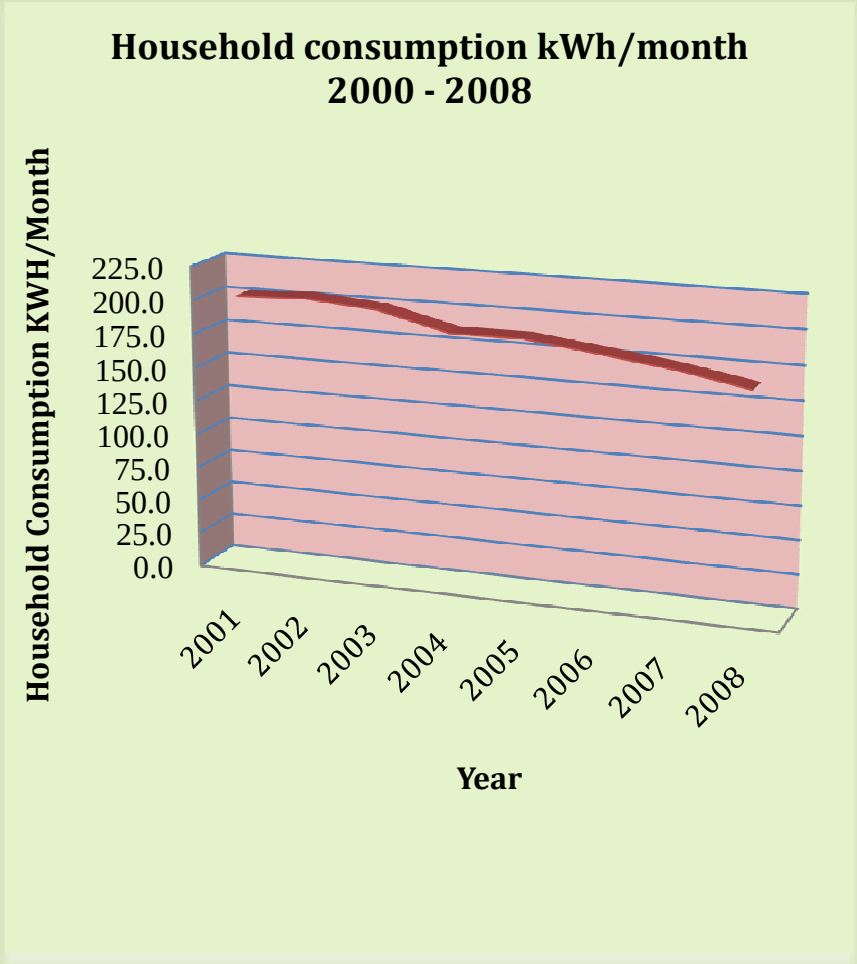
Household Energy Efficiency







Household Electricity Consumption





Energy Conservation & Efficiency Cont'd

Public Sector Focus

- **Ministries & Agencies**
- **Hospitals**
- **Schools**
- **NWC**
  - **Phase 1**
  - **Phase 2**
- **Public Lighting**
- **Traffic Signals**
- **Disaster Preparedness and Mgnt. Centres**

Initiatives

- **Energy Audits**
- **Implementation of ECOS**
- **CFL Programme**
- **Technical Corporation**
  - **Cuba Bilateral**
  - **Petrocaribe**
  - **IDB**
- **Energy Monitoring and Accounting**
- **Merit / Achievement Awards**

Energy Conservation & Efficiency Cont'd

Private Sector

- **Standards & Regulations**
- **ECE Market**
- **Electricity Service**
- **Transportation**

Initiatives

- **Building Code**
- **Fiscal Incentives**
  - **Custom Duty Waiver**
  - **GCT Exemption**
- **Energy Fund**
- **Bio – Fuels**
  - **Bio – Ethanol**
  - **Other**

Energy Conservation & Efficiency Policy Issues (2008 – 2022)

1. **Institutional Framework**
2. **Human Resource Dev.**
   - **Education & Training**
3. **Electric Utility**
4. **Transportation**
5. **Public Sector**
6. **Private Sector**
7. **Building Code, Eff. Standards & Labelling**
8. **ECE Market**



Jamaica's National Energy Policy (NEP) 2009 – 2030






"Securing Jamaica's Energy Future… Advancing Competitiveness…Promoting Sustainable Prosperity…"

Structure of the National Energy Policy 2009 - 2030

- **Executive Summary**
- **Overview and Context**
- **Global Trends and Emerging Issues Related to Energy**
- **Profile of Jamaica's Energy Sector**
- **SWOT Analysis of Jamaica's Energy Sector**
- **Jamaica's Energy Demand Projections to 2030**
- **Jamaica's Energy Policy Framework to 2030**
  - **Vision, Goals, Strategies and Key Actions to 2030**
- **Implementation, Monitoring and Evaluation Framework**

Principles Underlying the National Energy Policy 2009 - 2030

- **Framework for the sustainable management of energy resources and for development of viable renewable energy resources**
- **Advances in new, environmentally friendly technologies**
- **Predicates long-term and comprehensive approach**
- **Establishes linkages with other sectors and facilitates harmonization of other relevant policies**
- **Presents an integrated approach – 3e's (energy, economy & the environment)**
- **Fully consistent with other aspects of Government policy - Jamaica *"...the place of choice, to live, work, raise families and do business"***

Determining the Strategic Framework

- Analysis of the Profile of Energy Sector
- SWOT Analysis
- Energy Demand Projections and Analysis
- Global Trends

- **Vision 2030 Jamaica – National Development Plan**
- **PM Task Force on Energy – 2007**
- **Vision 2030 Jamaica – Energy Sector Plan**
- **2006 Energy Policy – Green Paper**
- **Draft Energy Conservation Policy 2008 - 2022**
- **International Best Practices**

"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"

Goal 1:	Goal 2:	Goal 3:	Goal 4:	Goal 5:	Goal 6:	Goal 7:
Jamaicans use energy wisely and aggressively pursue opportunities for conservation and efficiency	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	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	Jamaica's energy supply is secure and sufficient to support long-term economic and social development	Jamaica has a well-defined and established governance, institutional, legal and regulatory framework for the energy sector, that facilitates stakeholder involvement and engagement	Government ministries and agencies are a model/leader in energy conservation and environmental stewardship in Jamaica	Jamaica's industry structures embrace eco-efficiency, natural capitalism and moves towards building a green economy

Strategies and Key Actions to 2030

Implementation Framework – Action Plans etc.

Monitoring and Evaluation

Policy Review

Priority Areas – Related to Goals

1. Conservation and Efficiency
2. Modernized Energy Infrastructure
3. Renewable Energy Sources
4. Security of Energy Supply – diversification of fuels
5. Governance/Regulatory Framework
6. Government Ministries and Agencies as leader
7. Eco-efficiency and Green Economy



Energy Efficiency: Looking To The Future

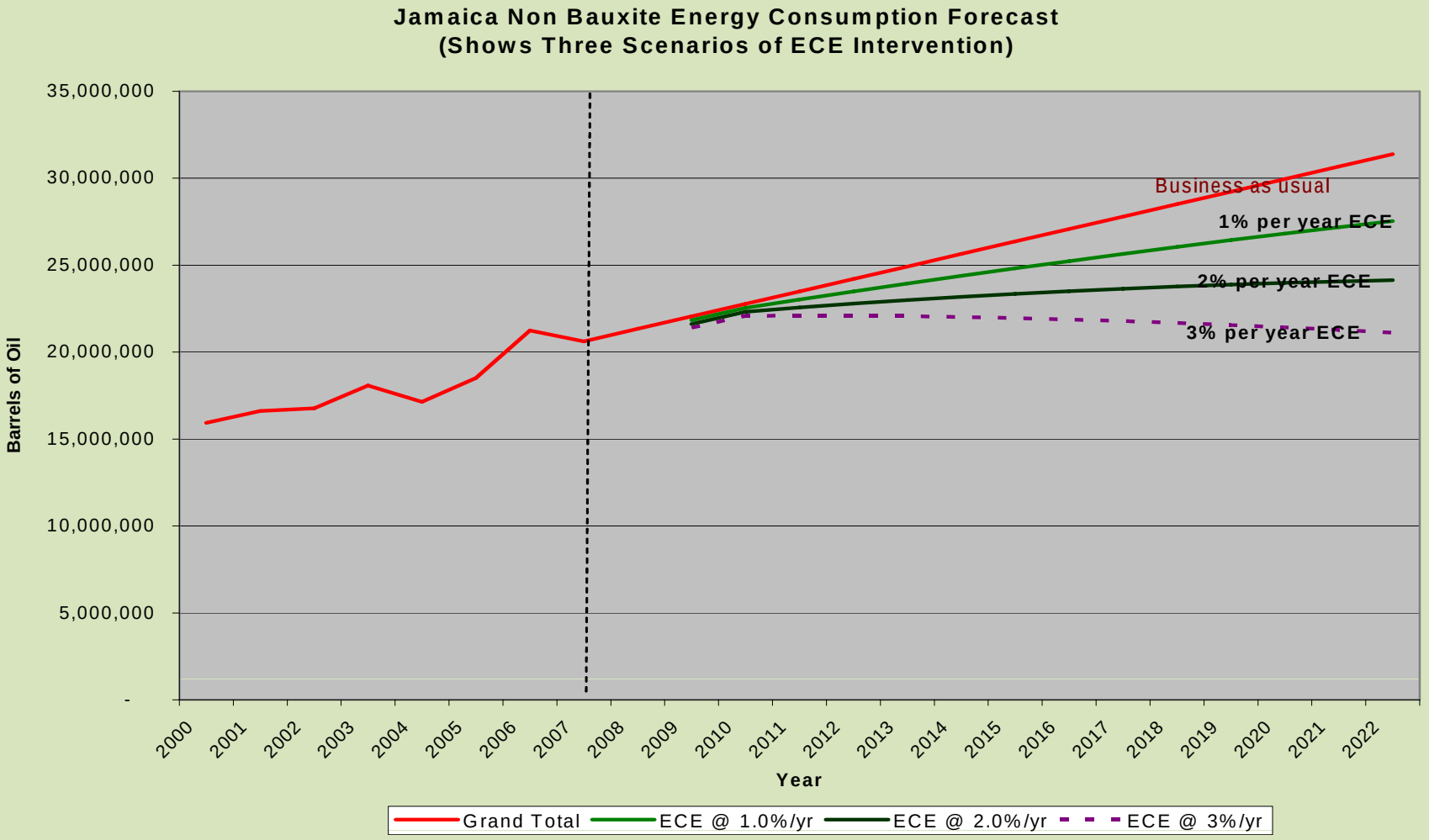
KEY ISSUES:

- **Low levels of awareness of Energy Efficiency (EE)**
- **Jamaica's high energy intensity index (EII)**
- **Low levels of EE in key sectors**
- **Low levels of EE from building designs, and electrical installations**
- **Energy Efficiency Potential in Jamaica – GTZ ECLAC Study, pending**

STRATEGIES AND KEY ACTIONS TO 2030:

- **Incentives / disincentives to promote EE in electricity, transportation, bauxite / alumina and other manufacturing sectors**
- **Legislation to support required investments**
- **DSM and public awareness programmes**
- **Building Code**
- **Public Sector**

Opportunities To Reduce Consumption



Priority Areas

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

INSTITUTIONAL FRAMEWORK

- **Ministry of Energy & Mining**
  - Energy Division
    - Policy & Planning
    - Assessment
    - Coordination & Monitoring
    - Public Education
- **PCJ – Energy Efficiency Unit**
  - Research and Development
  - Project Development and Appraisal
  - Project Implementation
  - Public Education
- **Others**
- Expanded Energy Efficiency Unit
- National Energy Efficiency Centre
  - Research and Development
  - Programme Development
  - Implementation of projects
  - Impact Assessments
  - Monitoring
  - Public Education
  - etc

Public Sector Energy Efficiency Programme

Technical Cooperation - IDB

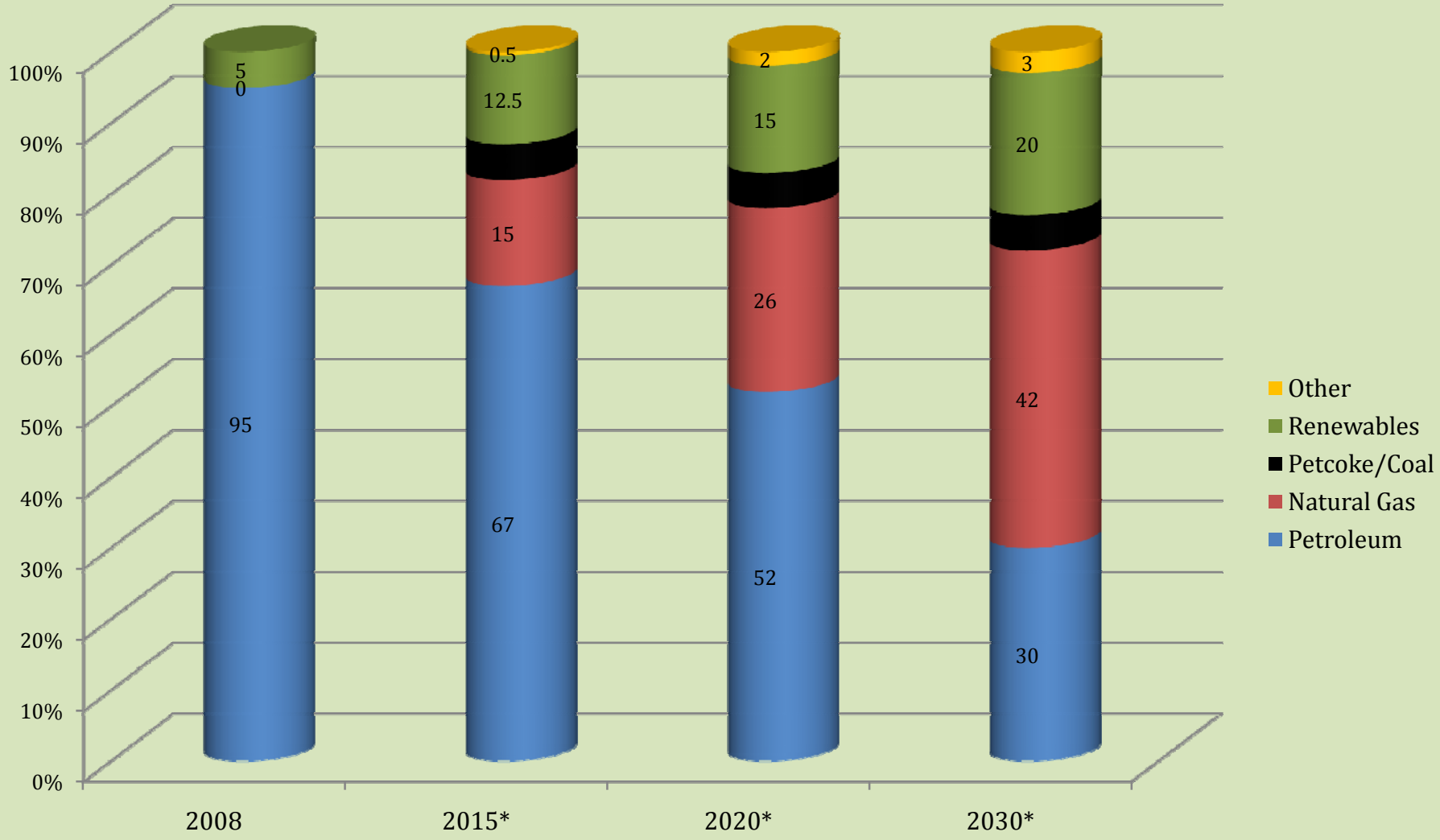
- **Objective:**
  - To support GOJ in ECE & Prepare EE Programme
- **Components:**

1. Evaluation of Energy Demand for Public Sector Bldgs.
2. Cost Assessment of Public Sector Demand
3. Cost / Benefit Analysis of Retrofitting Bldgs. with EE Equip.
4. Investment Plan for EE Equipment Installation
5. TOR for Energy Services Company

EE Equipment Procurement

Project Coordination & Capacity Building

Jamaica's Energy Supply Matrix



Building Codes, Standards & Labelling

Main Items for Focus

- Air Conditioning
- Lighting
- Appliances
- Engineering / Designs
- Energy Efficiency Market
- Energy Services Companies

Interventions

- ECE Policy Options
- Min. EE Ratio for ACs
- CFLs & LEDs
- Building Codes
- Fiscal Incentives / Disincentives
- Pre-paid meters
- Smart meters
- Testing and Certifications

Renewable Energy Projects (PetroCaribe Technical Work Groups)

General

- Capacity Expansion for CERE
- Net Metering Legislation

Wind

- Wigton Farm Expansion
- Wigton VAR Improvement
- Port Authority 2MW
- Wind Survey & Mapping

Solar (PV & Thermal)

- Sections of Portmore Community
- Rural Households (REP)
- Schools
- Public Lighting
- Manufacturing /Factory
  - PV Modules
  - PV Panels
  - Solar Water Heaters

Other Energy Efficiency Projects / Initiatives

Renewable:

- Munroe Wind Project
- Maggotty Hydro Expansion
- Restoration of Hydro plants
  - Rams Horn Hydro
  - Constant Spring Hydro
- Solar Water Heaters

Other:

- Waste to Energy
- Cogeneration
  - Ethanol Blended Fuel
  - E–10 Island wide roll-out
- Electricity Generation
  - Natural Gas (LNG)
  - Petcoke (bi-product from Petrojam Refinery Upgrade Project (RUP)

Some Indicators and Targets

% increase of renewables in energy mix
% increase in alternative energy
% reduction in Energy Intensity Index
% reduction of T & D systems losses in public electricity supply
% reduction in energy consumption by National Water Commission (NWC)
% of households with electricity
% reduction in households' income spent on energy
% increase in solar heating
% increase of vehicles using biofuels
% increase in fuel efficient vehicles on the roads
% reduction in average Heat Rate, electricity generation system
Establish and Maintain Strategic Fuel Reserve (boe/1000 population)
Management of Greenhouse Gas Emissions

Achieving Our Energy Goals – The Implementation, Monitoring and Evaluation Framework

Issues to be addressed by Established Goals :

Integration of

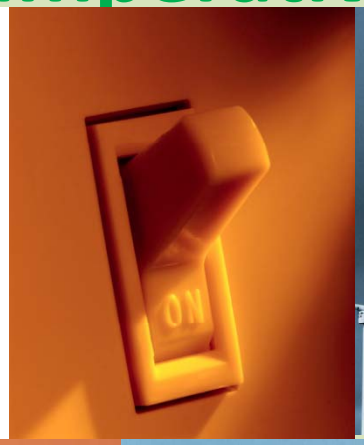
- **Strategies and key actions to 2030**
- **Action Plans**
- **Corporate Plans and Operational Plans**
- **Key Roles and Responsibilities**
- **Stakeholders' Engagement and Participation**

- **Structure of the Monitoring &Evaluation Framework**
- **Key roles and responsibilities**
  - Ministry of Energy & Mining
  - Petroleum Corporation of Jamaica
  - Ministry of Finance & Public Service
  - Ministry with Responsibility for the Environment (OPM)
- **Periodic Policy Review**

ECE - A Multifaceted Approach and A National Imperative

















THE END



THANK YOU