

COUNTRY REPORT FOR JAMAICA



Energy and Climate Change Course
KOICA
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Florida (USA)
Miami
Gulf of Mexico
Bahamas
Atlantic Ocean
Havana
Cuba
Dominican Republic
Haiti
Mexico
San Juan
Jamaica
Kingston
Caribbean Sea
Antigua and Barbuda
St. Kitts and Nevis
Dominica
St. Lucia
St. Vincent and the Grenadines
Barbados
Grenada
Trinidad and Tobago
Honduras
CENTRAL AMERICA
Nicaragua
Costa Rica
Panama
Panama Canal
Caracas
Colombia
SOUTH AMERICA
Pacific Ocean
Atlantic Ocean
400 mi
400 km
N
Arctic
Atlantic
Pacific
Indian
Pacific
Southern
©GraphicMaps.com

Land Area ~ 10,991 sq km

Highest Point ~ 2,256 m above sea level





The National Flag

The Birth of Our Nation

Symbolism of Flag Colours

"The sun shineth, the land is green and the people are strong and creative"

Black: the strength and creativity of the people;

Green: hope and agricultural resources.

Gold: the natural wealth and beauty of sunlight;

BASIC FACTS

Capital	Kingston
Official language	English
Type of Government	Parliamentary Democracy
Motto	"Out of Many, One People“
Total Population	Approximately 2.7 million
GDP per Capita	US$5,335
Currency	J$ (US$1 ~ J$90)
Renewable Water Resources	9.4 cu km (2000)
Environmental Issues	Deforestation, coastal waters polluted by industrial waste, sewage, occasional oil spills, damage to coral reefs, air pollution in capital from vehicle emissions
Other features	Tropical, humid, temperate interior, Blue mountains, Hurricanes (especially July to November)

Presentation Outline

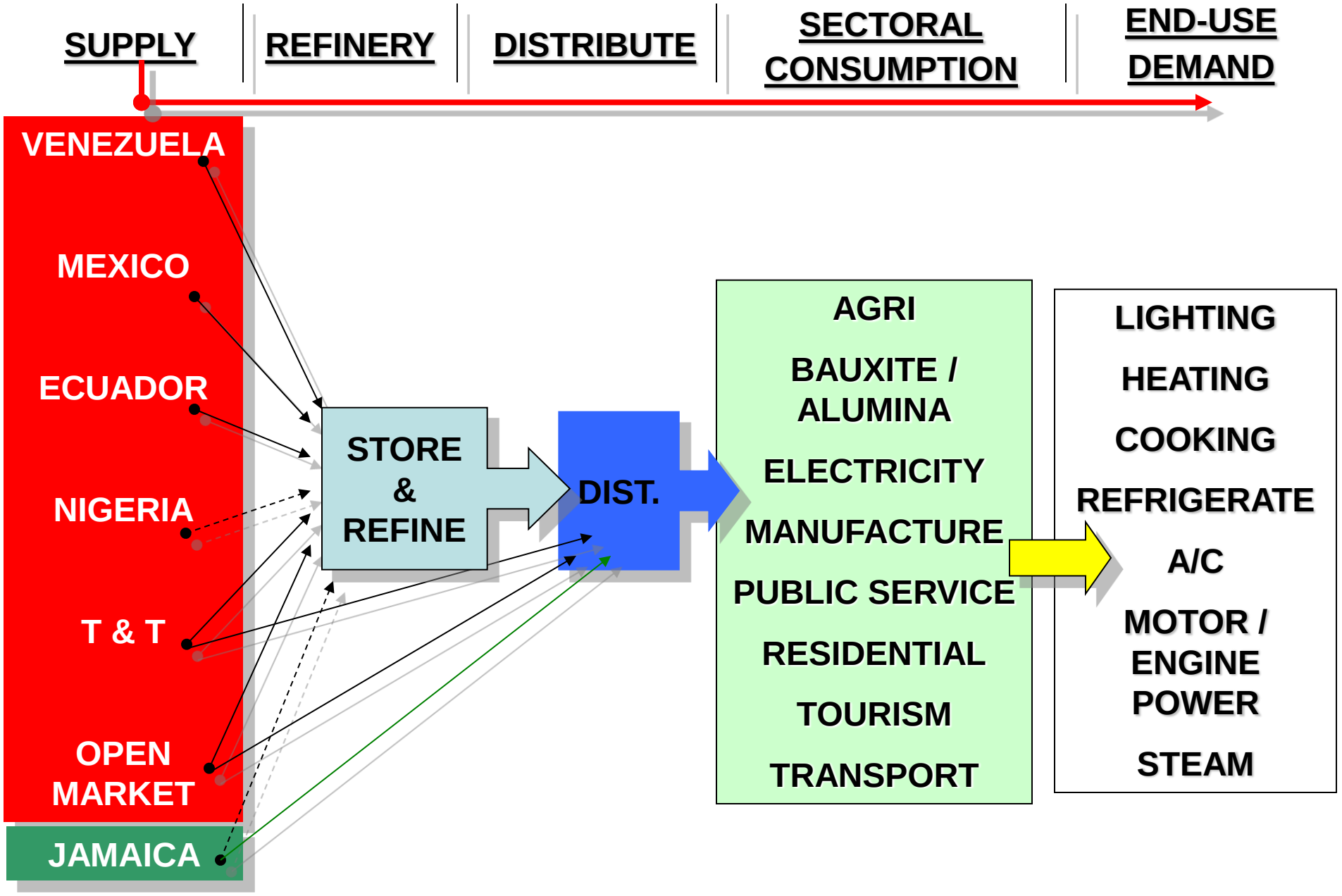
- **Overview of Energy Sector**
  - Petroleum Industry
  - Electricity Sector
- National Development Plan
- Energy Sector Policies
- Energy Conservation and Efficiency
- Environmental consideration
- Concluding Remarks

Overview of Energy Sector

- Imported petroleum accounts for over 90% of country's energy needs
  - Highly susceptible to international market conditions
- Petroleum prices review
  - Historic highs ~ June/July 2008
  - Domestic sectoral growth stifled with growth rate (-0.6% in 2008)
  - Petroleum prices subsided (late 2008/2009)
  - Prices trending upward (2010)
- Similar trends exist for other energy products



Jamaica Energy Profile



Market Structure

- Petroleum
  - Liberalized petroleum market
  - State owned refinery
  - 10 marketing companies
    - 1 state owned marketing company
    - 3 multinationals
    - 6 Local marketing companies (private)
  - Approx. 300 service stations island-wide



- Electricity
  - Largest supplier and single distributor: JPS
  - Electricity generation is done competitively
  - Three Independent Power Producers
  - Other producers
    - Bauxite/Alumina companies
    - Caribbean Cement Company Ltd
    - Sugar Factories

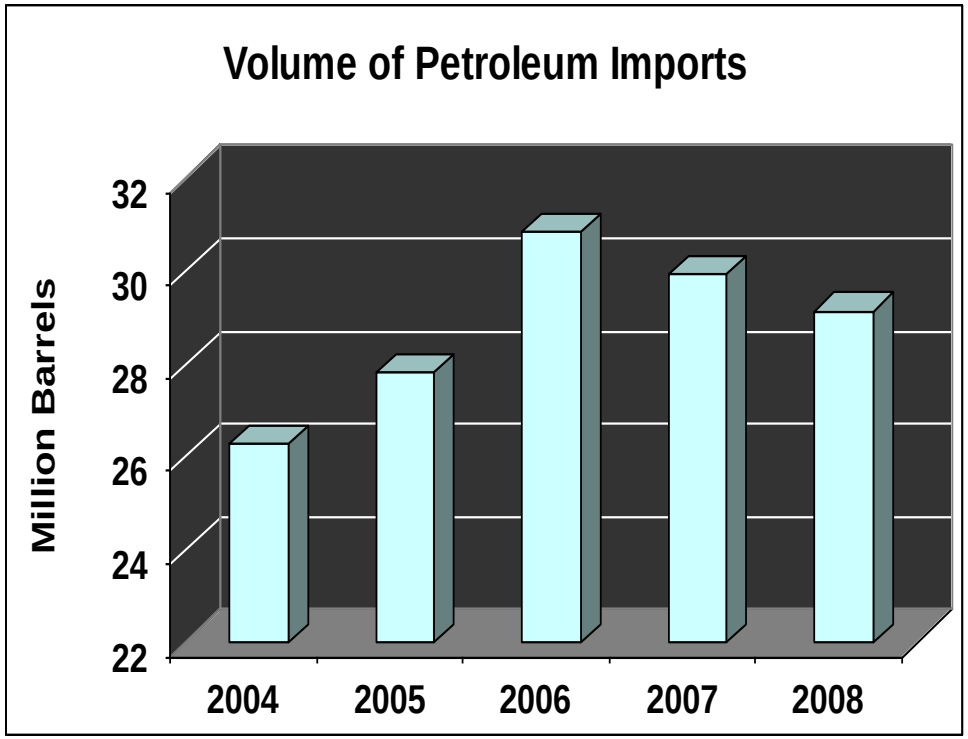


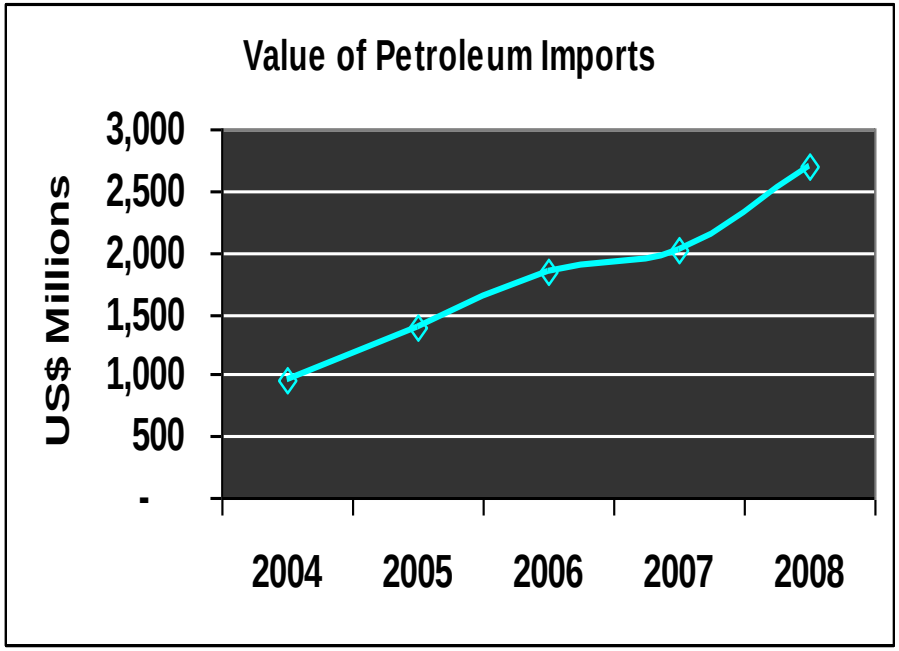
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Petroleum Demand

- Petroleum Imports
  - Refinery – 57%
    - Crude Oil -24%
    - Refined Products – 33%
  - Bauxite – 31%
    - Refined Products (HFO, Low Vanadium)
  - Marketing Companies – 12%
    - Refined Products (Distillates, LPG, other)

Petroleum Imports Cont'd





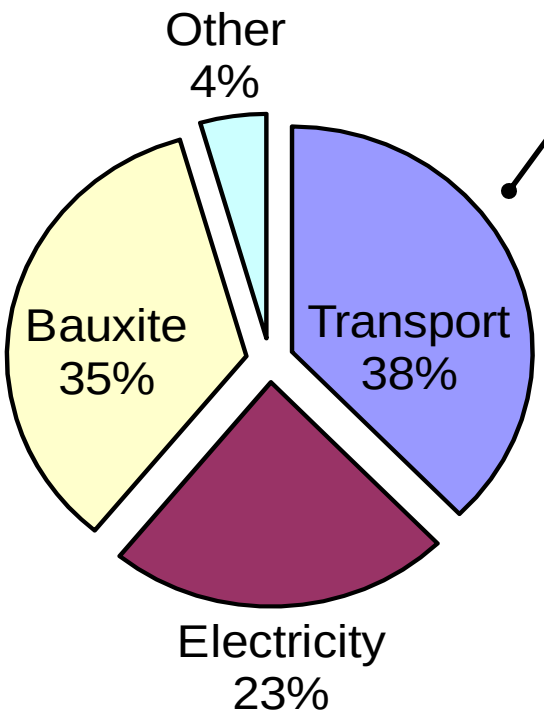
Imports and Consumption

	2006	2007	2008	2010**	2020**	2030**
Oil import bill (US$ million)	1,838	2,008	2,700	2,100	3,300	3,500
Oil imports (million bls)	31	30	29	30	33	35
Total Energy Consumption (million boe)	28	28	26	27	28 ...32	30…34

** Assumptions for projections: (1) conservation and efficiency efforts successful and continuous (2) alternative energy projects developed (ethanol, wind, bio-diesel, coal, CNG, Petcoke) (3) oil price **2010: US$70/bls** (4) oil price **2020-2030: US$100/bls**

Sectoral Consumption

- Primary oil consumers (96%)
  - Transport
  - Bauxite
  - Electricity



Road & Rail –22%



Aviation – 6%

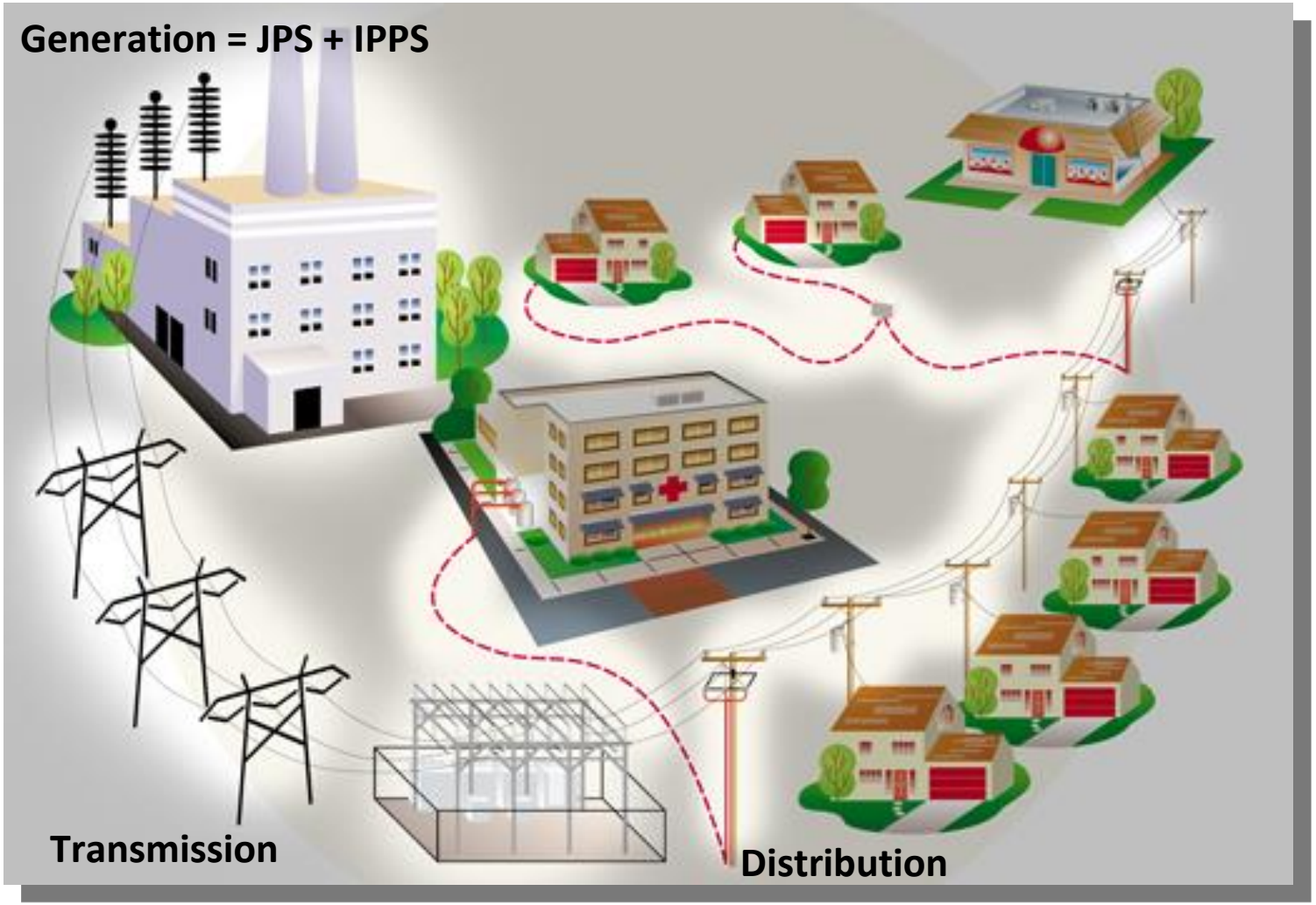


Shipping – 10%



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Electricity Sector



Electricity Consumption Profile

- Approximately 92% electrification
- Total Installed Capacity: ~ 830 MW

Customer Class	2008 # of Customers	% share of # of Customers	% of GWh Sales (2008)
Residential-Rate 10	525,746	89.33%	32.98%
Commercial-Rate 20	60,919	10.35%	20.78%
Power Service-Rate 40	1,568	0.27%	24.27%
Large Power-Rate 50	128	0.02%	18.87%
Streetlight-Rate 60	195	0.03%	2.22%
Power Interchange	3	0.00%	0.88%

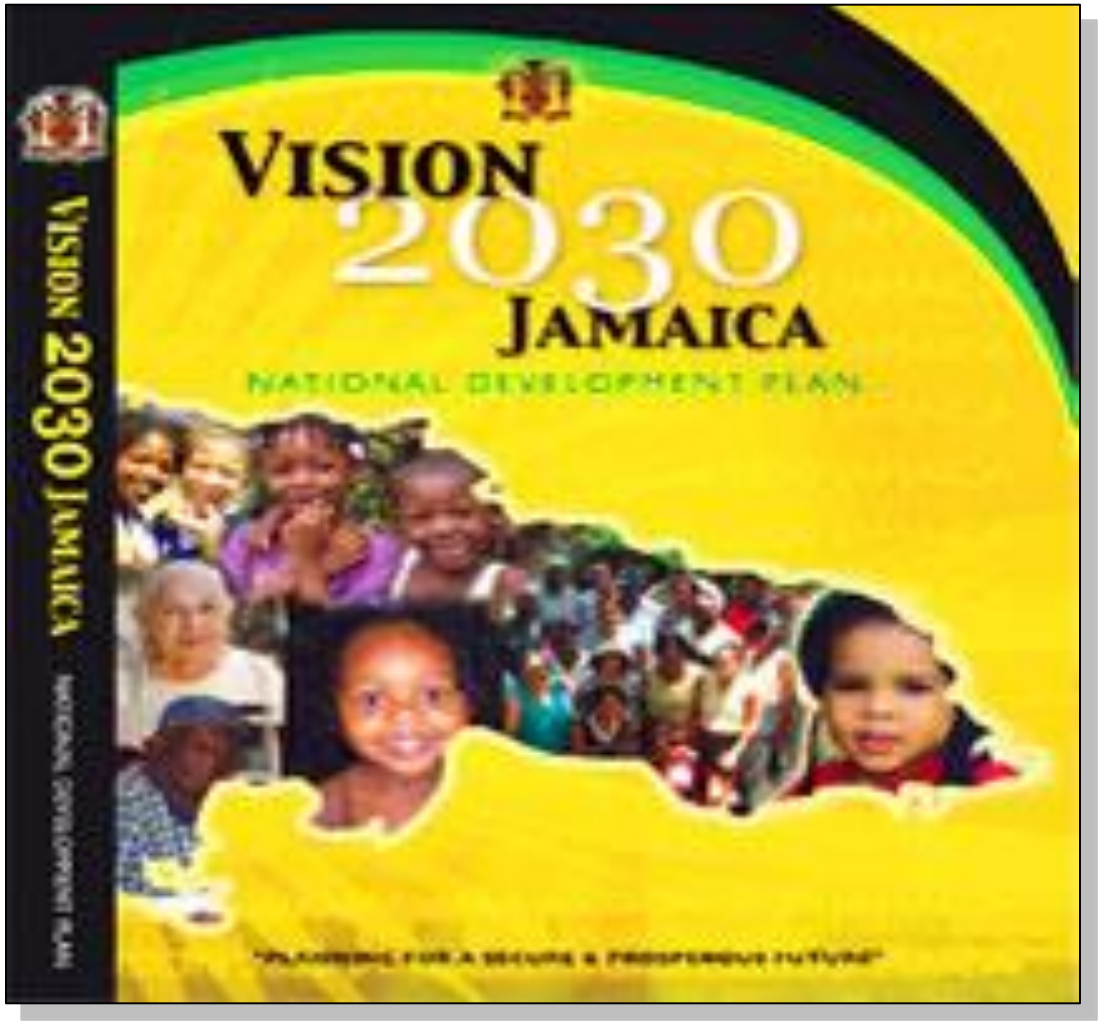
Net Generation Trends

	2006	2007	2008	2010**	2020**	2030**
Net Generation ('000 MWh)	4,043	4,079	4,133	4,270	5,340	
Losses (% of net)	23	22	24	20	18	17
IPP Grid Contribution (%)	33	31	30	30	30	33
Renewable Energy Grid Contribution (%)	5	5	5	10	15	20

Note: ** Projections guided by trends and Acres Report

Source: JPS and Acres Management Consulting

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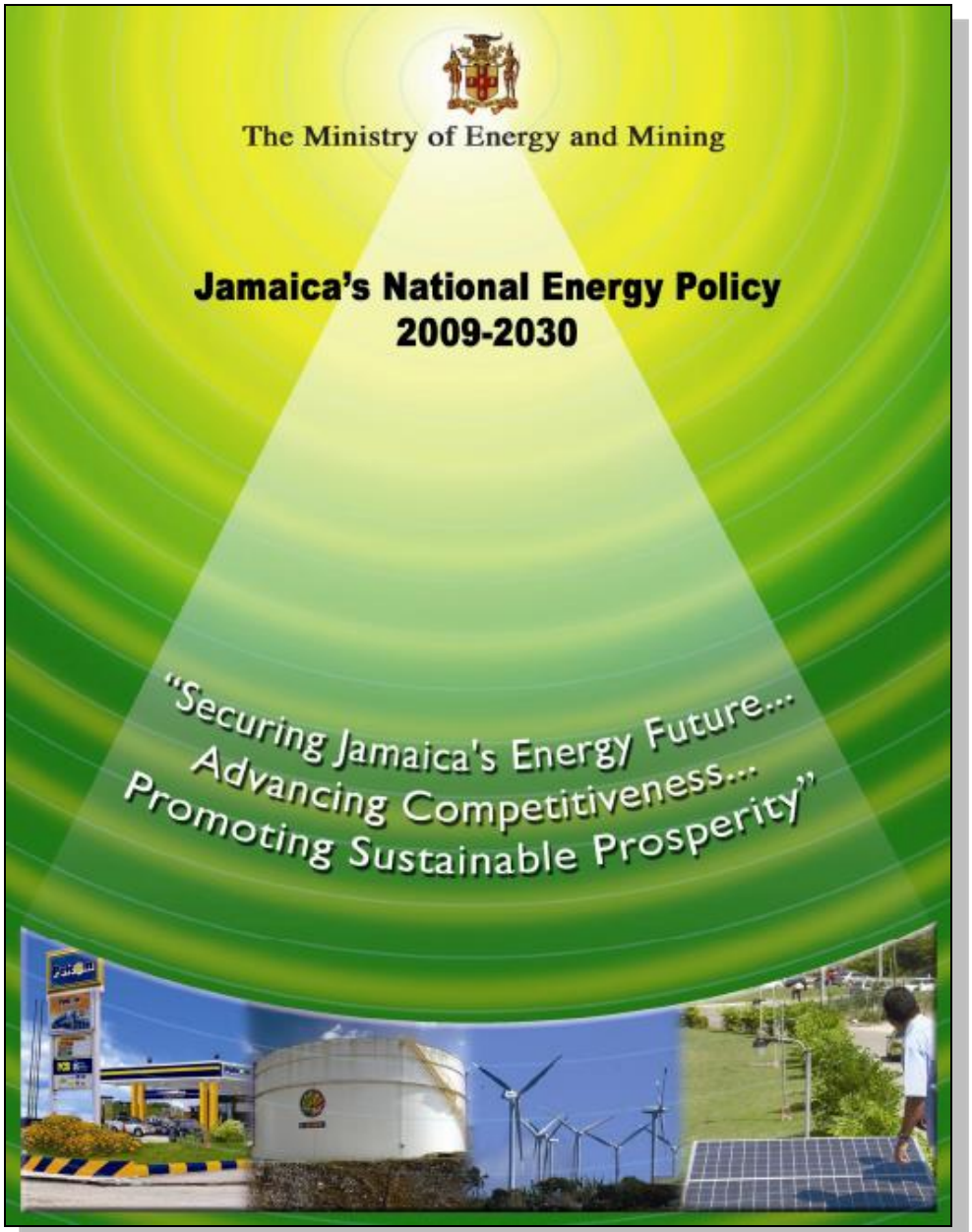
NATIONAL DEVELOPMENT PLAN

Jamaica's Vision

"Jamaica, the place of choice to live, work, raise families, and do business"

- ***"Developed Country Status"* by 2030**
- Long-term strategies presented for all sectors
- Environmental prudence examined

http://www.vision2030.gov.jm/



ENERGY SECTOR POLICIES

Energy Sector Strategy

- National Energy Policy: approved by Cabinet (Oct. 2009)
- Electricity Sector Strategy (draft)
- Policy addendum
  - Energy Conservation and Efficiency
  - Trading of Carbon Emissions (draft)
  - Bio-fuels (draft)
  - **LNG Policy (draft)**



http://www.mem.gov.jm/policy_develop.htm

Energy Policy Goals

Goal 1: Pursue aggressive conservation and efficiency path

Goal 2: Modernized and expanded energy infrastructure to enhance electricity generation transmission and distribution

Goal 3: Develop renewable energy sources to reduce carbon footprint

Goal 4: Security of supply to support macro-economic objective and environmental sustainability

Energy Policy Goals cont'd

Goal 5: Establish a regulatory framework for the energy sector

Goal 6: Government to lead in energy conservation and environmental stewardship

Goal 7: Industry structures that embrace/enhance international competitiveness

- The Energy Policy provides framework for implementation, monitoring and evaluation
- Ministry has responsibility for coordinating and monitoring its implementation

Legislative and Regulatory Framework

- Supporting agencies and authorities
  - Petroleum Corporation of Jamaica (www.pcj.com)
  - Office of Utilities Regulation (OUR) (www.our.org.jm)
  - National Environment and Planning agency (NEPA) (www.nepa.gov.jm)

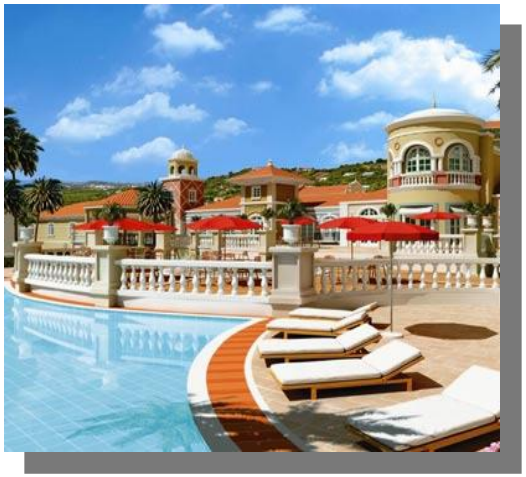


- Supporting Acts and regulations
  - All-island Electricity Licence
  - Electricity Lighting
  - Petroleum Quality Control
  - The Natural Resources Conservation Authority

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Industry

- Cogeneration systems
- Efficient electric motors and variable speed drives
- Power factor correction
- Efficient industrial lamps
- Steam system efficiency





Tourism Sector

- Lighting
- A/C
- Steam system
- Solar water heating
- Motion censors

Public Sector

- Efficiency measures in hospitals and schools
- NWC (approx. 50% of the public sector consumption)

Energy Audits and Loan Facilities Available

Residential

- Public education programmes
  - Turning off lights when not in use
  - Water saving measures
- Compact fluorescent bulbs
- Use of solar water heaters





Transportation

- Promotion of car pooling where applicable
- Public education programmes
  - Driving to achieve maximum fuel efficiency
- Rehabilitation of the railway system
- Introduction of bio-fuels



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Environmental Consideration



- Changing energy consumption habits
  - Cut down on CO_2 gas emissions
  - Reduce liquid and solid waste
  - Impact of global warming
- Advantage – rich biodiversity
  - Development of renewable resources
    - Less toxic
    - Reduced threat of water quality
    - Decline in emission levels (C02, NOX…)
- **Signatory to CDM / Kyoto Protocol**
- Mitigation studies



http://www.jm.undp.org/files/CCA-_Jamaica_3-final-unct.pdf

http://irfd.org/events/wfsids/virtual/papers/sids_ethomashope.pdf

Environmental Initiatives



- Waste disposal
  - Conversion of waste to energy
- Promotion of renewable energy
  - Renewable energy equipment manufacturing
  - Photovoltaic systems
  - Hydro stations
  - Wind farm expansion
  - Bio-fuels production & distribution
  - Biogas facilities
- Carbon credits
- Carbon tax
- Emission levies

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Concluding Remarks

- Awaiting Energy Policy approval in Parliament
- Recommend enactment of key legislation
- Infrastructure to facilitate development
  - Promote investment
- Technical capacity
  - Local research in alternative energy sources
  - Market research
  - Energy intensity studies
- Sustainable energy programs
- Positive impact on the environment

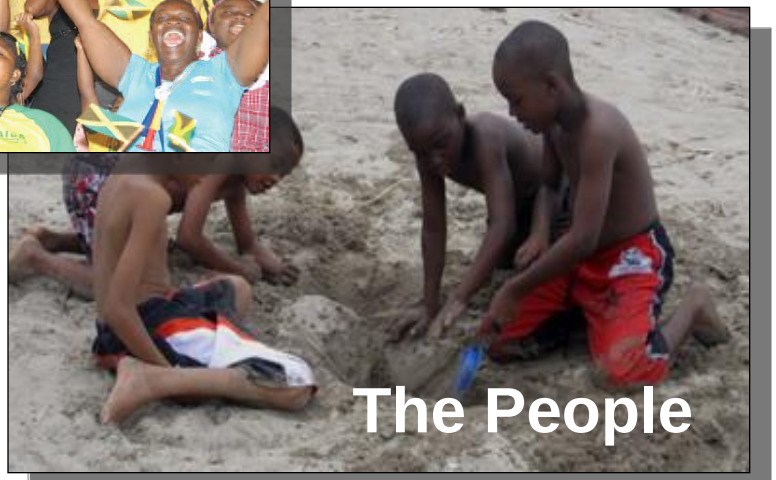
Preservation











Thank You… The End

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