The Urgent Need for a Coherent Renewable Energy Policy

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Why does RE policy matter?

URGENCY

The Situation

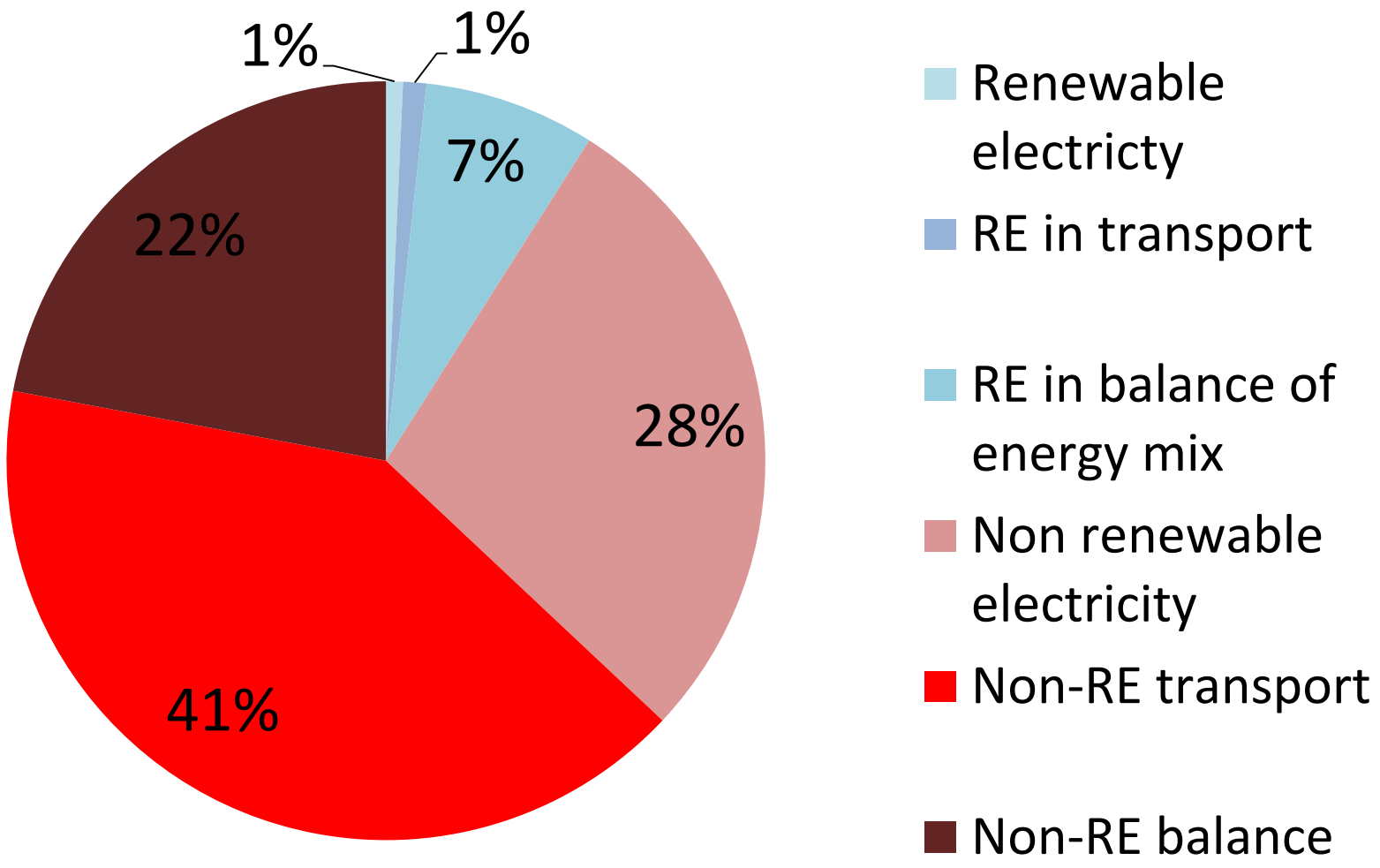
Energy

- High dependence on imported oil
  - Avg. annual import ~30 Mbbls
  - >US$2bn
  - 39% of imports (2009)
- High energy intensity:
  - 8.0 BOE per capita
- Low efficiency
  - Electricity generation: 29%
  - ~2 BOE /US$1000

Climate

- CO_2 @ 136%, CH_4 @ 248%
- Increase expected in extreme weather events
- Significant sea level rise expected mid-century

RE in our current mix



The Economic Imperative

PETROLEUM IMPORT COSTS		
YEAR	**IMPORT VOLUME (MILLION BARRELS)**	**IMPORT VALUE (US$ MILLION)**
2001	24.8	596.1
2002	25.2	640.7
2003	27.1	813.1
2004	26.1	943.4
2005	26.2	1,334.9
2006	28.1	1,837.5
2007	29.9	2,007.8
2008	29.7	2,706.7
2009	22.2	1,363.2
2010	20.5	1,619.9
2011	21.2	2,242.2

CURRENT CHARGES FOR METER # [redacted]

Billing Cycle	No. of Days	Billing Exchange Rate	Base Exchange Rate	Deposit	Multiplier
51	31	85.91	86.50	$.00	160

From: 24-Jun-2011 To: 25-Jul-2011

Register Type	Reading Type	Current Reading	Previous Reading	Description	Current Usage	Rate	Current Period Charges
KWH	AH[1]	9403	9343	Energy	9600	12.280	$117,888.00

Cust Charge			$660.00
SUBTOTAL			$118,548.00
F/E Adjust @ -0.518%			$- 614.08
Fuel & IPP Charge	9600	22.501	$216,009.60
Total Current Electricity Charges Before Tax			**$333,943.52**
Non Taxable Charges (up to 200 KWH)			$.00
Taxable Charges			$333,943.52
GCT @ 10% on Electricity Charges			$33,394.35
TOTAL CURRENT CHARGES			**$367,337.87**
ADJUSTMENTS			
Current Adjustments			$653,238.03

The Urgent Need to Diversify

- Diversification of the fuel mix
  - Economic benefits to not having “all eggs in one basket”
    - BoP
    - Risk management
  - Cheaper energy
- Leveraging abundant local resources
    - Solar irradiance & wind resources in some areas >90th percentile worldwide
    - Comparative advantage in biofuels (sugar)
    - Positive externalities for agriculture and rural economy
    - Local job creation

The Climate/Emissions Imperative

- International leadership in climate change
  - Jamaica “punches above weight” in int’l negotiations.
  - Demonstrations effect
    - with Annex 1 / developed nations
    - With other developing nations / SIDS
- Local environmental externalities
  - Water quality
  - Air quality
- Improving resilience through distributed generation

The Policy Background

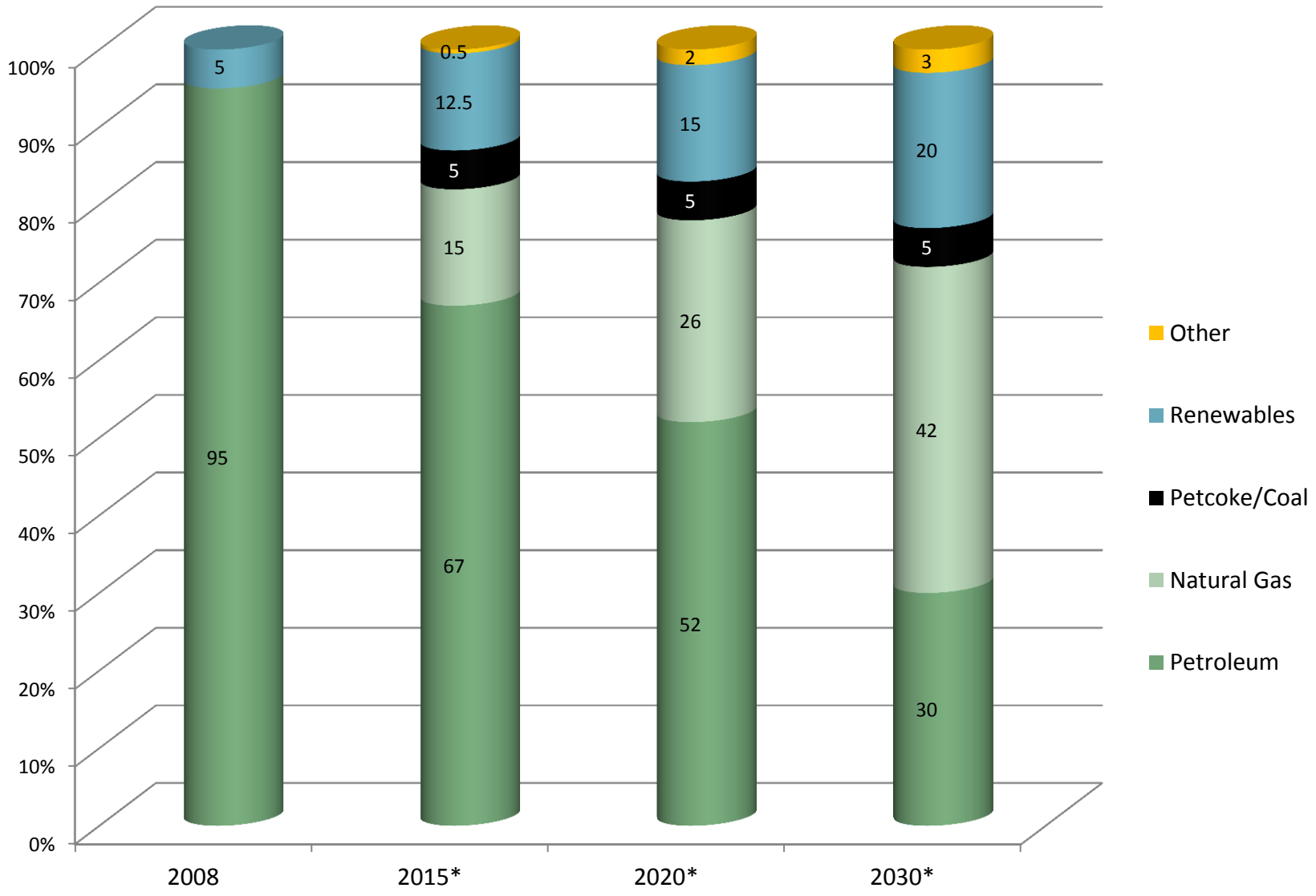
- The National Energy Policy 2009-2030

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 3: 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

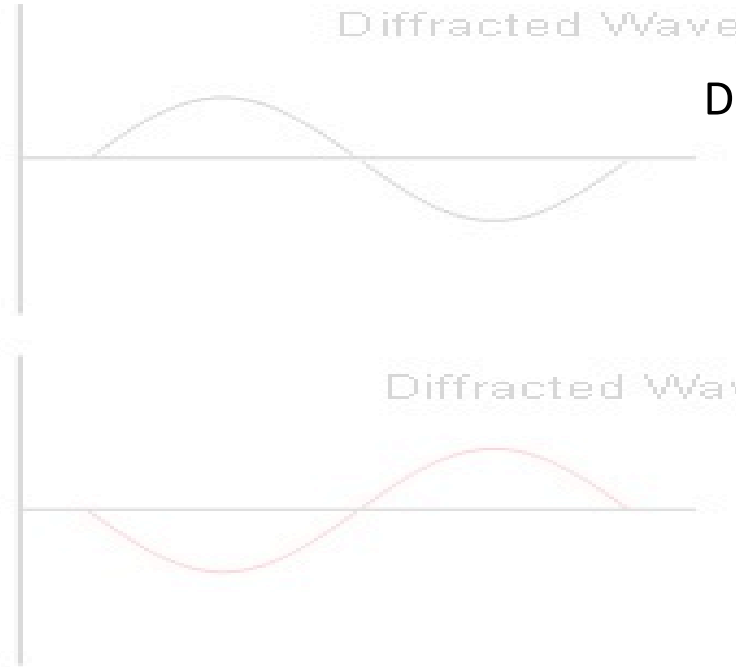
- Sub-policies (in draft): Renewable Energy; Biofuels; Waste to Energy; Efficiency; Carbon Trading

Jamaica's Electricity Supply Matrix

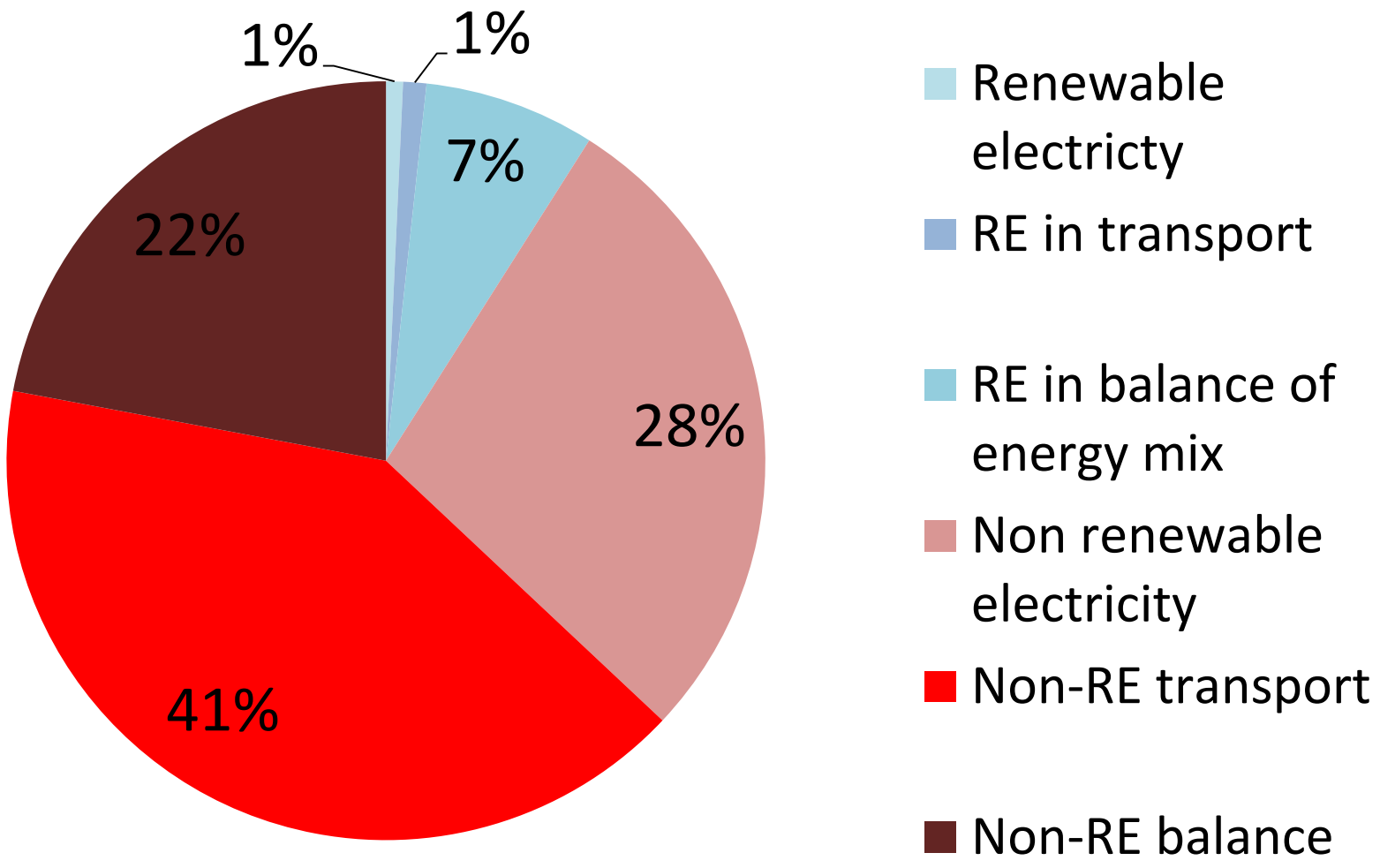


COHERENCE

Do policies work together? What are the consequences?

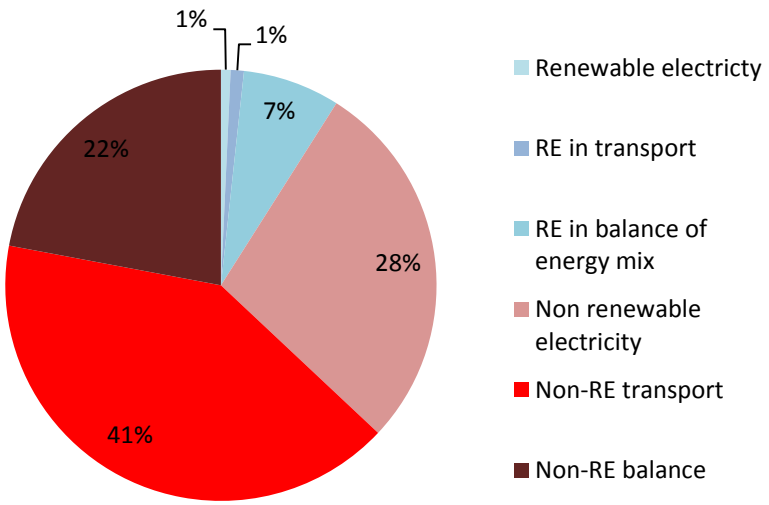


RE in our current mix



A Challenge at 20%, or 30%

RE in our current mix



RE Source	Potential Capacity, MW	Capacity Factor
baggasse	51.9	0.85
hydro	62.3	0.45
wte	85	0.85
wind	312.8	0.3
pv- CS	79	0.2
pv-US	75.7	0.2
Total	666.7	

- Massive investment required (~600 MW, equivalent to billions of USD)
- Utility licence revision required (current cap: 20% capacity)
- 30% of capacity, but still only 12% of electricity
- What about non-electricity energy?

Doable, but IMMENSE!

Policy Delays

- Sub-policies are meant to clarify and specify, but they have been in draft stage since 2009
  - Revision of implementation schedules
  - Carbon Credits Policy: complete overhaul?
- Other long standing drafts:
  - Building codes
  - National Transport Policy
  - Wheeling regulation

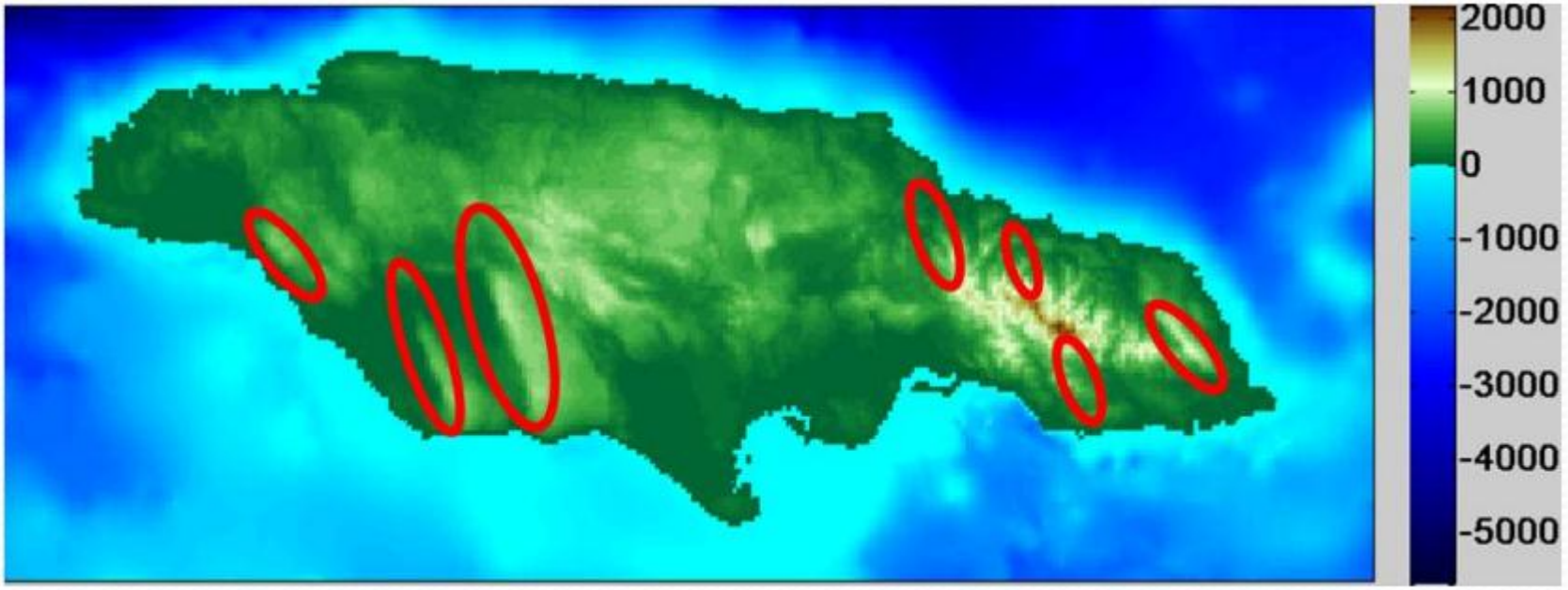
Counting RE: Forestry

- Solid renewable fuels form the majority of RE
- 57% of current “renewable” energy is forestry products (wood, charcoal)
- From 1998-2011:
  - 96,000 ha deforested out of an initial 683,583 ha
  - 14% deforestation
  - Losing 1% of forest per year

Forestry policy, energy policy and environmental policy need to be in concert

Land Rights, Water Rights, and Energy

Example: moving from wind mapping to project development



Wigton Windfarm Ltd. Capacity Building Workshop, July 13, 2012

- Issues of land tenure, procurement, water rights, environmental protection, permitting etc. make development difficult
- Not clear HOW a developer secures land

Regulating Electricity

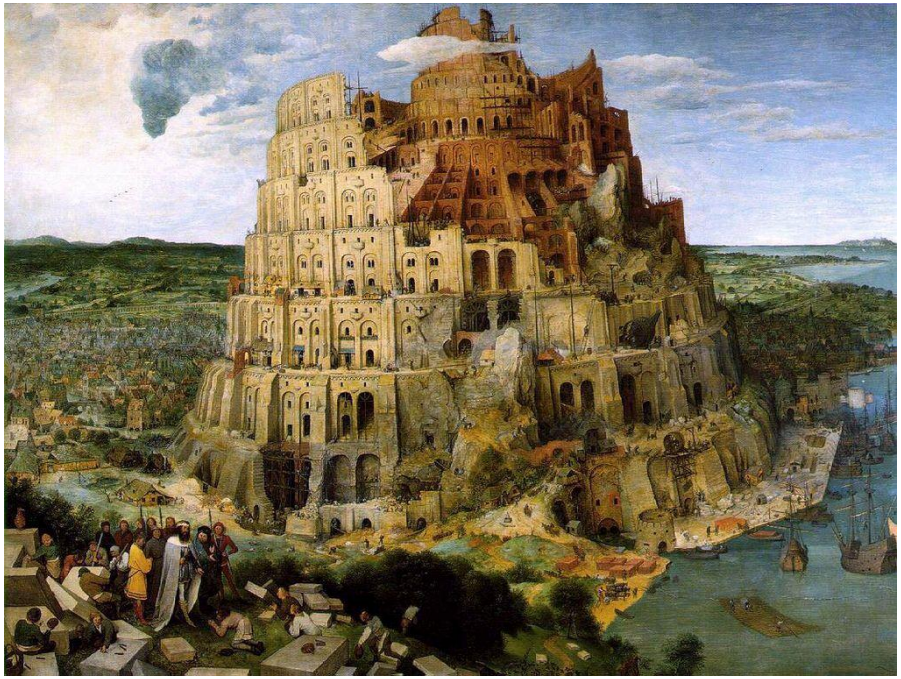
- Pricing: differing views within government
  - MSTEM – FITs, or an amended avoided cost
  - OUR – avoided cost, and/or competitive pricing via tender
  - Uncertainty for investors
  - Slow implementation
- Liberalization
  - Monopoly vs. competition
  - Access
    - Net billing challenges
    - Delays with wheeling

Fiscal Policy

- Disparity in the Application of GCT
  - SWH vs. applied to parts and accessories
  - Fluorescent Lamps vs. LEDs
- Issues with application of customs duty
- Taxing transportation
  - Taxing usage vs. acquisition
  - Liberalization vs. congestion
  - Infrastructure

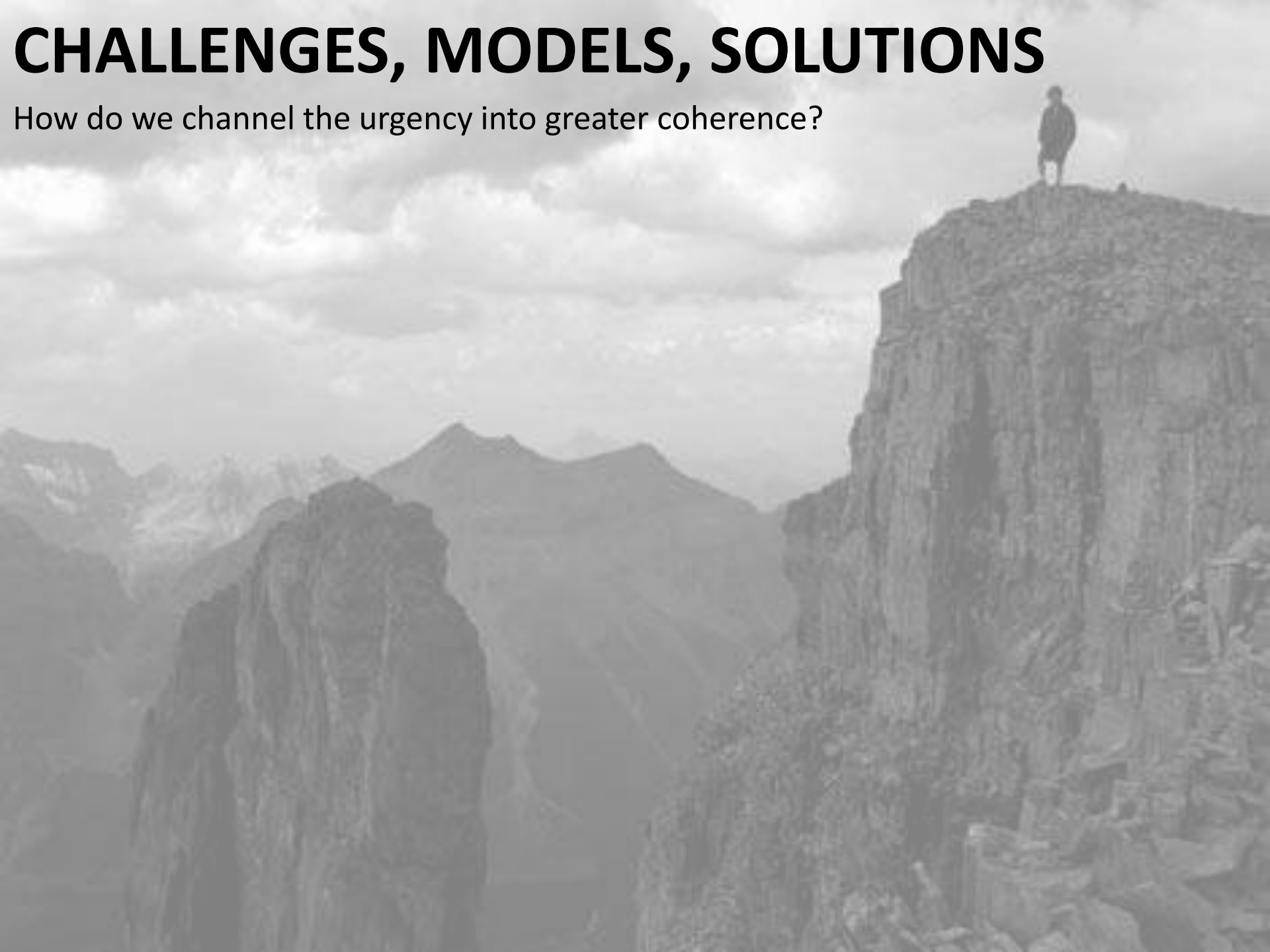
Working Together?

- Many Ministries and agencies with energy concerns / projects
- Greater coordination needed
  - Jamaica Energy Council



CHALLENGES, MODELS, SOLUTIONS

How do we channel the urgency into greater coherence?



Barbados: Harmonization of Policy

High levels of SWH deployment (~50k, vs 20k in JM), plus job creation.

- Harmonization of energy policy, tax policy and tourism incentives
  - High level buy-in
  - Elimination of perverse incentives in tourism sector
  - SWHs as tax deduction
  - Higher tax rates on conventional technologies
    - Almost revenue neutral: cumulative USD $10 million over 4 decades
- **Long term, energy savings 13 lager than foregone revenue**.

China: Project Driven Development

- Many cities and regions focus development issues around a concrete project, rather than individual ministerial policies
  - Regional differentiation
  - Function of a peculiar political culture?

- For Jamaica: Freezone model?

The DR: Simplified Governance

Renewable Energy Incentive Law (57-07)

- Merging functions, agencies, and perhaps Ministries
  - Better integration of planning
  - Better usage of human capacity
  - Less division of power
- Example: Dominican Republic
  - National Energy Commission
    - Empowered by law
    - Merges functions, departments etc. under a single, organic theme.

Conclusion

- Commitment to the goal must to be firm
- Concretization of goal needed
- Reorganize around the goals

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