

Energy Efficiency and Carbon Emission Reduction: a review of Guyana's Low Carbon Development Strategy (LCDS)

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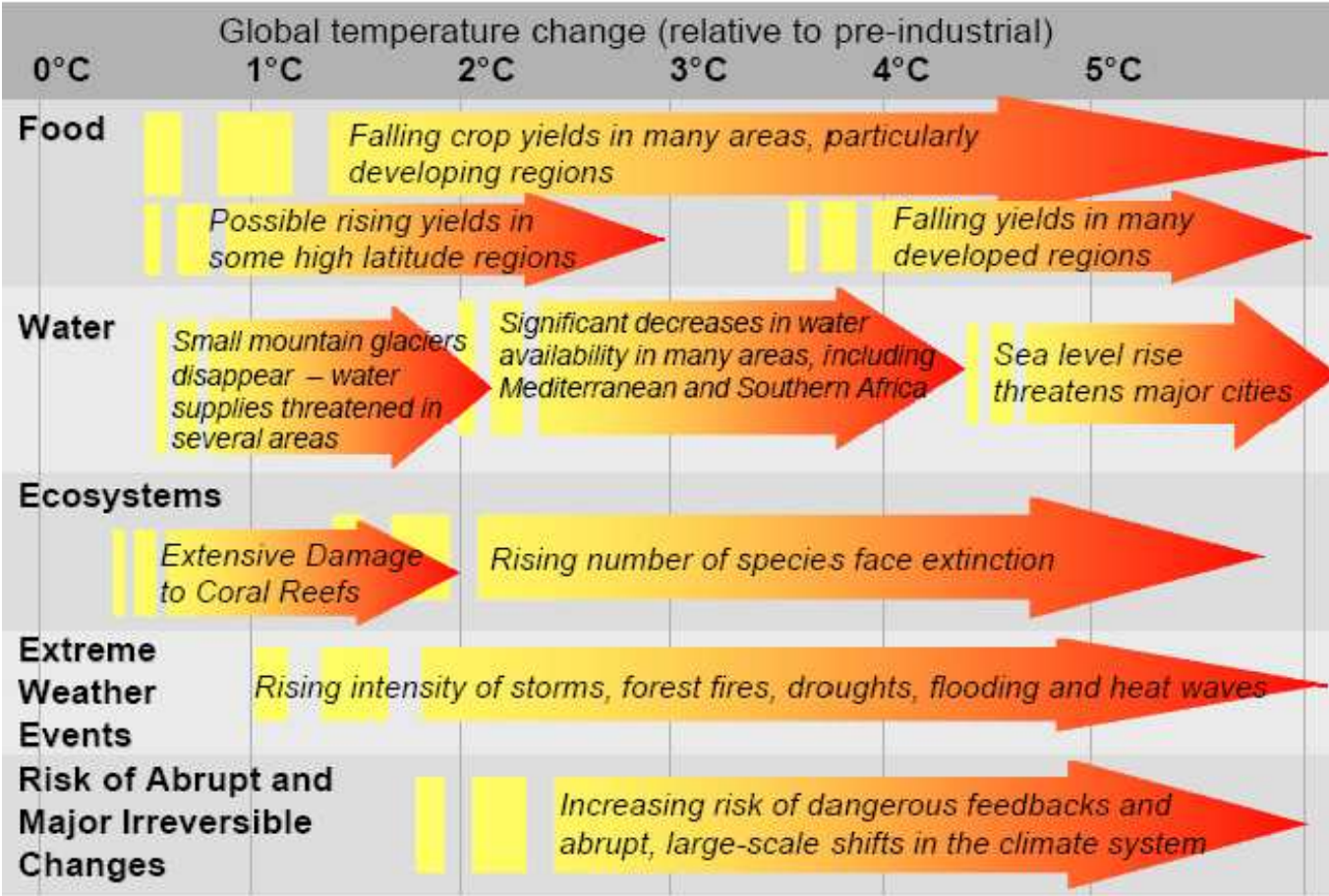
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Outline of the Presentation

- Introduction
- The Role of Renewables and Energy Efficiency in a Low Carbon Economy
- The Guyana Scenario
- Guyana's Low Carbon Development Strategy: a review of Renewables and Energy Efficiency
- Conclusion and Recommendations

Introduction

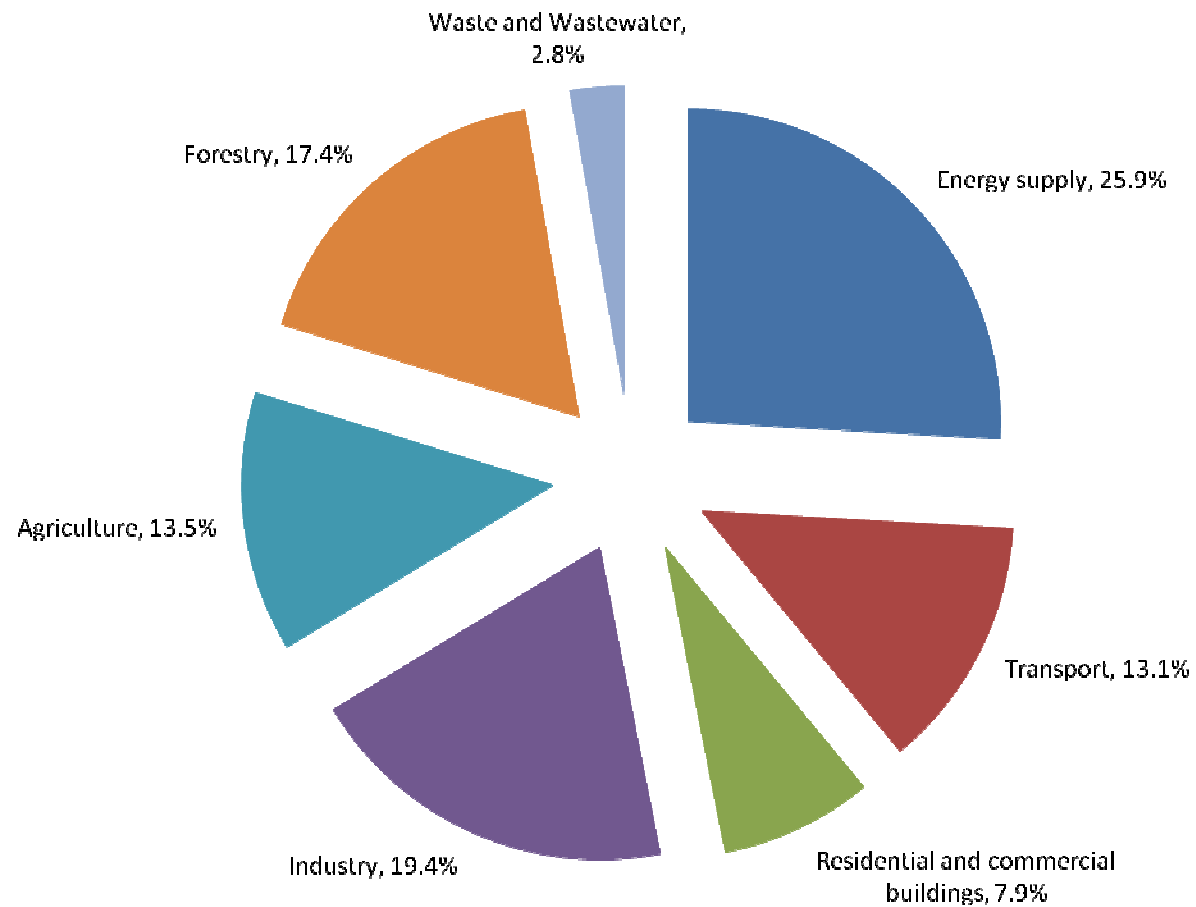
Projected Impacts of Climate Change



Introduction cont'd

- Cost of inaction at the Caribbean levels ranges from five percent of current GDP in 2025 to 22 percent in 2100 (Bueno *et al.*, 2008)
- Two responses to climate change: adaptation and mitigation
- Global increases in CO₂ concentrations are due primarily to fossil fuel use – 56.6%

Sectors contribution to total anthropogenic GHG emissions in 2004 in terms of CO₂-eq (IPCC, 2007)



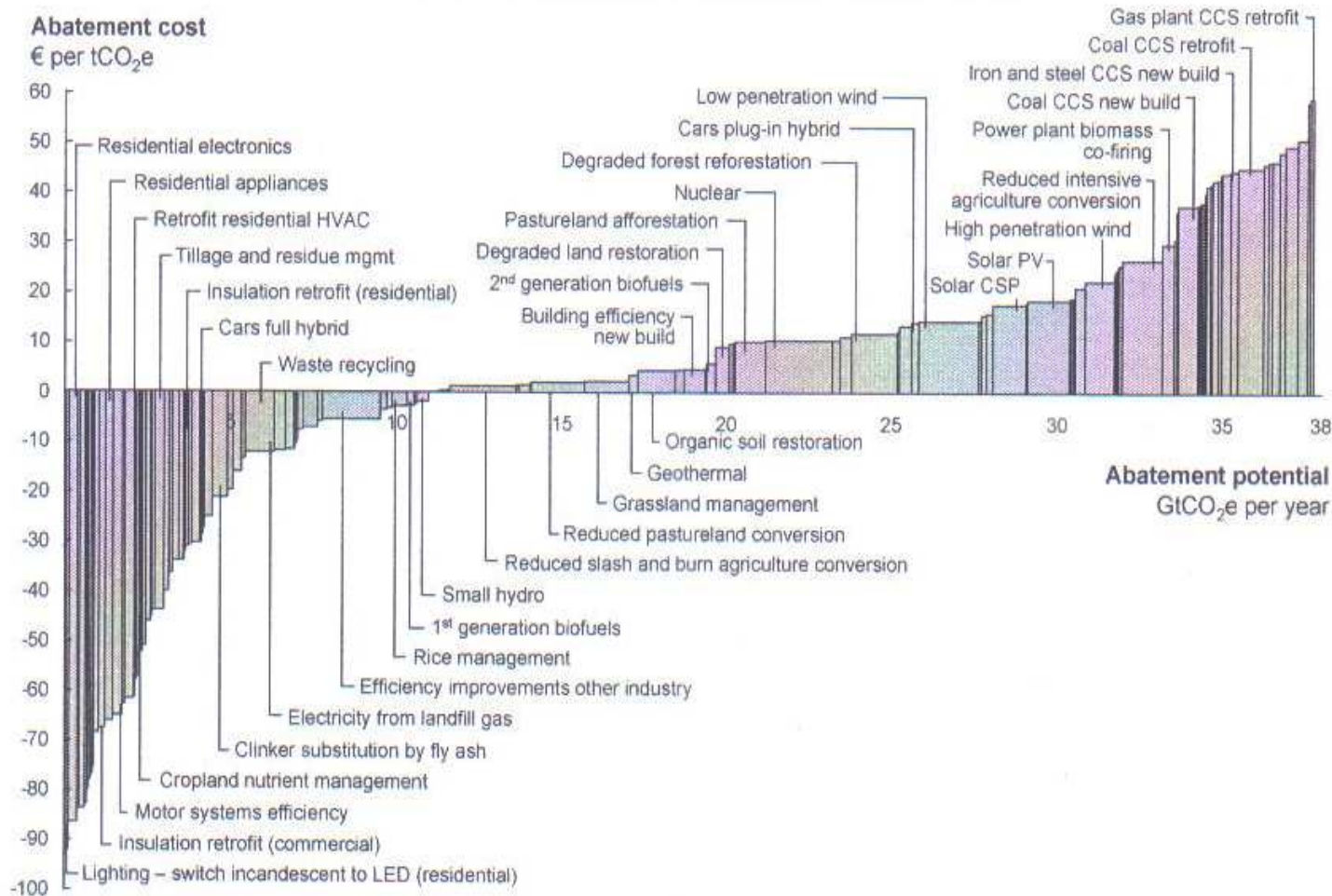
Role of RE and EE in a LCE

- Low Carbon Economy (LCE) is one with minimal output of (specifically) carbon dioxide emissions.
- LCE must be funded on a sustainable energy policy and according to Prindle *et al.* (2007, p. 1):
“Energy efficiency and renewable energy are the two pillars of sustainable energy policy. Both resources must be developed aggressively if we are to stabilize and reduce carbon emissions in our lifetimes.”

Role of RE and EE in a LCE

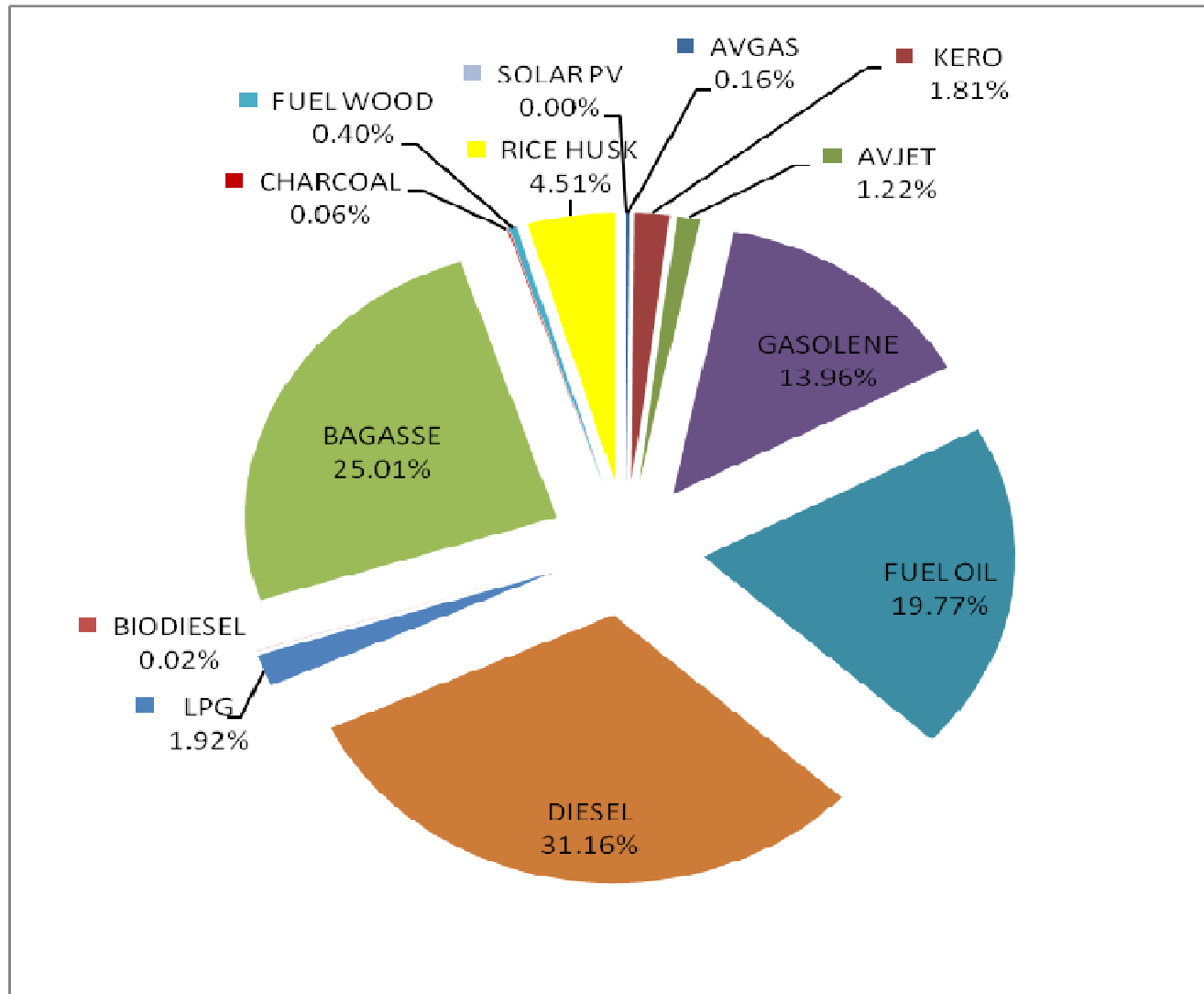
- Developing countries could reduce their energy demand growth by more than half – from 3.4 to 1.4 percent annually in the next 12 years – and reduce their energy consumption in 2020 by 22 percent from the projected levels.
- By adopting energy-efficient technologies (McKinsey Global Institute, 2008)

Global GHG abatement cost curve beyond business-as-usual – 2030 (Source: Mc Kinsey & Company, 2009)

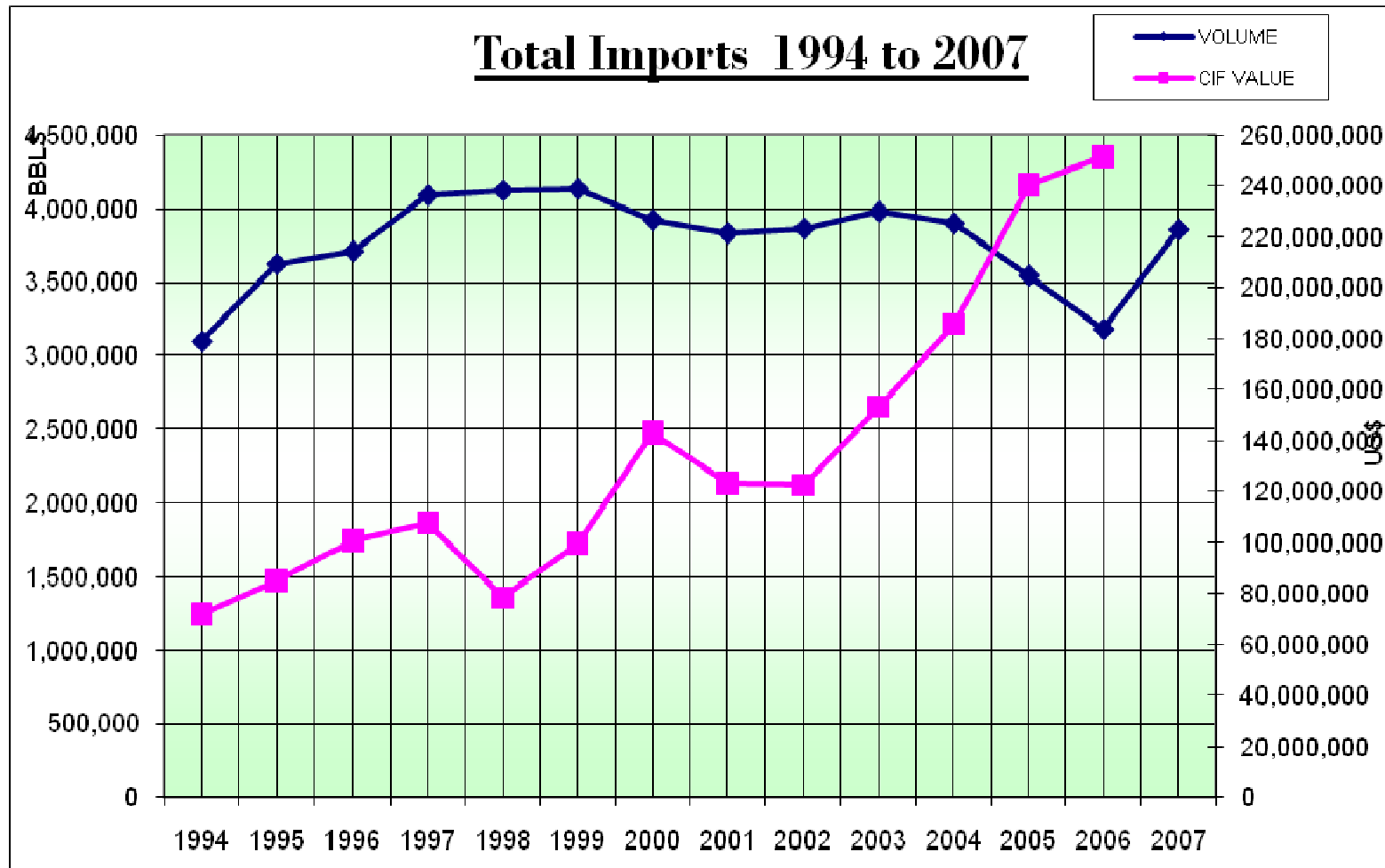


Note: The curve presents an estimate of the maximum potential of all technical GHG abatement measures below €60 per tCO₂e if each lever was pursued aggressively. It is not a forecast of what role different abatement measures and technologies will play.
Source: Global GHG Abatement Cost Curve v2.0

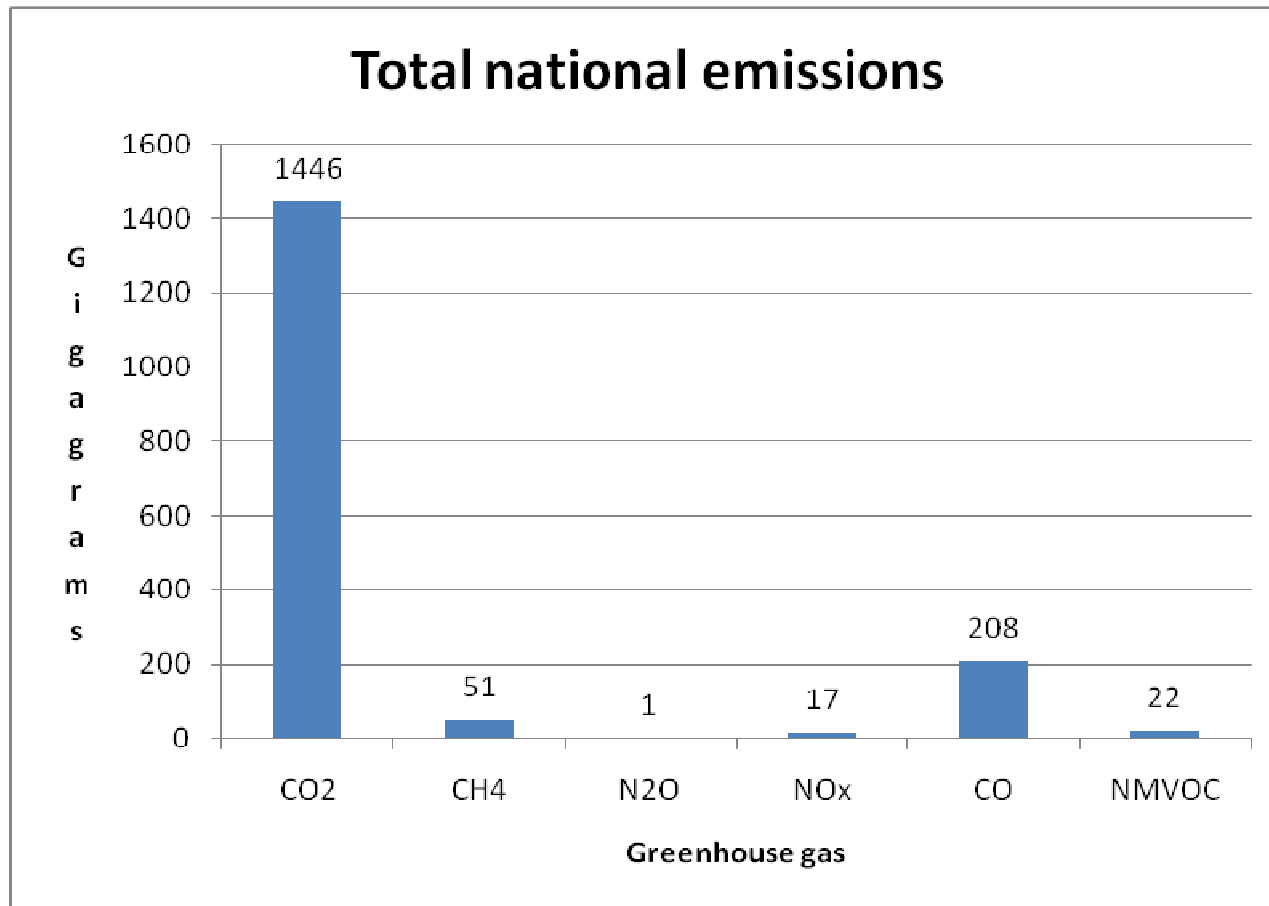
The Guyana Scenario



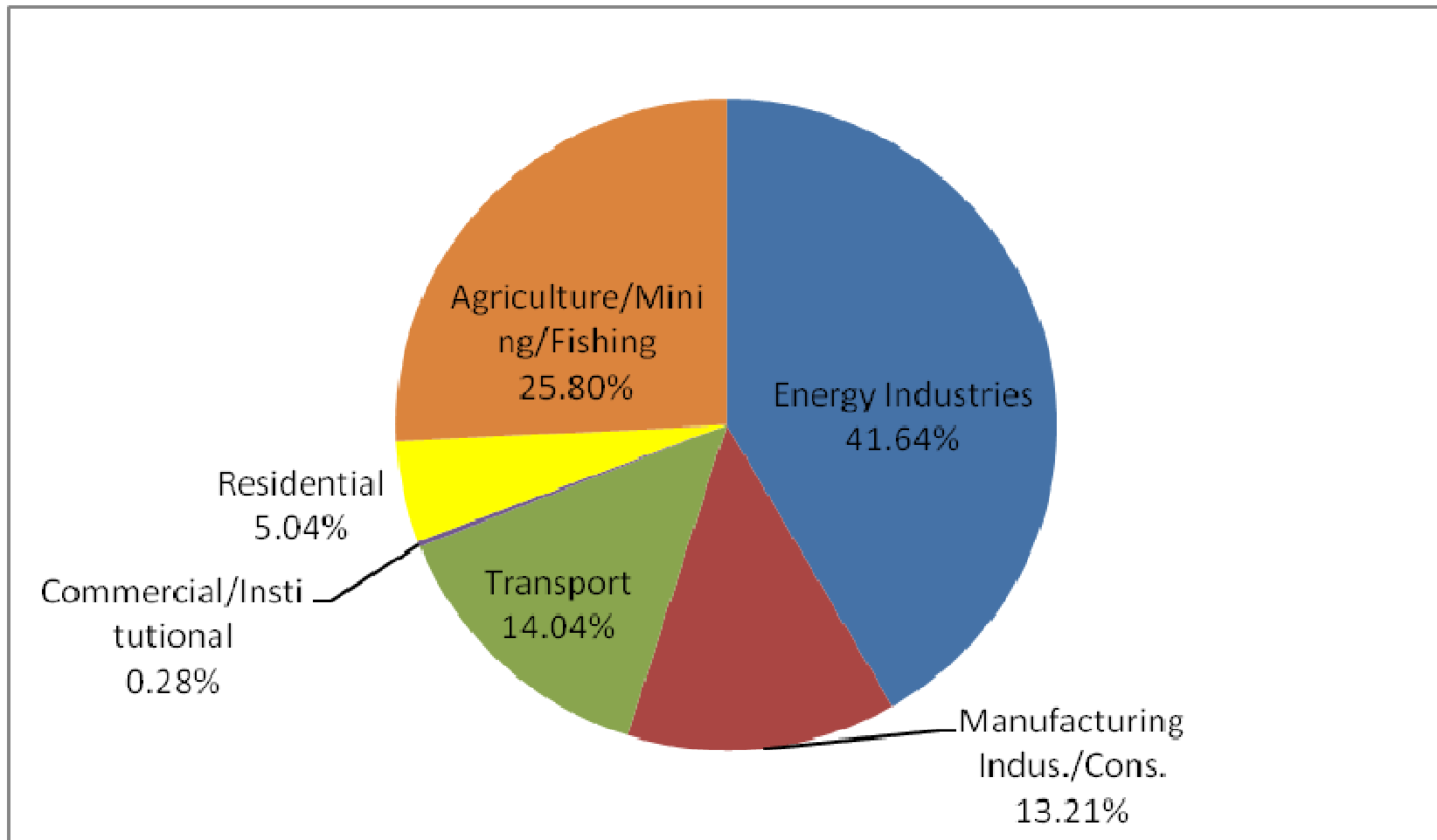
The Guyana Scenario cont'd



The Guyana Scenario cont'd



The Guyana Scenario cont'd



Guyana's Low Carbon Development Strategy (LCDS)

- It sets out the national conditions under which Guyana would:
 - put its rainforest under long term protection once the right economic incentives are created; and
 - use the payments received for forests' climate services to re-orient the country's economy onto a low carbon, environmentally sound trajectory.
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- “We hope that we will be able to offer the world a working example of what it takes to forge a low deforestation, low carbon, climate resilient economy.”
(Bharrat Jagdeo, 2010)

Guyana's LCDS: a review of Renewables and Energy Efficiency

| LCDS Phases | Action Plan for Renewables | Action Plan for Energy Efficiency |
|----------------------|---|-----------------------------------|
| Phase I - 2009 | Nil | Nil |
| Phase II - 2010-2015 | <p>Execute and deliver on five to ten priority infrastructure projects needed to re-orient the economy toward low-carbon growth</p> <p>Attract major international investors in at least three key new economic sectors such as hydropower, high-end fruits and vegetables, and aquaculture</p> <p>Implement hinterland adaptation measures to ensure the sustainability and further development of the livelihoods of hinterland communities</p> | Nil |

Guyana's LCDS: a review of Renewables and Energy Efficiency

| LCDS Phases | Action Plan for Renewables | Action Plan for Energy Efficiency |
|---------------------------|---|-----------------------------------|
| Phase III- 2013-2020 | <p>Continue to invest in the high priority low-carbon economic infrastructure and adaptation priorities</p> <p>Facilitating Investment in high-potential low-carbon sectors</p> <p>Clean transportation programme to determine how transportation-related emissions can be reduced, especially as the overall transport sector increases with economic growth</p> | Nil |
| Phase IV- 2020 onwards | Continuation of projects and initiatives mentioned under previous phases | Nil |

Energy Policy of Guyana (1994-2004)

Objectives of the Policy are:

- to provide stable, reliable and economic supply of energy
- to reduce dependency on imported fuels
- to promote where possible the increased utilisation of domestic resources
- to ensure energy is used in an environmentally sound and sustainable manner.

Among the strategies for achieving these objectives are:

- the promotion of and where feasible, the increased utilisation of indigenous energy resource; and
- more efficient utilisation of petroleum based products and energy generally through conservation measures

Conclusion

- Decision of the country's policy makers to pursue a low carbon, climate resilient path, as articulated in the country's LCDS, is an indication of Guyana's commitment to sustainable development, given the fact that the country is a net sink.
- Avoided deforestation is given prominence in the LCDS
- Financial resources derived from payments of the forest ecosystems (including carbon) will be used to develop renewable energy projects, largely hydropower, wind, solar and possibly bio-ethanol.
- Energy efficiency is also critical to the achievement of a low carbon economy
- There is need for Guyana to establish systems that will increase current efforts aimed at improving energy efficiency

Recommendations

- A system to promote carbon reduction commitment through the issuance of Energy Performance Certificate for the private sector.
- Investments in energy saving measures, for example retrofitting of buildings, commencing with Government buildings, private sector firms to realise cost effective measures.
- Establishment of a system to incentivise emissions reductions by large, medium and small scale enterprises.
- Raise consumer awareness of SMART renewable energy options (for consumer behaviour change to residential energy efficiency). In this respect, the Government should to partner with private sector.

Recommendations

- Governments to leverage private sector involvement by means of demonstration projects on new available technologies
- Development of technical standards that allow efficiency to be defined, measured and evaluated
- Delivery of education and training programmes and expert assistance which can help overcome barriers to the acceptance of energy efficiency, particularly in combination with other measures

Guyana's LCDS

- <http://www.lcds.gov.gy/>