Central Electricity Board

Renewable Energy Workshop

July 24, 2006

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The Electricity Energy sector

3 Players

- The **Central Government** acting through the Ministry of Public Utilities
- The **Central Electricity Board**
- **Independent Power Producers**

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CEB Overview

- A para-statal organisation instituted by Government in 1951.
- Responsible for the control and development of electricity supplies in Mauritius
- CEB Act of 1964 gave the CEB a monopolistic position in
  - Generation, Transmission & Distribution of electrical energy island wide
- Electricity Act of 1982

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CEB Overview:
The Production Park (2005)

CEB

- 60 MW hydro stations
- 215 MW diesel based power stations
- 75 MW gas turbines

Independent Power Producers (Existing)

- 111 MW bagasse/coal based power stations
- 39 MW Bagasse based power plants
- 30 MW Coal based power plant

Independent Power Producers (Committed)

- 74 MW bagasse/coal based power station

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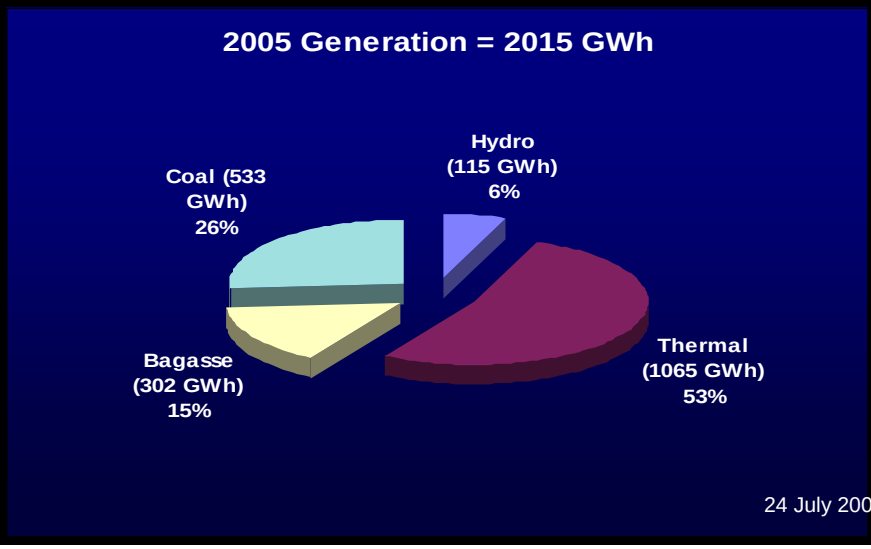
CEB Overview:
2005 Generation Statistics



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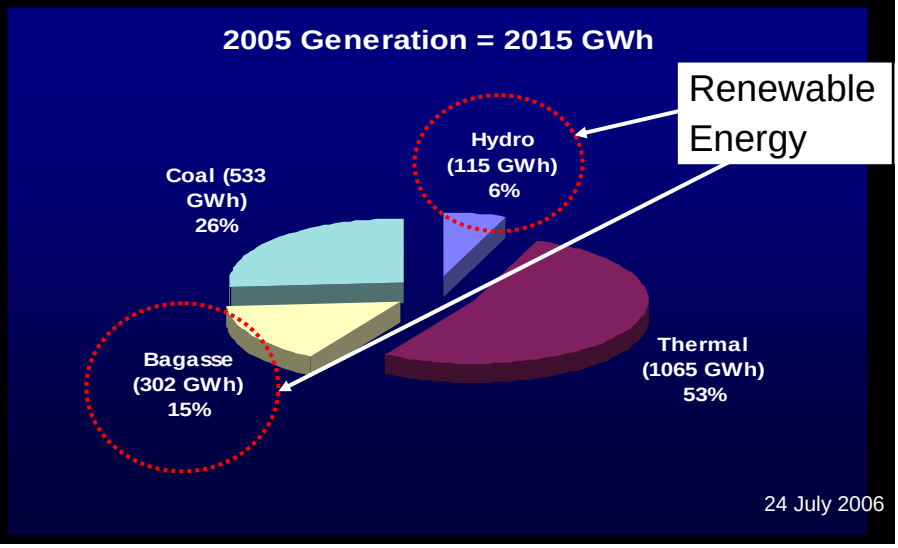
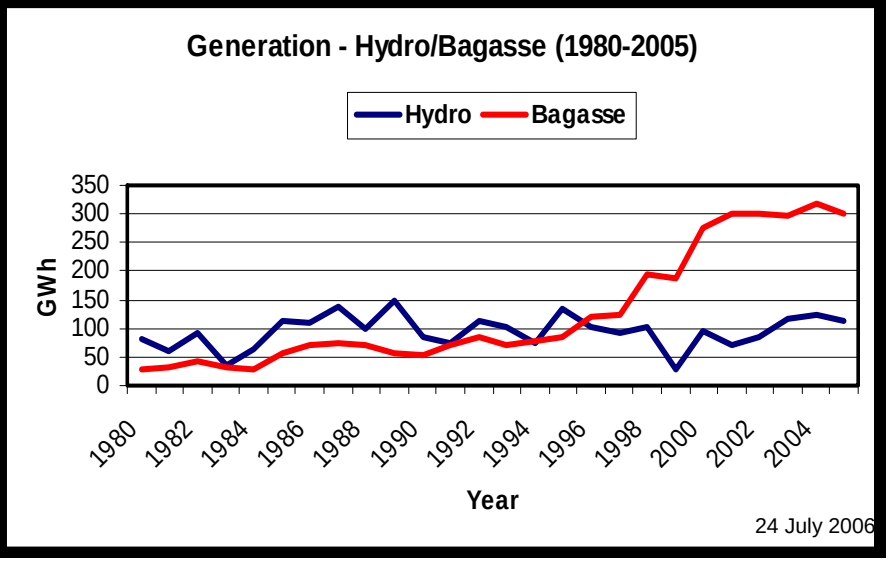
CEB Overview:

2005 Generation Statistics



Renewable Energy contribution (1980-2005)



Renewable Energy (Bagasse)

Bagasse Component (Important Dates)

- 1957 – 1st Sugar Factory to export electricity , St.Antoine
- 1991 – Bagasse Energy Development Programme
  - Improve the viability of the Sugar Industry
  - Savings of foreign exchange
  - Reduce environmental pollution
- 1996/1997 – 9 Power Purchase Agreements signed
- 1998-2005 – 2 Power Purchase Agreements

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Renewable Energy (Bagasse)

Power Purchase Agreements

- 1996/1997 (Nine)
  - Bagasse-based: Mon Loisir, Mon Desert Alma, Medine, Riche en Eau, Mon Tresor Mon Desert, Savannah, Union St.Aubin
  - Coal/Bagasse based: FUEL, Beau Champ
- 1998/2005
  - Coal/Bagasse – CTBV (1998), CTSav(2005)

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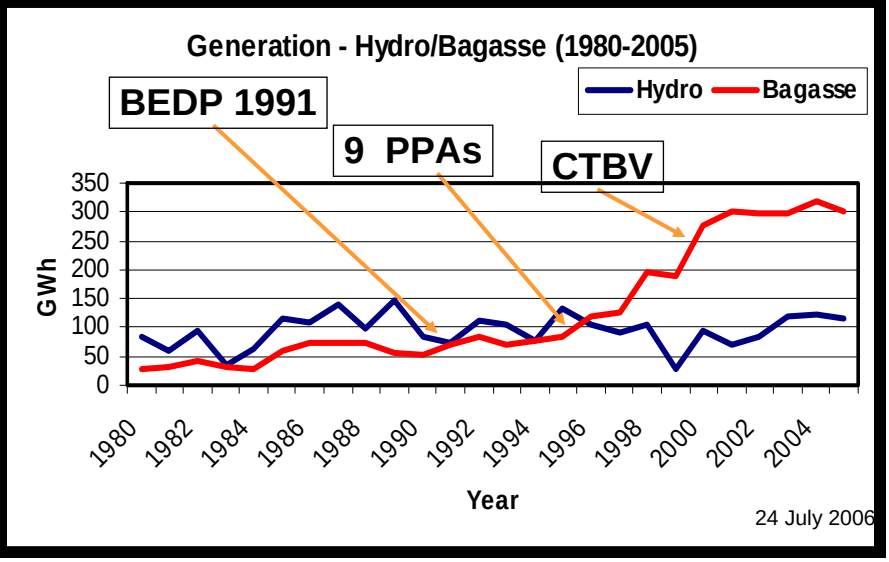
Renewable Energy Bagasse(1980-2005)



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Renewable Energy (Bagasse)

Expected energy purchases (bagasse-based) with the commissioning of CTSav (2007)

- 300 GWh (2005) to 420 GWh (2007)

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Renewable Energy (Hydro)

Hydro potential already maximised

- Average annual generation – 100 GWh

Installed capacity

- 60 MW (8 Power Stations)
  - Champagne (1984), Ferney (1971), Tamarind Falls (1903), Le Val (1961), La Ferme(1959), Reduit (1906), Cascade Cecile (1963) , Magenta (1960)

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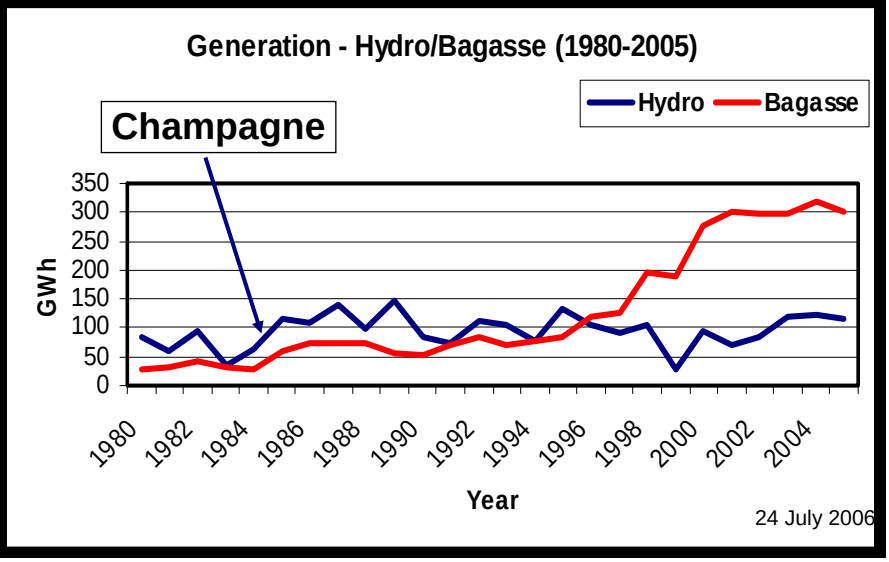
Renewable Energy Hydro (1980-2005)



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Renewable Energy (Wind)

Contribution to generation

- Mauritius – Nil (No wind park exists)
- Rodrigues – 0.44 GWh (1.5 % of total energy generated)

History

- Wind Potential established by American firm Batelle under UNDP Programme – 1983 to 1987
- Pilot project – 100 kW at Grand Bassin, 4 x 30 kW at Rodrigues
- Wind Turbine removed from service in 1990 (Grand Bassin – spare parts problem), 1995 (Rodrigues – not equipped with tilting ability)
- 3 x 60 kW Wind Turbines installed in Rodrigues in December 2003 with tilting ability

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Renewable Energy (Wind)

Lessons learned

- Cyclones are major a major problem (Wind gusts of the order of 300 km/h)

Future projects

- Discussions on going with one project promoter for the installation of a 25 MW Wind Farm at Bigara

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Renewable Energy (Wind)

Future of Wind Energy dependent on the following

- Incentives from the Government to mitigate the high costs of installation of Wind Turbines

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Renewable Energy (Wind)

Indian Experience

- Wind energy started in 1983-1984, Demonstration projects in 1985
- India ranks 4th behind USA, Spain & Germany

Incentives provided by Indian Government (not limited to the following)

- Direct taxes
  - accelerated depreciation at 80% on investment in the first year of operation attracted profit making companies
- Tax holiday
- Concessions in excise and customs duty

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Renewable Energy

Potential projects

- Micro turbines
  - Small turbines of about 0.1 MW being considered
- Waste-to-Energy projects
  - Considered by the Government (Power plant size of the order of 20 MW)
- Solar
  - Best suited for off-grid application
- Tidal
  - Still at development stage
  - Enormous potential

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Next Steps

Concerns requiring attention

1. Increasing price of petroleum products
2. Depleting coal reserves
3. Energy Security
4. Need to address reduction of Green House Gas emission, a tradable commodity that can earn additional revenue to the any project under the Clean Development Mechanism (CDM).
5. Need to have policies in place to attract investors

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