

Renewable Energy and Energy Efficiency in Guatemala

REEEP

Mexico City, September 7 2005

Guatemala, Central America



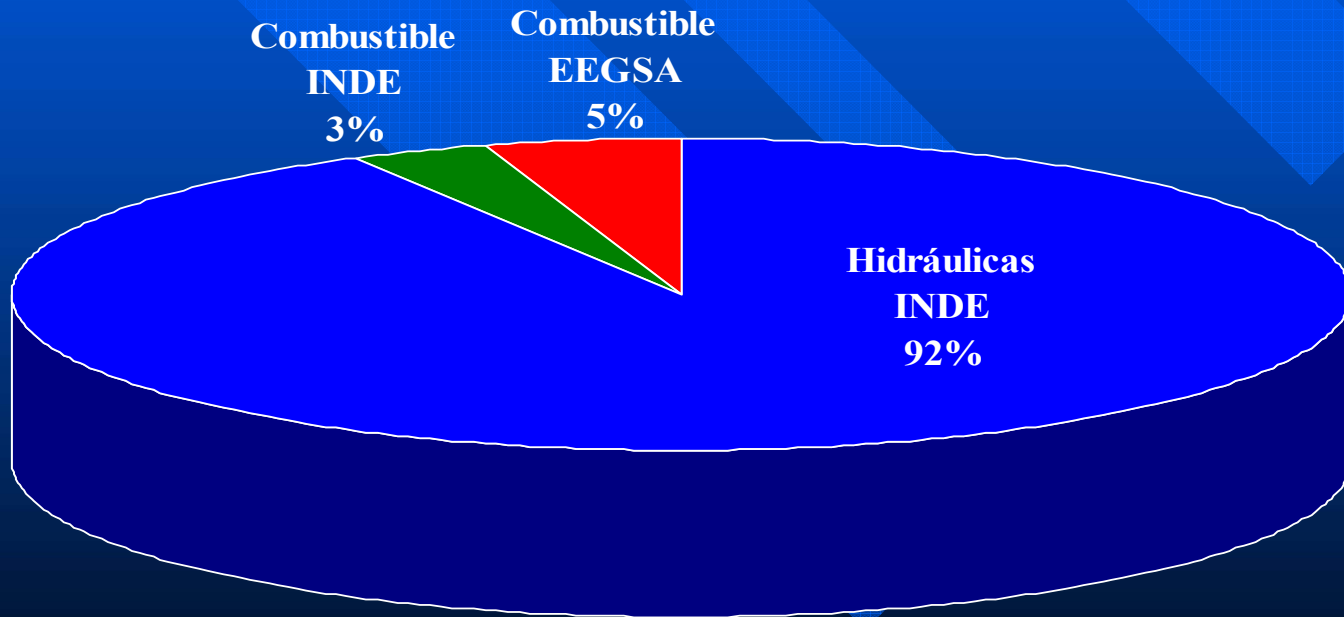
Short History of the Electricity Sector

- Before 1990 The state controlled the system
- 1991-1996 Electricity Reform
- 1997-2004 Market

1990 The State controlled the System

Electricity generation in 1990 (GWH)

Hydro INDE (State)	2,144	Combustible EEGSA (State)	110
Combustible INDE (State)	77	TOTAL	2,331



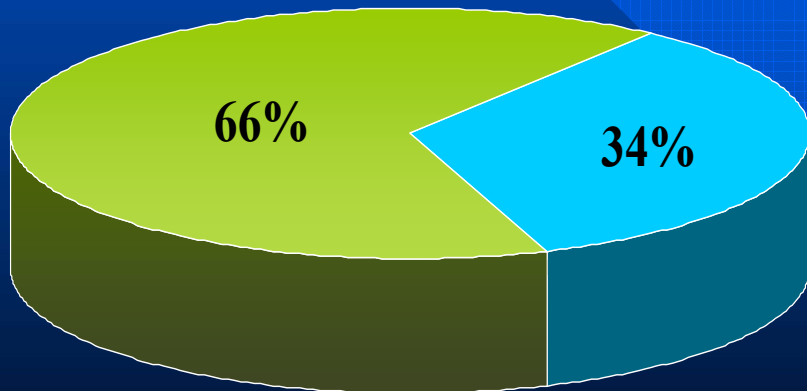
1997-2004 Market

Net Energy Production in 2003 (GWH)

Hydroelectric State	1,793	Thermoelectric State	449
Hydroelectric Private	384	Thermoelectric Private	3,936
Cogeneration	588	TOTAL	6,561

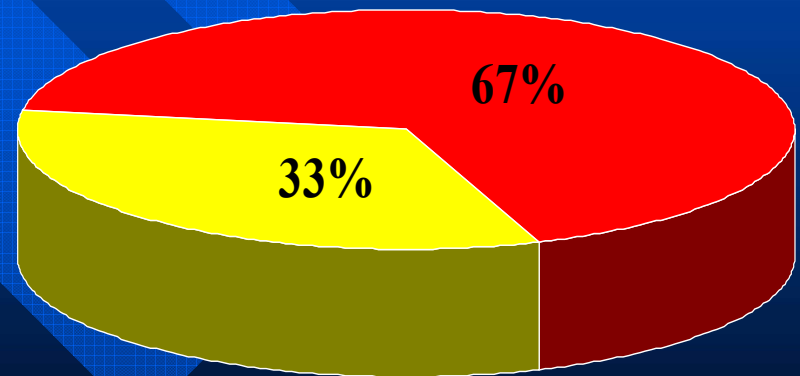
■ Privado

■ Público



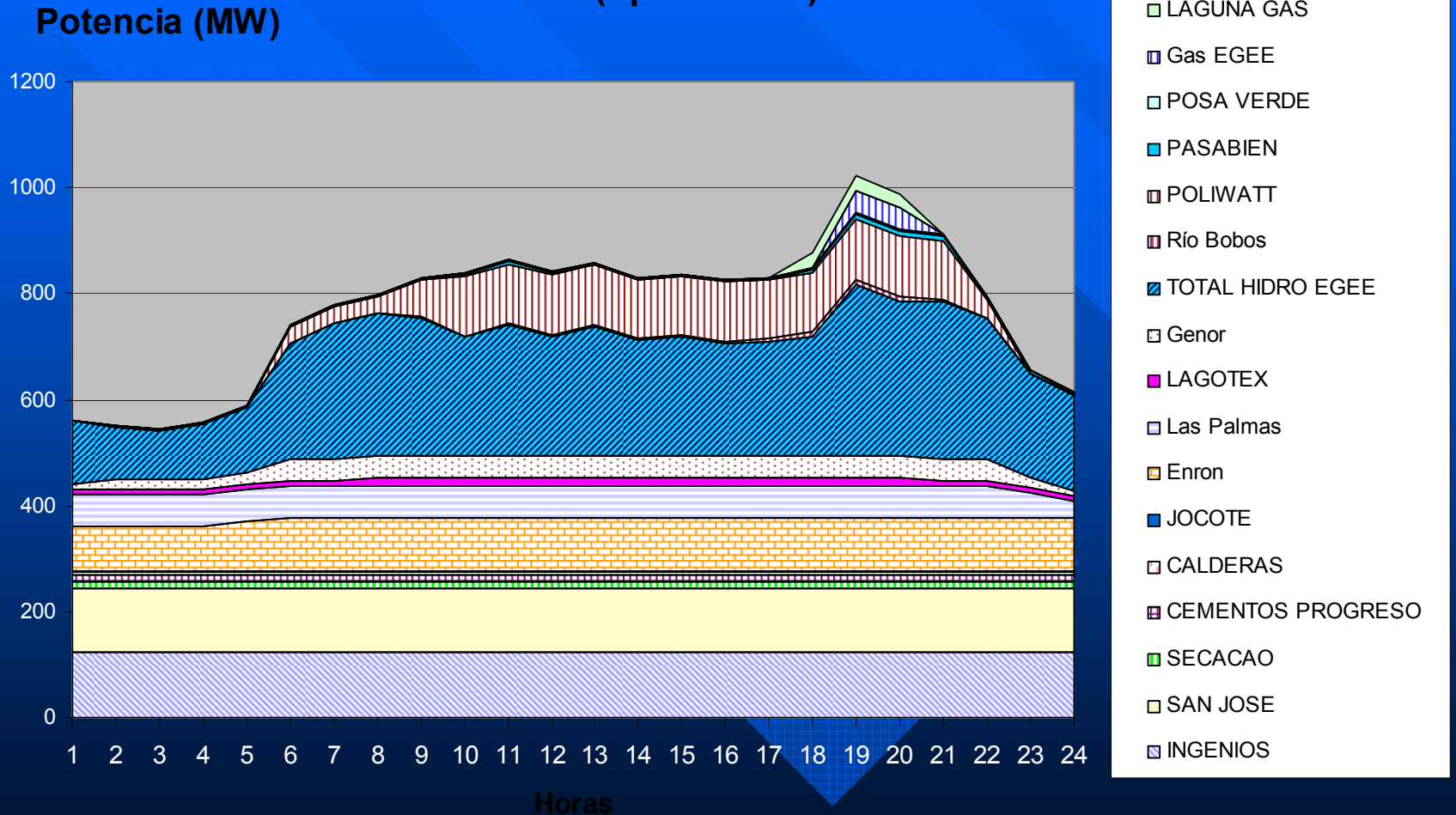
■ Hidroeléctricas

■ Termoeléctricas



CURVA TIPICA DIA DE ALTA DEMANDA

Sistema Nacional Interconectado
(Epoca Seca)



Renewable Energy Incentive Law

- A Renewable Energy Incentive Law was approved on November 2003
- The guidelines for the application of the law were published in early 2005
- The law grants a 10 year tax holiday, exemption of import duties for equipment and construction materials and other specific taxes.

Presidential Support to Small Hydro and Municipalities

- The President has launched a small hydro program to support energy generation development in Guatemalan Municipalities.
- There are targets to develop 30 small hydro in the next 2 years, in ranges from 0-1 MW, 1-10 MW and more than 10 MW.
- Identification of funding to support pre and feasibility studies in on the way.

Energy Efficiency in Transportation

- There has been a change in work hours: industry and schools enter at 7:00 am, general offices at 8:00, Government at 9:00 and general services at 10:00, which decongest traffic in peak hours.
- New express routes are being created to help move traffic.
- A study is being done to make a plan to help bus owners in updating equipment and functioning to avoid pollution from poorly kept up buses.

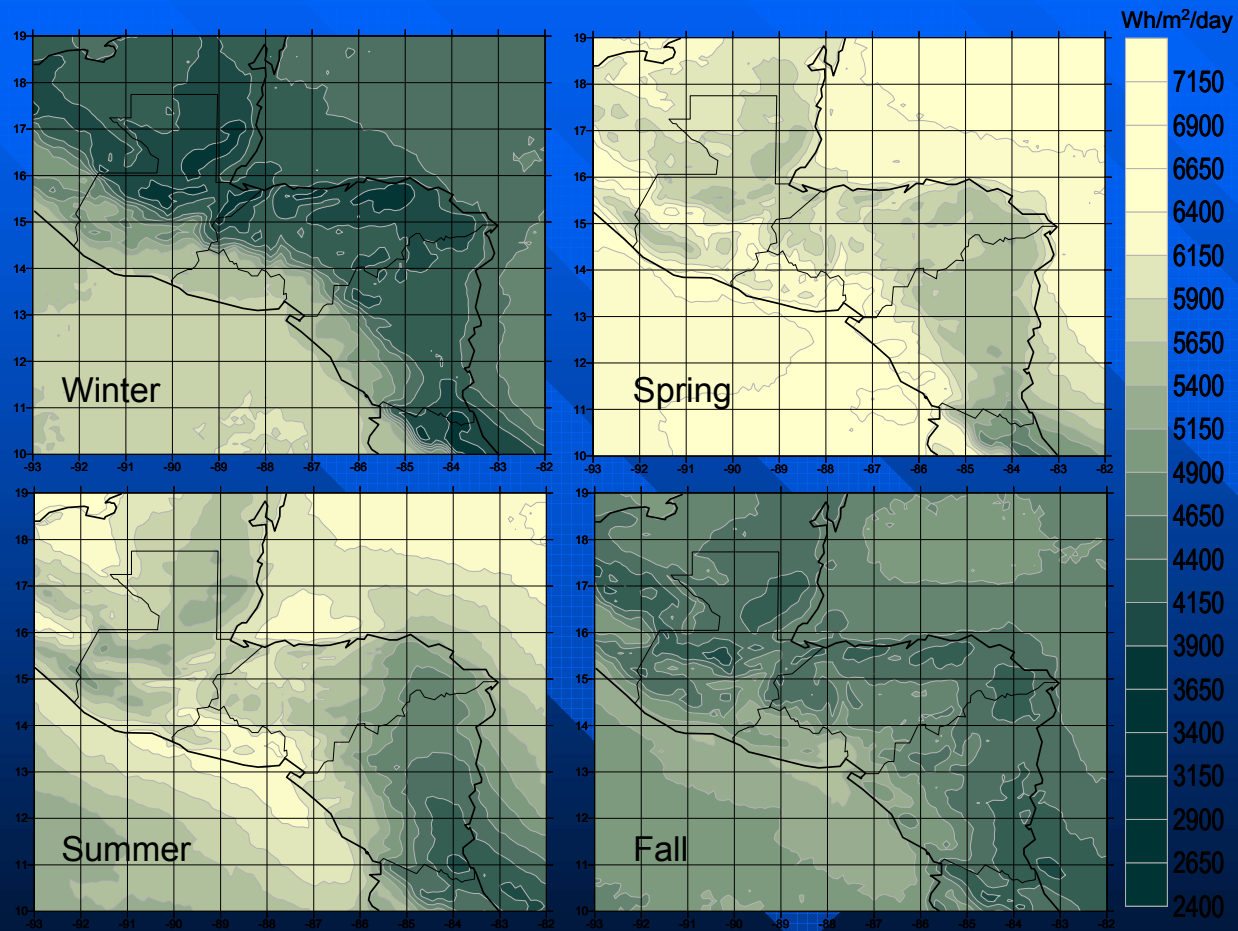
Ethanol in Regular Gasoline

- The Ministry of Energy and Mines has announced that as of December 2005, 10% of the regular gasoline will contain ethanol, made from sugar cane.

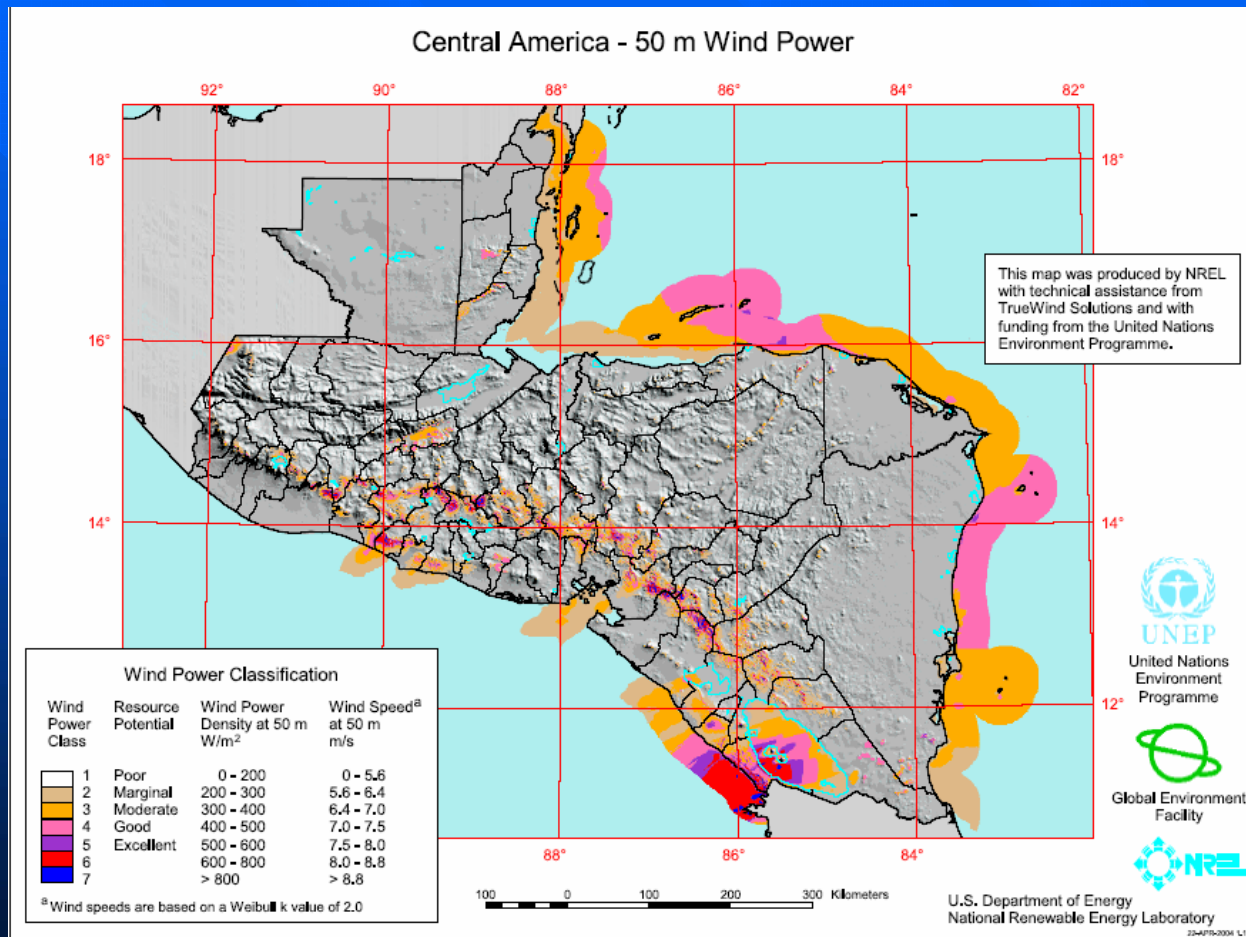
Promotion for Renewable Energy Generation

- The MEM has an office with the inventory of renewable resources, created with the support from OAS:
- For wind and sun it has the SWERA maps prepared by NREL and University of Albany
- A listing of small and medium hydro projects, that have been identified.
- Trained personnel to support developers in the initial stages of project preparation.

SWERA Solar Map



SWERA Wind Map



Opportunities

- With the oil prices on the rise, renewable energy becomes the solution if resources are available.
- Energy Efficiency makes sense, but needs higher profile in successful experiences to show the way in developing countries.
- Hybrid projects can become more and more feasible generation options.
- Development of pilot projects are essential for promotion of new technologies or new applications.

Thank you

Marta X Rivera

Guatemala

(502) 2337 0034

martaxrivera@gruporivera.net