

---

# The Fundamentals of Alternative Energy

## *Retail Fundamentals*

Presented by Theresa Howland, ENMAX Energy Corp.

Canadian Electricity Association

November 25, 2002



# ENMAX Background



- **ENMAX Corporation**
  - Wholly-owned subsidiary of the City of Calgary
  - Three subsidiaries: ENMAX Energy, ENMAX Power and ENMAX Encompass
- **ENMAX Energy**
  - Provides electricity and products to over 400,000 Albertans
  - Focuses on the competitive retail environment and innovative products and services
  - Launched Canada's first Residential Green Power program in 1998.
  - Launched Canada's first Commercial Green Power program in 2000.

Greenmax



# Outline

- **Definition of Green Power Marketing**
- **Green Power Marketing Summary**
  - Canada
  - United States
  - World Wide
- **From Niche to Mass Market**
- **Current Trends**
- **Green Power Utopia**



# Definition of Green Power Marketing

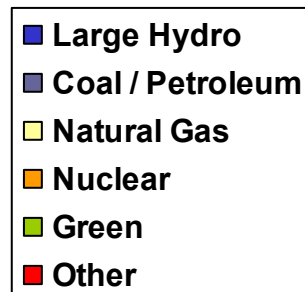
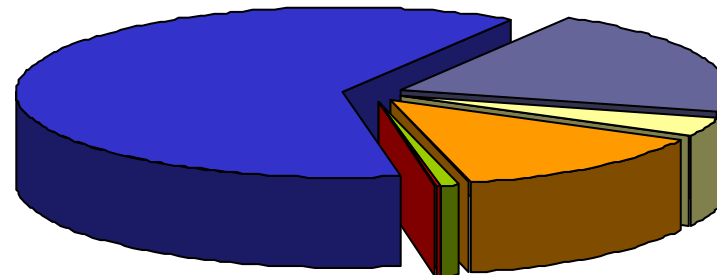
- **Green Pricing**
  - Optional utility program
  - Offers customers the option to support Green electricity investment
  - Premium on electricity bill pays for additional costs related to renewable energy
- **Green Power Marketing**
  - Competitive offer in deregulated electricity market
- **Green Tags**
  - Separation of energy and green attributes
  - Usually still within transmission grid



# Green Power Marketing in Canada

## Total Energy Production by Source

- Large Hydro = 61%
- Coal / Petroleum = 20%
- Natural Gas = 4%
- Nuclear = 13%
- Green = 1%
- Other = 0.2%



*\*Source: Statistics Canada (based on Terrawatthours)*



# Green Power Marketing in Canada



# Green Power Marketing in Canada

Company	Program Name	Source	Program Description				
			Residential	Premium (cents/kWh)	Customer Participation	Commercial	Premium (cents/kWh)
ENMAX	Greenmax	Wind	75kWh (13%) for \$5 160kWh (27%) for \$10 250kWh (42%) for \$15 *Based on 600kWh/mo	6.7 6.3 6.0	4000+	425kWh for \$25 1000kWh for \$55 2000kWh for \$110 8000kWh for \$440	5.9 5.5 5.5 5.5
Epcor	Eco-Pack	Wind, Solar, Run-of-the-River Hydro, Bio-mass	10% for \$5 25% for \$10 50% for \$20 100% for \$40 *Based on 550kWh/mo	9.1 7.3 7.3 7.3	3500	10% for \$50 25% for \$125 50% for \$250 100% for \$550 *Based on 7000kWh/mo	7.1 7.1 7.4 6.4
SaskPower	Greenpower	Wind, SaskPower retains credits to offset CO2 emissions in Saskatchewan	\$3.50/100kWh block	3.5	N/A	\$0.035/kWh min. \$500/month	3.5 min. \$500/month
UtiliCorp-Aquila	Green Power	Wind, solar, small hydro, geothermal and biomass	Any percentage of power at an extra 1.5 cents per kWh or any flat rate customer chooses.	1.5	<50	Program appears to be in development.	Negotiable flat monthly amount.
Maritime Electric	Green Power	Wind	50kWh for \$1.75	3.5	N/A	50kWh for \$1.75	3.5
Toronto Hydro	Cit-source	Wind, small hydro	55kWh for \$5	9.0	N/A	166 kWh for \$14	8.43
BC Hydro	Green Power	Small Hydro Green landfill gas, biomass, Wind, micro hydro planned for 2003	N/A	N/A	N/A	Sell Green Power Certificates 1 MWh for \$20	2.0
Ontario Power Generation	Evergreen	Small hydro, biomass, wind and solar	N/A	N/A	N/A	\$35-\$55 per MWh	3.5 to 5.5
Vision Quest	Green Energy	Wind	100kWh for \$9.50/month	9.5	N/A	1000kWh for \$68/month	6.8
Green Tags Ontario	Green Tags	Wind	1 MWh at a cost of : \$75/Year \$20/Quarter \$7/month (min. 2)	7.5	N/A	1 MWh for \$75/year	7.5

# Green Power Marketing in Canada

- **Currently there are 10 companies offering Green Power**
- **Average Residential Premium of 6.5 cents / kWh**
- **Average Commercial Premium of 5.57 cents / kWh**
- **Approximately 8,000 customers**



# Green Power Marketing in the United States

- **40% of customers have access to a green power product**
- **Over 100 programs from utilities**
- **15 competitive offers**
- **13 states with Renewable Portfolio Standards**
- **The top ten Green Power Pricing Companies alone have a combined participation of close to 200,000 customers**



# Green Power Marketing in United States



- **The total current capacity from green marketing and pricing activities is 648 MW with:**
  - 604 MW from wind
  - 4.2 MW from solar
  - 29 MW from biomass
  - 5 MW from geothermal
  - 6.5 from small hydro
- **The total planned capacity from marketing and pricing is 440 MW with:**
  - 348 MW from wind
  - 1.9 MW from solar
  - 49.9 MW from geothermal
  - 2.0 MW from small hydro
  - 39 MW from biomass
- **By 2003 the Greenmax Program will have 114 MW**

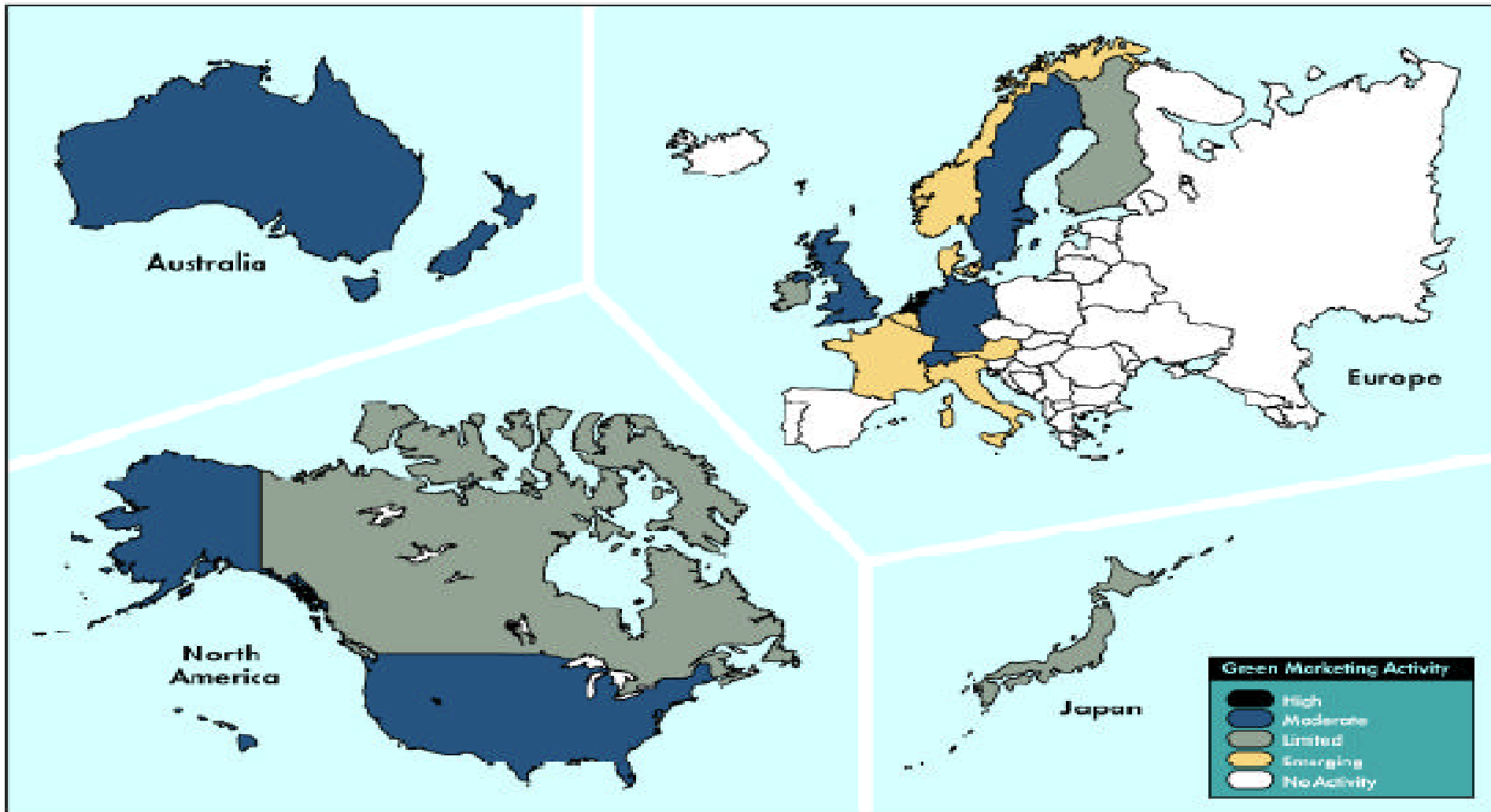


# Green Power Programs World Wide

- 2 million customers worldwide are purchasing green power
- 500 marketers / utilities are offering green power options
- at least 1000MW of new renewable capacity has been installed for green power customers



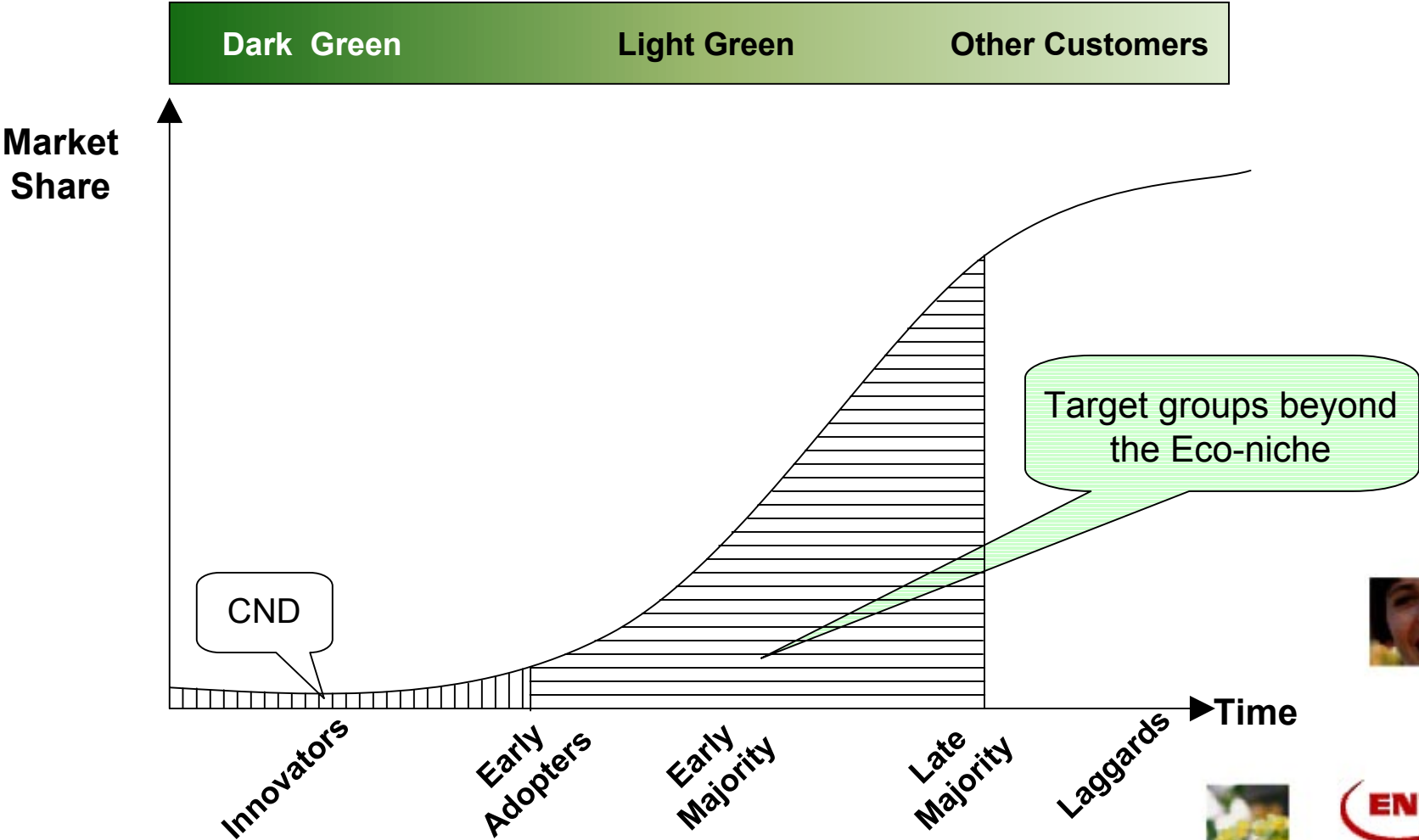
# Green Power Programs World Wide



**Figure 1: Countries with Current or Emerging Green Power Markets**

Source: NREL Green Power Marketing Abroad

# From Niche to Mass Market

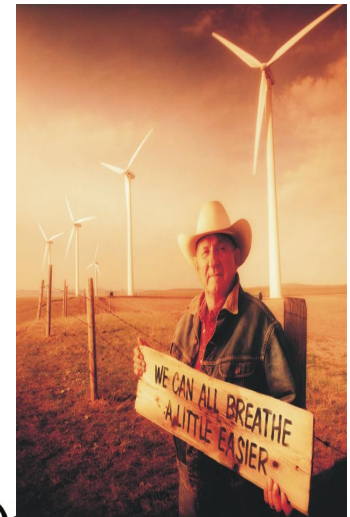


# Stimulating Demand - The How...



# ...Will Lead to Green Power Utopia

- **1% is typical**
  - 5% to 15% is possible
- **Customer Recognition**
- **Bundle Negawatt savings with renewable energy**
- **Packaging: Purchase CFL and the Green Tags**



**Kananaskis**  
**Mountain Lodge**



# ...Will Lead to Green Power Utopia

- **NGO's and Environmental Advocacy groups challenging leading companies to buy**
- **Market Development Group**
- **National Certification Standard**
- **True costs for regular electricity**
- **Buzz**



**LOOKING FORWARD.**



**ENMAX**

[enmax.com](http://enmax.com)