



# Renewable Energy Financing in North America

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Clean Power Income Fund

# The Current Situation

## ● Canada:

- Substantial hydro-electric development
  - Outside of Ontario, most major utilities primarily hydro-electric
    - Lower Churchill, Nelson River, NBR
  - Small hydro resources, particularly in BC/Quebec remain under active development
- Little development of other renewables
  - Biomass 500+ MW
  - Wind <200 MW
  - Small number of landfill gas installations
  - No geothermal

# Canadian Policy Drivers

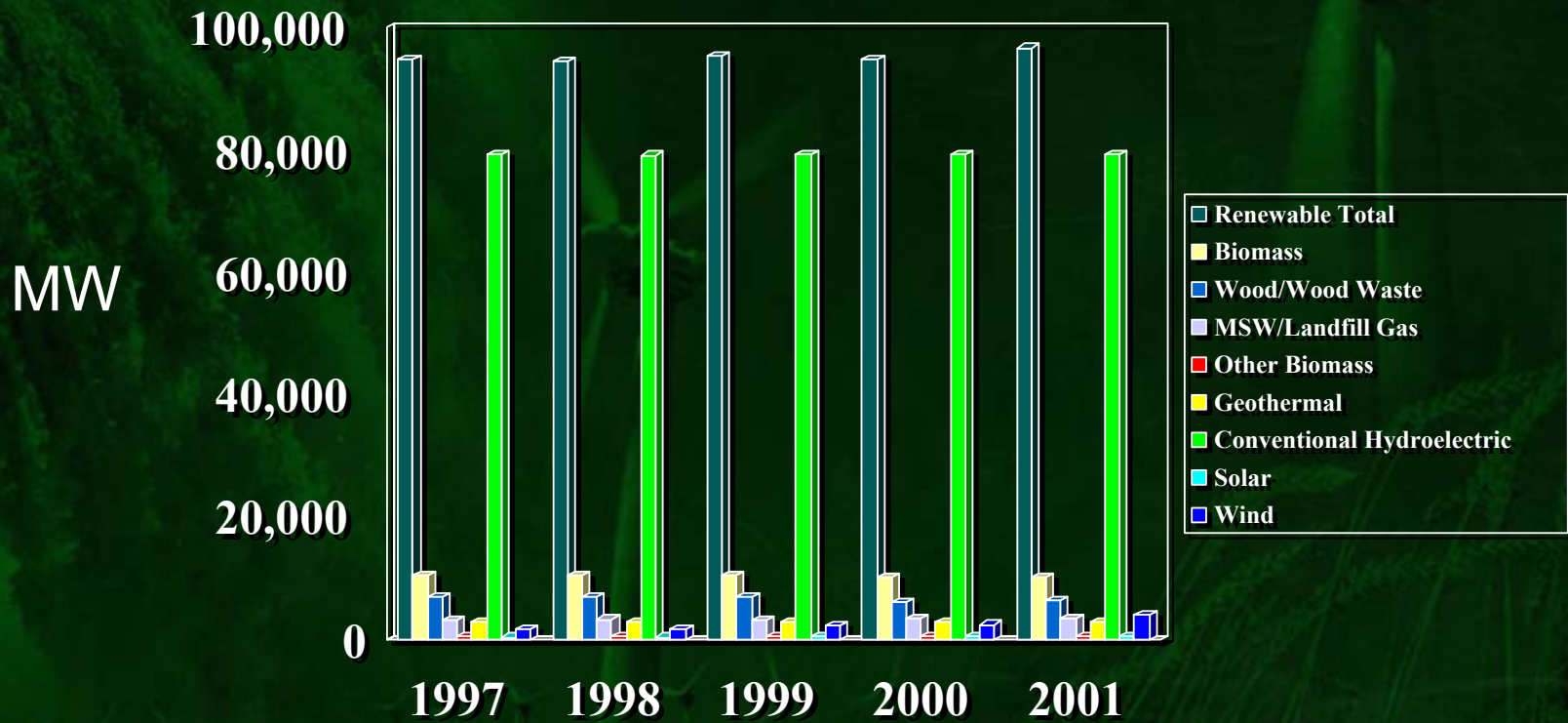
- Utility purchase
  - Most renewables developed on basis of long-term PPAs
  - Little activity since mid-90s; now seeing contracts in Quebec and (possibly BC)
- Federal government energy purchases
  - Small developments mainly wind
- Local Distribution Utility “Green Power” programs
  - Most prominent in Alberta wind development
  - Ontario “open market” encouraged LDC programming
    - Closed down by provincial government

# Mexico

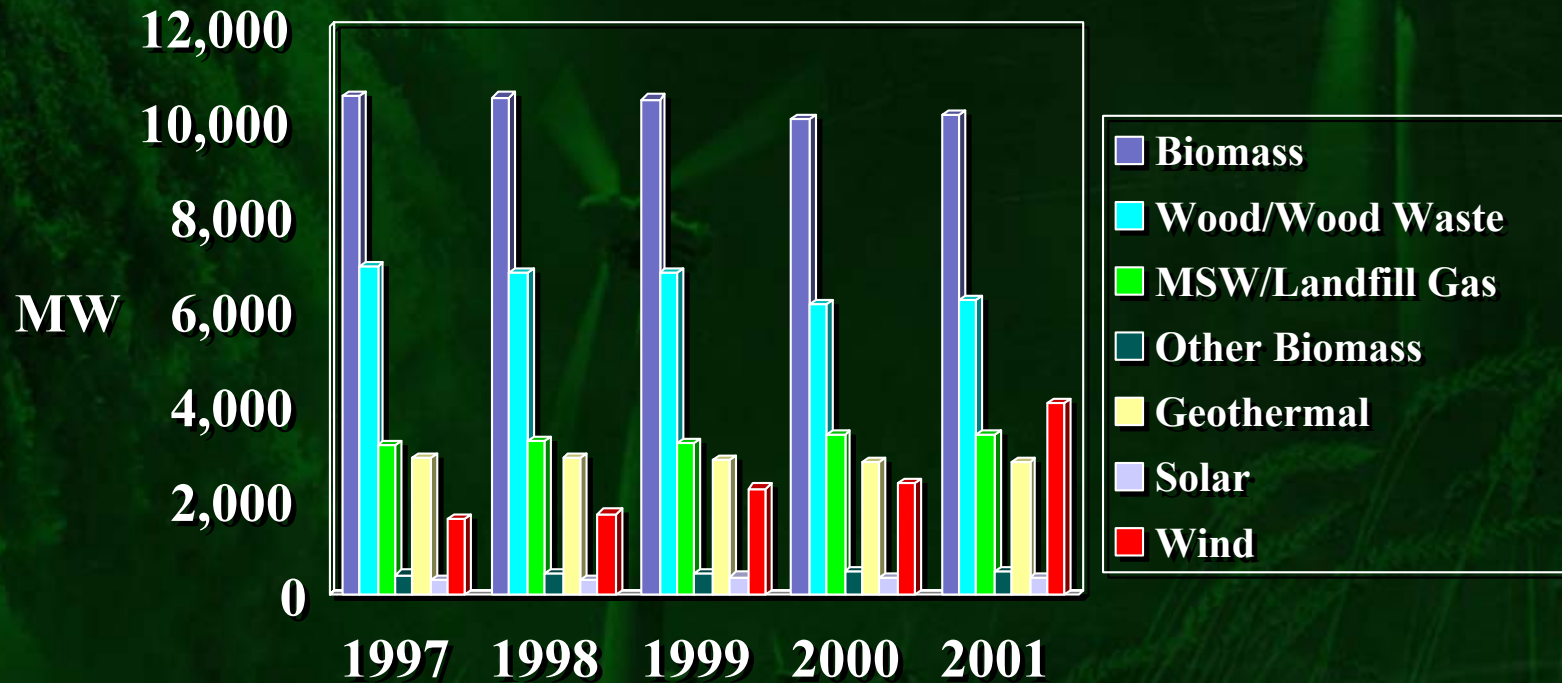
## ♻️ Limited development

- Renewables generally regarded as “uneconomic”
  - Low cost gas generation
- CFE monopoly
  - No requirement for renewable generation

# United States



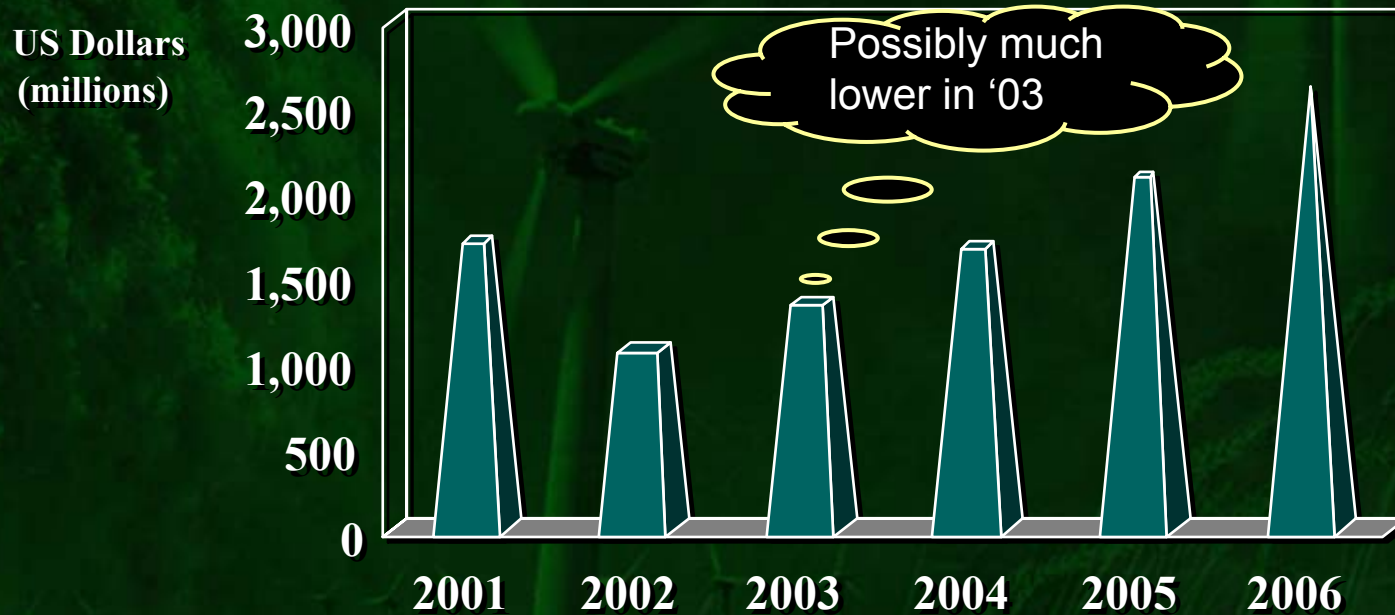
# US Renewables excluding large hydro



# The Growth of Windpower

♻️ 2001 year best on record

📌 Requirement for next 5 years — \$8.7 billion



# US Renewable Policy Drivers

- Renewable Portfolio Standard (RPS)
  - Dedicates portion of market to renewables
    - Ie. California 20% of generation by 2020
    - Renewable generators earn “renewable energy credits” or RECs
    - Retailers must buy RECs on spot market or contract for “green” on long contracts
    - Failure to perform involves penalties
      - Up to 5¢/kwh in Massachusetts
      - Creates market in (a) RECs
  - Adopted or pending adoption by 15+ states; not expected to appear at federal level



# US Renewable Policy Drivers (II)

## ● Production Tax Credit

- Provides tax incentive of 1.8¢/kwh
  - Effective rate is 2.5¢/kwh
  - Covers production for 1st 10 years of wind/closed loop biomass project
- Has resulted in “tax planning” structures to transfer credit to entity with long-term tax shelter needs
  - Mainly utilities (experienced in power), but also includes financial institutions such as GE Capital
- ‘03 provides major challenges
  - Lack of utility tax appetite
  - Bush Administration FY 2004 proposals to end dividend “double taxation”

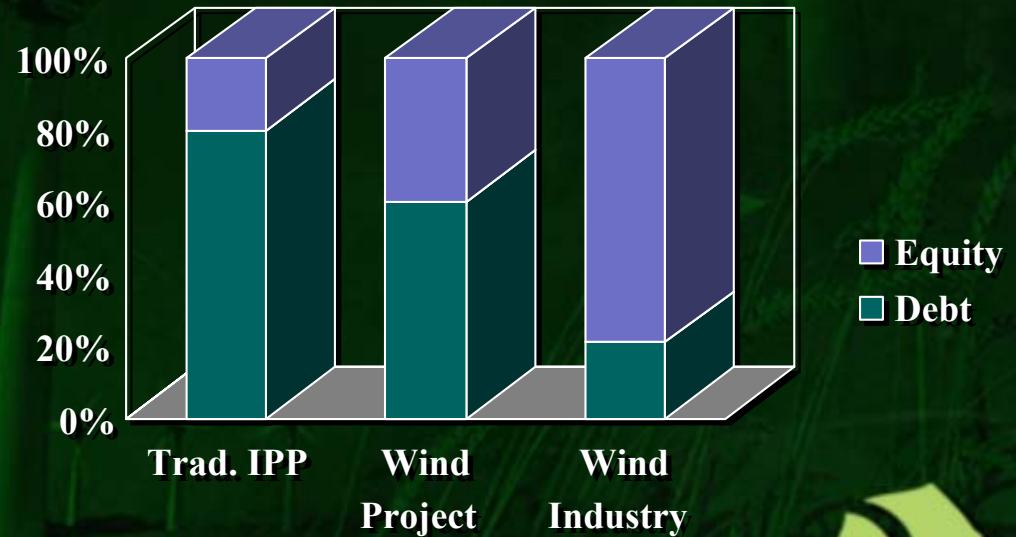
## Sources of funding

- In 2001-2, mainly from the utility sector
  - Florida Light & Power overwhelming market leader
  - Other utilities - AEP, Cinergy
  - Oil industry — Shell, Enron, Zilka



# Setting the IP business on its head

- Unlike IP business, wind is primarily equity financed
  - PTC-driven structures make equity cheap
  - Fundamental lack of debt capacity to service capital needs



# Project Finance — the good, the bad and the ugly

- Long-term PPAs
- Better reliability
- Lower costs
- Government support
- Short construction times
- Low permitting risk
- Ancient history
- Recent history
- PTC uncertainty
- Intellectual complexity
- Project finance market
- Lender experience with reliability
- Off-taker credibility
- Rating agency sentiment

## Project debt in 2002-3

- Capacity reduced compared to 2001
  - General decline in availability matched by secular decline in wind
- Little gain in terms of credit enhancement
  - Minimum 5-yr warranties
  - coverages are 1.4X or better
- Pricing spreads increased relative to last year

## PTCs — Utilities in the driver's seat

- ❏ US industry will continue to be driven by PTC equity market
  - Need combination of tax base and power expertise
- ❏ Small number of utility players
  - AEP - still moving ahead, although financial issues cloud picture
  - FPL — 2000+ MW (is tax appetite slowing?)
  - Oil cos. — Shell 130MW, BP/Chevron

# Utility Drivers — the issues

- Size of tax appetite
  - Volatile markets + AMT mean unpredictable tax appetite
- Perverse earnings implications
  - Cash flow benefits may not match earnings impact
- Regulatory issues
- Balance sheet issues
- RPF ownership restrictions

# Institutional Equity

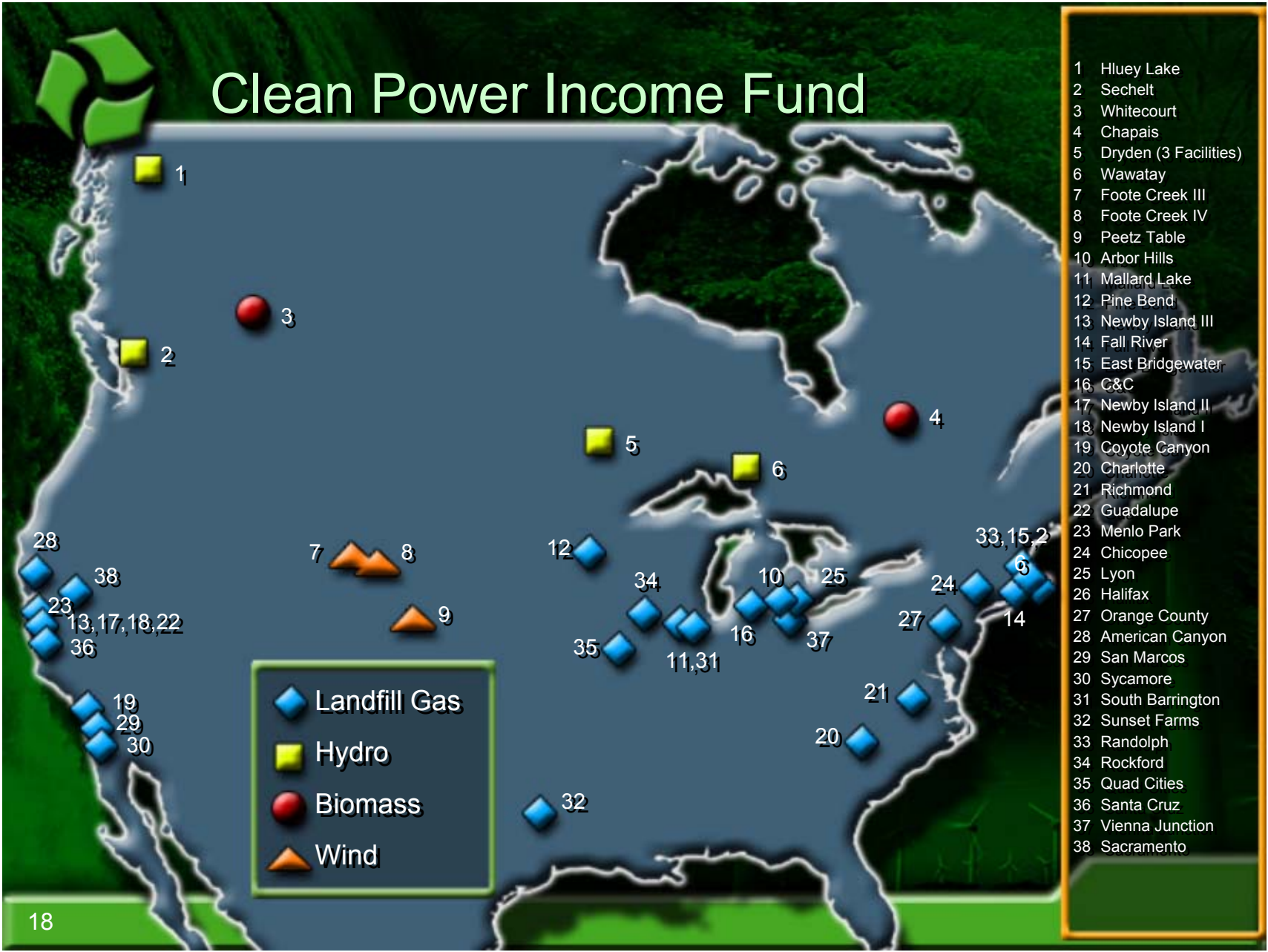
- Banks, insurance cos have tax appetite
  - Highly tax appetite predicable over long period
  - AMT not generally an issue
- Target rate of after-tax return in 12-15 percent range compared to 14-17% for utilities
- Prefer “partnering relationships” with senior credits
- Lack of expertise in wind power
  - Some players are solely looking to “rent” tax appetite
    - Presents structuring issues as equity must have project risk to qualify for tax benefits



# Canadian Power Income Funds

- Publicly listed, open-ended trusts which pay out all net cash to unit holders
  - Very popular investment instrument in Canada — \$45 billion +
  - Power/infrastructure is important sector
    - Number specialize in hydro/biomass
      - Increasing interest in wind
    - Clean Power Income Fund has diversified renewable sector mandate
- Access to public markets provides liquidity
- Highly economic buyers of hard assets
  - Cost of capital 10-12%

# Clean Power Income Fund



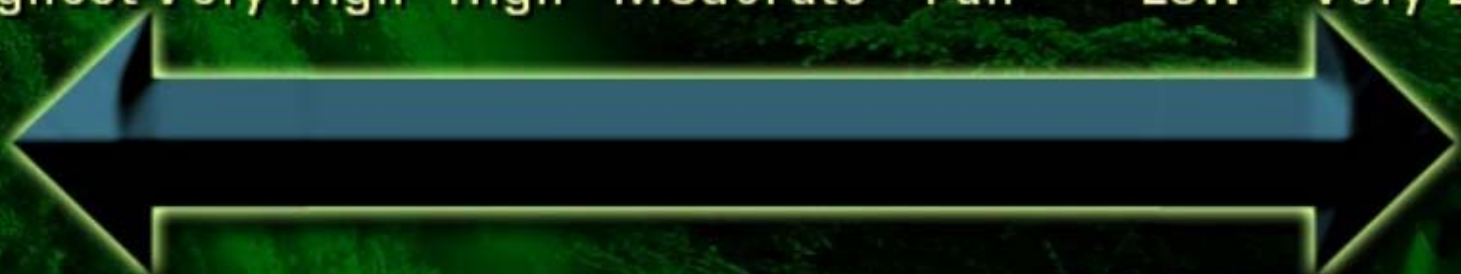
- 1 Hluey Lake
- 2 Sechelt
- 3 Whitecourt
- 4 Chapais
- 5 Dryden (3 Facilities)
- 6 Wawatay
- 7 Foote Creek III
- 8 Foote Creek IV
- 9 Peetz Table
- 10 Arbor Hills
- 11 Mallard Lake
- 12 Pine Bend
- 13 Newby Island III
- 14 Fall River
- 15 East Bridgewater
- 16 C&C
- 17 Newby Island II
- 18 Newby Island I
- 19 Coyote Canyon
- 20 Charlotte
- 21 Richmond
- 22 Guadalupe
- 23 Menlo Park
- 24 Chicopee
- 25 Lyon
- 26 Halifax
- 27 Orange County
- 28 American Canyon
- 29 San Marcos
- 30 Sycamore
- 31 South Barrington
- 32 Sunset Farms
- 33 Randolph
- 34 Rockford
- 35 Quad Cities
- 36 Santa Cruz
- 37 Vienna Junction
- 38 Sacramento



STANDARD  
& POOR'S

# Income Fund Ratings

SR-1 Highest   SR-2 Very High   SR-3 High   SR-4 Moderate   SR-5 Fair   SR-6 Low   SR-7 Very Low



TransAlta  
Power LP  
TransCanada  
Power LP

Algonquin  
Power  
GreatLakes  
Hydro  
**Clean Power**  
Northland

Koch  
Pipelines  
Labrador Iron  
Ore

Canadian Oil  
Sands Trust  
Pengrowth  
Energy Trust

NCE  
Petrofund  
Primewest  
Energy Trust

NCE Energy  
Trust

# Income Trusts

- Like stability of long-term PPAs
- Able to deal with variability of cash-flows through financial structuring
- Developers continue relationship with project through operating contracts
- Equity structure means greater flexibility
- Little tax appetite
- Valuation based on pre-tax cash flows (EBITDA)
  - Implicit cap rate of around 10x

# Other Private Sector Equity Providers

1. Oil industry players looking for green
  1. Usually public policy oriented ie Shell, BP, Suncor
  2. Oil industry culture, economic model quite different from wind industry
2. System Benefit initiatives
  1. Massachusetts, Connecticut, Canadian Federation of Municipalities
    1. Usually designed to support sub-economic, environmentally desirable investment
    2. Investment may be hampered by complex (and long-winded) investment criteria



# Multi-lateral Financial Institutions

- IFC, IADB, other MFIs have strong renewables programs
  - Difficulties in disbursement into worthwhile projects
  - Substantial resources dedicated to renewables through various “green funds”
- “A/B” loan structure provides private sector participation
  - Widening US project finance spreads have reduced interest by some institutions
  - Concerns about business model
- Developers often find MFI processes slow and difficult to manage



# Kyoto Mechanisms

- Kyoto Treaty provides Clean Development Mechanism/Joint Implementation mechanisms
  - Enhanced economics through transfer of credits to Annex 1 countries
    - Simplified structure for smaller scale renewable projects
  - Mexican renewable investment would qualify
    - Canadian market will be important buyers
- CDM/JI unlikely to stimulate renewables in Mexico in near term
  - Carbon market not defined and Kyoto is not yet in force (likely in '03)
  - Value of credits may be volatile
    - No effective forward trading yet available
    - Verification issues need to be resolved

# How do we get equity providers into Mexico?

- Returns must be supra-normal relative to US/Canada market
  - Developers currently able to expand in domestic US markets
    - Little incentive to look south of the border
    - Concerns about dealing with local governments
- Renewables market must be seen as long-term development
  - PTC “stop/go” environment seen as detrimental to industry in US
  - Mexico must show long-term commitment at highest levels of state policy
- Credit risk of long-term capital must be addressed
  - Project lenders have become much more conservative





# Specific Actions

- Implement Renewable Portfolio Standard
  - Designate specific proportion of CFE portfolio
  - Clear statement of intent over long-term
- CFE should provide long-term PPAs
  - Competitive bidding RFP
    - Larger is better ie. 500-1000 MW
  - 25-year contracts
- Ensure Permitting processes enable quick and definitive resolution of environmental/social concerns
- Move to facilitate carbon credit trading through Kyoto mechanism