Ontario’s Renewable Potential

- 3000+ MW of wind power
- 500 MW of untapped small-hydro
- 260 MW farm methan digesters
- In a typical year, hot water heating accounts for 20% of a homes energy usage, a solar hot water system could supply about 50% of this energy
2004 Installed Wind Capacity Where Ontario Stands

- Germany
- Spain
- USA
- Denmark
- California
- Texas
- Ontario
- Canada

Megawatts (Thousands)
Southern Ontario & Wind Energy

• More Like Germany than Alberta
  - Population Density
  - Farm Size
  - Settlement Patterns

• Projects Will be More Like Germany
  - Smaller Projects
  - Clusters of Turbines
  - Single Turbines

DeWind
Ontario

• More Like Germany than Texas
  Population Density
  Farm Size
  Settlement Patterns

• Projects More Like Germany than Texas?
  Smaller Projects
  Clusters of Turbines
  Single Turbines

Paul Gipe, wind-works.org
Ferndale, Ontario
What ~50 TWh of German Renewables Would do in Ontario Today

Conventional
110TWh/yr

69%

Renewables
50TWh/yr

31%
What ~50 TWh of German Renewables Would do in Ontario with Conservation

- Conventional: 75 TWh/yr (60%)
- Renewables: 50 TWh/yr (40%)
What is OSEA? (Ontario Sustainable Energy Association)

- A Non-Governmental Organization
- An Association of Member Groups Across the Province
- Windsor-Kingston, Thunder Bay-Toronto
What Does OSEA Do?

• We Aid Our Member Groups
• We Provide Workshops
• We Help Build Renewable Coops
• We Develop Policy to Make it Happen
• We Support Community Wind
What is Community Wind?

- Wind turbines locally-owned: individually, co-operatively or collectively through a number of mechanisms (wind power co-ops and limited liability corps most common)
- The key is for the community to identify the turbines as their own
- The key is for the community to have a sense of control and stake in their future

• More Renewable Energy - Community investment drives incremental new project development.

• Strengthens Rural Communities - Generates new income for farmers and rural landowners.
• **Increases Local Acceptance** - Democratic ownership, community involvement and member education creates more positive support.

• **Conserves Energy** - Member education/awareness leads to reduced consumption.

• **Saves Money** - Generating energy closer to where used reduces transmission and distribution costs and the need for major grid upgrades.
• local control and benefits means a healthier, wealthier community
• Many banks and financial institutions provided 10 year loans for 60-80% of the installed cost
• Denmark’s “Farmers’ Bank” (Ringkøbing’s LandbobanK) have financed so many wind turbines they’ve been dubbed the “wind farmers’ bank”
• Minnesota – MinWind I & II
Farmer initiative
Motivated by need for extra income, preserving their farms and communities
2 partnerships with 2 turbines each
Structured to open membership to folks from the community who are not farmers
Partnerships are managed essentially as a co-operative
Financial support from federal tax credit and state WPPI of $0.015 per kilowatt-hour for wind
• Economic Effects
  Cost to Ontario hospitals to treat the victims of air pollution = $580,000,000 per year

• Health Effects
  The MOE reports coal-fired electricity generation is responsible for
  23% of SO₂ emissions,
  23% of mercury emissions, and
  20% of GHG emissions

  Air pollution is responsible for an estimated 1900 premature deaths in Ontario each year
• Demand 2002
  May ~ 16,000 MW
  August ~ 21,000
**Community Power** is locally owned and sited green power generation (e.g. ExPlace turbine).

- It is sustainable energy at a human scale, both rooted in and responsible to the local community.
• 150 MW of new, renewable, distributed energy generation within the next 2-6 years
• ~75,000 Ontario constituents directly participating in renewable energy development and production
• Up to $200 million in new investment, along with skilled employment during development, construction and operations phases of the projects
Royalties & Land Rent

- Signing Options ($1,000 CAD)
- Installation Bonus ($2,500 CAD/MW)
- Royalties Increase over Time
  1st 10 Years, 2nd 10 Years, 3rd 10 Years?
- Royalties on All Revenue Sources
  Green Tags, RECs, CO₂
- Security Deposit & Removal Bonds
Potential per Farm

- Turbines Use Only ~5-10%!
- Potential to Double Farm Income

For 1/2 of Ontario Farmers
Wind Energy in Ontario
OSEA’s Proposal

Year

2005 2006 2007 2008 2009 2010 2011 2012

Thousand MW

0 2000 4000 6000 8000

2005 2006 2007 2008 2009 2010 2011 2012

Year

OSEA
OSEA’s ARTs Proposal for Wind Energy

Thousand MW

Year

2005 2006 2007 2008 2009 2010 2011 2012

Lakeview

Lakeview + Lennox

Lakeview + Lennox + Lampton
Installed Solar PV Capacity 2004
Where Ontario Stands

- Germany
- USA
- Canada
- Ontario

0 100 200 300 400 500 600 700

OSEA
Ontario Job Growth from Wind with ARTs

Year
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012

Person-Years of Employment
- Manufacturing
- Service

2005: 0
2006: 5,000
2007: 10,000
2008: 15,000
2009: 20,000
2010: 25,000
2011: 30,000
2012: 35,000
Premium Cost for Wind Energy with OSEA’s ARTs in 2012

- Total Price: $0.120/kWh
- OSEA Tariff Cost: $0.004/kWh
- 8,000 MW
- 10% of Supply
Comparable Investments* $1 Billion CAD

Pickering A1 Plant Costs Already Sunk

12 Year Life
65% CF

25 Year Life
10% CF

Ontario Wind
36TWh/Lifetime

Pickering A1
47TWh/Lifetime

OSEA
Bruce Contract Negotiations

- MoE Enters Negotiations with Bruce
- Long-Term, Fixed-Price Contract
- Differs Little from Renewable Tariff
- We’re Happy to Begin Negotiations

Committee of Renewables Advocates
Wind, Solar PV, Biomass, Low-Impact Hydro