



# Carbon Trading Opportunities?

## Role of Forest Carbon

October 2010



**TransCanada**  
*In business to deliver*

# Agenda



- Who is TransCanada?
- Canadian and TransCanada's GHG Emissions
- Carbon Trading Opportunities – Can it reduce emissions?
- Why is Forest Carbon Important?
- Commercializing Forest Carbon
- Concluding Thoughts

# TransCanada Corporation (TSX/NYSE: TRP)

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- Pipelines
  - ..... Pipelines (Proposed)
  - - - Pipelines (In Development)
  - ⚡ Power Facilities
  - Gas Storage

## •Gas Pipelines

- 59,000 km wholly owned
- 7,800 km partially owned
- 250 Bcf of regulated natural gas storage capacity
- Average volume of 15 Bcf/d

## •Oil Pipelines\*

- Keystone 1.1 million Bbl/d
- Expandable to 1.5 million Bbl/d

## •Energy

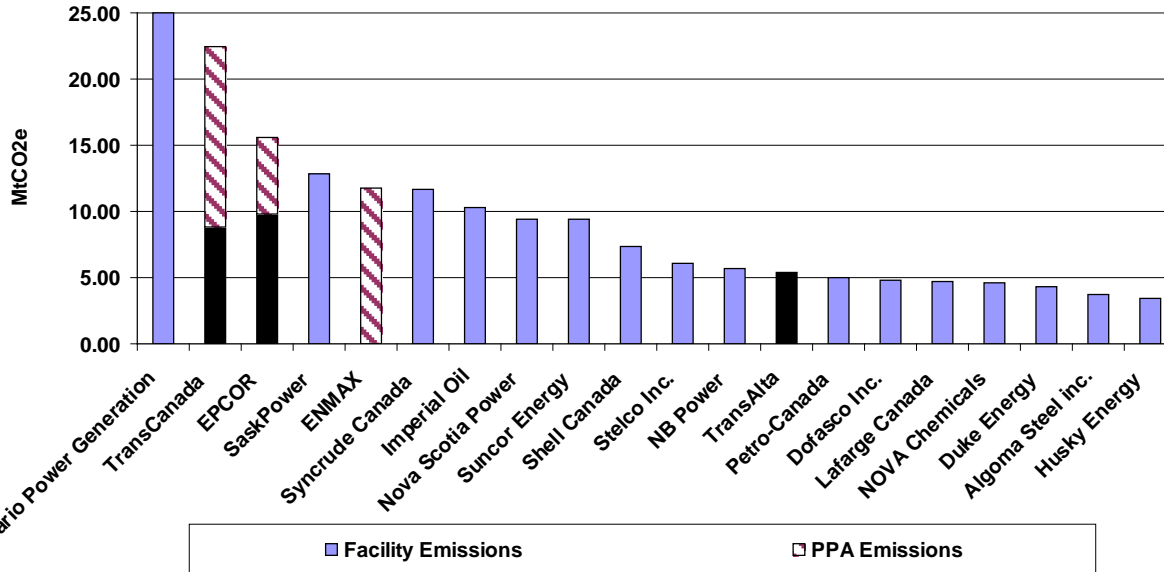
- 19 power plants, 10,900 MW
- Diversified portfolio, primarily low-cost, base-load generation
- 120 Bcf of non-regulated natural gas storage capacity

\* In development or under construction

# Canada's GHG Emitters and TransCanada GHG Emissions



**Top 20 Canadian Company CO<sub>2</sub>e Emissions with PPA's**  
(as reported in the NPRI, 2006)

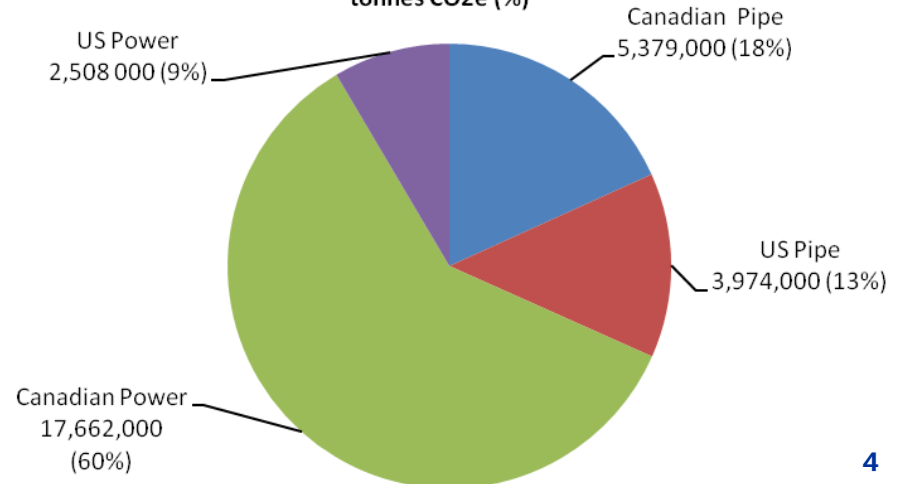


Annual GHG emissions approximately 30 MtCO<sub>2</sub>e

Approximately 21 MtCO<sub>2</sub>e from Power (68%) and 9 MtCO<sub>2</sub>e from Pipe (32%)

Largest foot print from coal PPAs that expire 2017 & 2020

**TransCanada 2008 GHG**  
tonnes CO<sub>2</sub>e (%)



# Environmental Market Experience



- Active in compliance markets, Alberta, B.C., Quebec, RGGI, NOx, etc
- Active in associations; CEA, CEPA, INGAA, IETA, IPOG, EPRI & EMA
- Have established an “Environmental Risk & Trading” department with origination, commercial transaction and analytic functions
- Currently spending millions/yr on GHG compliance, expecting costs to increase as regional regulations are implemented
- Active in Voluntary and Pre-Compliance Markets (RECs/CAR)

# Carbon Offset Project Types



TransCanada has transacted a variety of instruments and project types

- **Afforestation**
- **Biological Sinks**
- **Carbon Neutral Projects**
- **Energy Efficiency**
- **Enhanced Oil Recovery**
- **Landfill Gas**
- **Ozone Depleting Substances**
- **Waste Water**
- **Wind**



# Carbon Trading Opportunities - Can it reduce carbon?

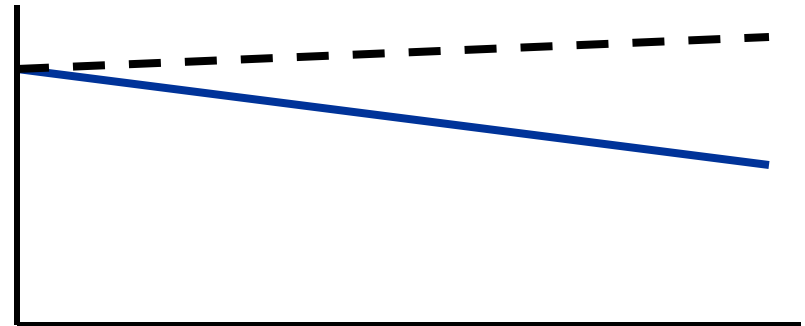


- **Tax vs Trade**
  - Both approaches can reduce emissions
- **Tax**
  - Price certainty, politically driven price
  - Emissions reduction uncertain
- **Trade**
  - Level of reductions dependant on cap and politically driven
  - Emissions reduction certainty
  - Enable markets to discover carbon price
- **Public perception of trading, especially carbon trading**
  - Reduce emissions, but how – does the common person understand
  - Can carbon trading contribute to meaningful emissions reductions

# Carbon Trading Opportunities - Can it reduce carbon?



- To understand this, we must understand what role 'trade' plays in cap and trade
- Components of cap and trade
  - Level of cap
  - Deminimus threshold
  - Offsets
  - Allocation
- Trade allows for efficient price discovery
  - lowest cost allowances, lowest cost abatement options to meet market demand
- Need to include all forms of emissions reductions and removals to provide market liquidity
- Forest carbon, by many accounts represent a very large source of emissions reductions





# Commercializing Forest Carbon



- **Public perception important**
- **Credits harvested from forest carbon and then traded must be directly linked to real GHG reductions/removals**
- **People intuitively understand that not cutting down trees or planting trees is a good thing**
- **Unlike other biological sequestration activities, forest carbon can more easily obtain public support**
- **Public support key for political action**
- **Forest carbon seems to have many of the technical issues resolved, such as measurement and quantification of carbon**
- **Additionally is something that needs to be addressed to move forward**
- **Cohesive/unified work is need to present a clear business case to regulators**
- **Political will is vital**

# Commercializing Forest Carbon



Some of the key issues that need to be addressed in a forestry project are:

1. Protocol / Standard to use
2. Additionality / Business-as-Usual
3. Permanence
4. Leakage
5. Measurement, Monitoring and Verification
6. Ownership (crown/private/first nations)
7. Carbon Pools to be quantified (Sources, Sinks & Reservoirs)
8. Bio-diversity and Community considerations

# Concluding Thoughts



- **Canada has a vested interest developing Forestry Carbon Offset projects**
- **Private. Crown, First Nations**
- **Very good access to forestry and carbon expertise**
- **Provides CO2 sequestration, economic development and compliance options**

