

Going Green:

Renewable Energy Financing

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RE in Ontario – the Big Picture

- Integrated Power System Plan
 - OEB approval
- Supply Mix Directive: January, 2006 directive to the OPA
- Conservation measures to reduce peak demand 6,300 MW by 2025, including:
 - Geothermal heating and cooling
 - Solar heating
 - Small scale (10 MW or less) customer-based electricity generation
 - Small scale natural gas fired co-generation
 - Generation encouraged by net metering
- Increased renewable energy by 2,700MW by 2010 and 15,700 by 2025:
 - Wind
 - Solar
 - Hydroelectric
 - Biomass
- Replace coal-fired generation
- Strengthen the transmission system to facilitate RE

OPA Electricity Supply Contracts

- Renewable Energy Supply (RES) I (300 MW)
- Clean Energy and Demand Side Management 2,500 MW RFP
- RES II (1000 MW)
- RES III (2,000 MW)
- Combined Heat & Power (CHP) I (1000 MW)
- CHP II (500 MW)
- GTA West Trafalgar RFP
- Northern York Region Gas-fired RFQ
- Clean Energy Standard Offer Program
- Renewable Energy Standard Offer Program

Renewable Energy Standard Offer Program

Technology	Executed Contracts	Capacity In-Service (MW)	Planned Capacity				Total Planned & In-Service
			2008	2009	2010	2011	
Wind	69	10.1	258	283.3	38	10	599.4
Hydro	15	6.7	5	30.2			41.8
Bio-Energy	20	16.9	38.9	5.4	5.8		66.9
Solar PV	158	0.3	151.3	134.9	29.9		316.5
RESOP Projects Total (MW)		34	453	454	74	10	1025

Contract Structure

- RESOP
 - Standard form PPA contract
 - 20 year term
 - Base rate of 11cents/kWh for wind plus premium and indexing
 - 42 cents/kWh for solar PV
 - Project size 10 MW or less
 - Must be commercially operational by 3rd anniversary

Contract Structure (cont'd)

- Connection impact assessment with LDC
- Environmental screening for certain projects (not a pre-contract requirement)
- Demonstrated site access
- "Take or pay" system: payment at fixed rate for all electricity delivered
- Environmental attributes as well as one-half of the federal ecoEnergy incentive are owned by the OPA
- Force Majeure provisions

RES Contract terms

- Standard form PPA-style agreement with OPA
- Contract Price set by bid terms for 20 year term
- “Take or pay” of all delivered electricity
- Minimum availability requirements
- Backed by LC for supplier breach
- Guarantee of supplier obligations
- Terms not negotiable
- Liquidated damages for delay in start
- Assignment limitations
- Most Environmental Attributes (“EAs”) claimed by OPA

RES Contract (cont'd)

- Financial Requirements – Bid Stage
- Equity provider commitment letter to advance or provide equity by milestone date
- Tangible Net Worth requirements for equity providers based on debt-equity ratio
- Equity provider(s) must have either an Investment Grade Credit Rating or a confirmation letter from a prescribed lender or a satisfactory debt to EBITDA ratio

RES Contract (cont'd)

- Confirmation letters from debt providers
- Category A or B lenders acceptable
- Category A lender is:
 - A financial institution listed in Schedule I or II of the Bank Act; or
 - A financial institution with one of the following credit ratings: (i.) A with S&P; (ii) A3 with Moody's, (iii) A low with DBRS, or (iv) A with Fitch IBCA
- Category A lender must state that it is highly confident that it will finance
- Category B lender has a Tangible Net Worth of at least \$1,750,000
- "Agreement in principle" is required of equity providers, Category B lenders and non-debt, non-equity financing sources

RES Lender Rights

- Restrictions on lender's security agreement
 - Indebtedness only of the Contract Facility
 - May not encumber government-owned premises
 - Subject to the terms of the RES contract
 - Not to limit OPA's enforcement rights
 - 5 days notice of enforcement to OPA
- OPA cannot terminate RES except on notice and subject to cure periods for supplier or lender
- "Step-in" type rights including managing the Contract Facility and performing the Contract and right to sell or assign and negotiate a replacement agreement with OPA

CES and CHP Contracts

- CES Contract
 - Gas-fired facilities
 - One co-gen
 - One demand management project
- CHP Contract
 - Renewable fuel-fired industrial co-gen facilities included using
 - Renewable biomass (organic waste, crops etc)
 - Bio-gas
 - Landfill gas
 - Quoted contract price up to proposed monthly and after that at market price (related to heat needs of industrial/commercial off-taker of heat)

Net metering

- Net metering is a provincial program that allows individuals who generate electricity from renewable sources to send surplus electricity from their generator to the grid, to offset the costs of electricity used when not generating sufficient electricity to supply all of their needs.

Provincial tax incentives

- Renewable Energy Systems Rebate Program (return of Retail Sales Tax)
 - This rebate applies only to residential premises.
- RST rebate on RE building materials incorporated into qualifying facilities expired January 1, 2008

Federal Incentives

- ecoENERGY program
 - A one cent per kWh incentive for production of renewable energy under the ecoENERGY program (formerly WPPI)
 - Rated capacity of 1 MW or more
 - EcoLogo certification for biomass and hydro
 - Test wind turbines exempted
 - Repayment of contribution if cumulative revenue exceeds a standard price
 - Application based on subject to program dollar cap
- Pilot Emission Removals, Reductions and Learnings (PERRL) Initiative
- GHG emission initiatives - uncertain

Federal Tax Incentives

- Canadian Renewable and Conservation Expenses (CRCE)
 - CRCE includes, with some limitations, test wind turbines and certain expenses related to getting the project running (e.g. access roads, clearing land, service connection, engineering) as long as at least 50% of expenses fall within the category of qualifying equipment specified in the ITA
 - CRCE does not include, among other things, most payments to non-residents, administrative and management expenses, land acquisition, depreciable capital property (other than certain test wind turbines)
- The advantages of CRCE include the ability to transfer benefits directly to shareholders through a flow through share structure, and can be used flexibly by the company and its shareholders.
- Company “renounces” its CRCE and it is passed through to shareholders as an expense deducted from their own income.

Federal Tax Incentives (cont'd)

- Accelerated Capital Cost Allowance
 - A 50-per-cent accelerated CCA is provided under Class 43.2 of Schedule II to the *Income Tax Regulations* for specified energy generation equipment. Eligible equipment must generate electricity using a renewable energy source (e.g. wind, solar, small hydro)
 - Is available for assets acquired on or after February 23, 2005.
 - Where the majority of the tangible property in a project is eligible for Class 43.1 or Class 43.2, certain intangible project start-up expenses (e.g. feasibility studies, engineering and design work) qualify. They may be deducted in full in the year incurred or carried forward indefinitely for use in future years.

Federal Tax Incentives

- Budget 2008 changes
 - Ground source heat pumps used to collect solar heat (or air cooling) from the ground in industrial, commercial and residential uses for space and water heating are eligible for class 43.2 treatment
 - The fuel source categories for biogas production equipment is expanded to include animal matter and sludge
 - Restrictions requiring the taxpayer to directly use the by-product of the electricity generation process (such as heat or bio-oil or biogas) have been loosened
 - GST/HST relief is provided to those who supply a right of entry or a use to generate for solar or wind power

Municipal Tax

- Municipal tax treatment of renewable energy projects
 - *Assessment Act* regulation 282/98, section 45.4 provides that an increase in property value for wind energy projects is fixed at \$40,000 per MW of installed nameplate capacity
 - As of yet, solar treatment is unclear – large-scale, ground mount solar makes farm use on that land impossible, unlike wind
 - Generally, generators taxed under industrial property class which is the highest rate

RE deal history - Wind

- 2006 and 2007 from public data
- Western Canada
 - 7 projects totaling 398 MW (Alta 6 and Sask 1)
- Central Canada
 - 9 projects totaling 686 MW
 - Ontario lifted offshore moratorium
- Atlantic Canada
 - 14 projects totaling 83 MW
- \$2.173 billion invested in 30 projects, averaging \$1.9 million per MW
- Debt/equity ratio of 33/67

Wind Deals (cont'd)

- For equity:
 - Vast majority financed through balance sheet deals
 - CRCE pass-through
 - Market conditions make retail deals challenging
- For debt:
 - 99% is senior and subordinated debt from lifecos and some banks

Trends in Financing RE

- Continuing investor appetite for pipeline and projects
- Increased knowledge in the market and rising valuations
- Increasing focus on supply arrangements for key technology (turbines or PV panels), developer expertise
- Canada remains RFP/standard offer focused – little merchant RE

Trends in Financing RE (cont'd)

- Consolidation of key players is increasing the costs of entry
- RFP process delays testing investor patience
- Lifeco's continuing interest
- Banks also looking at sector – providing construction and some longer term loans
- European banks experienced and willing
- Foreign players entering the market (may be offshoot of US PTC uncertainty)

Trends in Financing RE (cont'd)

- Turbine supply loans required to finance turbine purchase as suppliers are asking for larger down payments based on continuing tight supply
- Turbine warranty coverage declining – results in higher maintenance contingency
- Project financing still of interest
- Portfolio and multiple project financing
- Balance sheet financing will still be major vehicle
- PPA covenants continuing to tighten

Key Players in the Deal

- Power purchaser/Sponsor
 - Merchant power – higher risk
 - “Take or pay” sale to industrial/commercial user or to wholesaler/trader or retailer
 - Government entity counterparty on long term contract
 - Standard offer contract
- Developer
 - Obtains PPA, assembles land, obtains permits and licenses
 - Signs agreements, secures financial resources
- Engineering and Procurement Contractor
 - Builds the facility, obtains key equipment (turbines, solar panels)

Key Players (cont'd)

- Investors
 - Developer, private equity, IPO shareholders, tax investors
- Equipment supplier
 - Not historically part of the deal but turbine supply contracts are key to deal timing
 - Becoming “part of the deal” with increasing local requirements, such as in Quebec
- Operations and Maintenance
 - Ensures operation of facility and maintenance of turbines/panels
 - Often will be developer or EPC, relying in equipment supplier warranties and O&M agreements
- Lenders
 - Lifecos, banks etc

Key Project Risks and Mitigants

- Completion Risk
 - Site control
 - Turnkey contracts
 - EPC Contractor
 - Fixed cost, date certain and scope
 - Liquidated damages
 - Performance bond
 - Proven technology and design
 - Insurance
 - Contingency amounts

Key Project Risks and Mitigants

- Site control
 - Lease arrangements
 - Wind vs. solar
 - Property tax treatment
 - Easements
 - Transmission
 - First Nations issues
- Permits
 - OEB licensing
 - Environmental
 - Municipal
 - Zoning
 - NIMBY
 - Engineering/ESA

Key Project Risks and Mitigants

- Regulatory risks
 - Permit requirements
 - Electrical safety and OEB licenses
 - OEB and Hydro One control on connection issues
- Technology Risk
 - Turbine technology
 - Solar panels
- Insurance
 - Limited range of products

Key Project Risks and Mitigants

- Suppliers
 - Availability and cost
 - Down payments increasing
 - Delivery flexibility
 - Warranty terms
- EPC Contractor
 - Experienced contractor and proven design
 - Fixed cost/scope/schedule
 - Liquidated damages with large or no caps on liability
 - Bonds, LC's, guarantees
- Connection issues
 - LDC, Hydro One connection impact, timing (Hydro One delays) and payment for upgrades

Key Project Risks and Mitigants

- Operating risk
 - Experienced, creditworthy operator
 - Fixed or cost plus
 - Safety, security and environmental safeguards
 - Permits – planning, environmental, building
 - Perform PPA and interconnection agreements
 - Incentives for good performance
 - Insurance
 - Equipment and service warranties

Key Project Risks and Mitigants

- Revenue risk
 - Resource
 - Wind
 - Technology
 - Market and engineer studies
 - Interconnection studies
 - Tax treatment (GAAR)
 - PPA
 - “take or pay”
 - RECs not saleable
 - Pricing fixed (with escalator) or, less favourably, linked to market price (merchant power)
 - Purchaser risk if not OPA

Key Project Risks and Mitigants

- PPA terms
 - Completion requirements
 - Default, damages for breach and termination
 - Force majeure
 - Financing impact
- Transmission access – connection costs
- Environmental risk
 - EAs not required for solar projects or wind under 2 MW
 - Env. screening for wind greater than 2 MW

Financing Vehicles

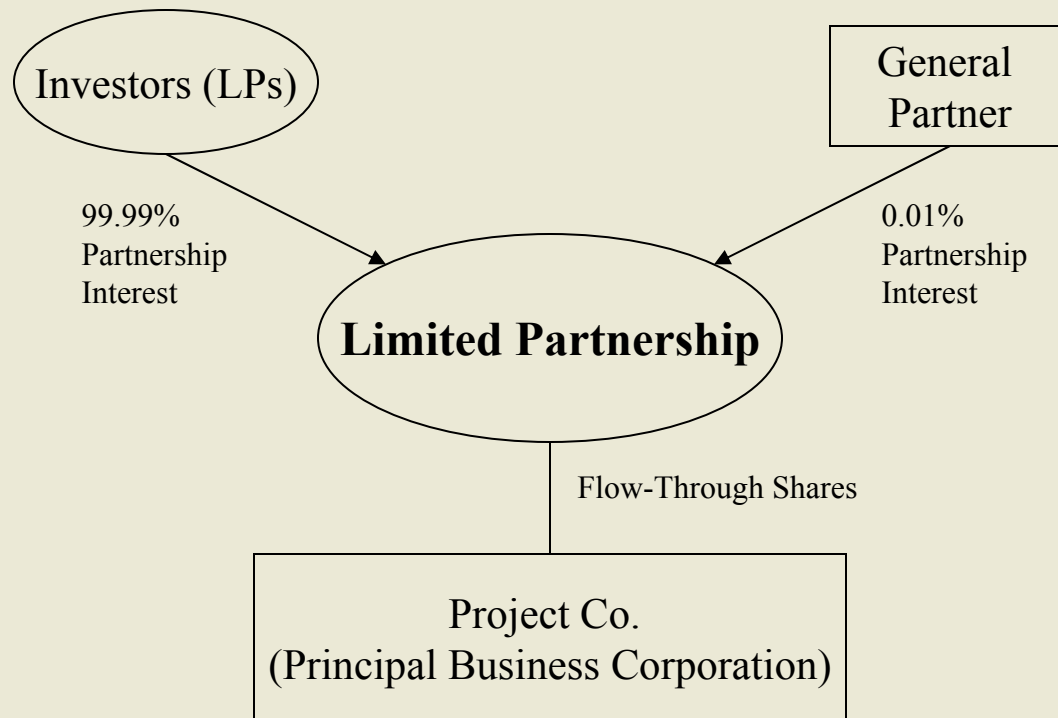
- Project financing (limited or non-recourse)
 - Exception
 - Technology still new
 - Players and track record still new
 - Sponsor strength and track record a key variable
- Construction facility
 - EPC contractor can be a JV partner with developer
 - Balance sheet financing – refinancing with debt and/or equity once technology/construction risk clearer
- Balance sheet financing
 - Bigger, experienced players
- Equity investors
 - Tax-advantaged financial structures

Lender issues

- What lenders like
 - Sponsor track record and readiness to put capital at risk
 - Proven technology
 - Long-term contracts with fixed profit margin
 - Credit-worthy counterparties
- What is hard to lend against
 - Commodity price risk
 - Spot market volatility
 - Regulatory out clauses
 - REC upside or undefined renewable portfolio standards

Flow-through Shares

- Basic structure



What are Flow-Through Limited Partnerships?

- Flow-through Limited Partnerships (LPs) invest in flow-through shares
- Certain expenditures are allowed to be renounced by the issuing companies and “flow-through” to investors
- The common shares purchased are otherwise identical to other common shares issued by the company

What are Flow-Through Shares?

- Shares (or rights to acquire such shares) of a “principal-business corporation”
- Issued under a written agreement to incur and renounce Canadian Exploration Expenses (CEE) (which includes Canadian renewable and conservation expenses (CRCE)) and/or Canadian Development Expenses (CDE)

“Principal-Business Corporation”

- Most commonly, corporations whose principal business is:
 - Exploring or drilling for petroleum or natural gas
 - Mining or exploring for minerals
 - Development of certain renewable energy projects (i.e. wind)
 - A combination of the foregoing
- Or a holding corporation, substantially all of the assets of which are shares or indebtedness of one or more related principal-business corporations

Other vehicles

- US structures:
 - Leveraged lease
 - Not used here in RE context because of inability to roll out tax benefits to investors
 - Partnership flips
 - Can be Canadianized
 - Certain class of qualified investors