Developing Community Wind in New Brunswick

Created for the 2017 Smart Shift Summit (NBEN)
March, 2017

Who are Natural Forces?

- **Private Independent Power Producer based in Halifax, Nova Scotia;**
- **Active in the Maritimes renewable energy sector since 2001;**
- **Wind, hydro, and solar projects in development in BC, Saskatchewan, New Brunswick, and NFLD; and**
- **Partnerships with First Nations, large corporations, universities, and CEDCs/CEDIFs.**
- **Operating Assets (by Project):**
  - Kent Hills (NB): 150 MW
  - Fairmont (NS): 4.6 MW
  - Gaetz Brook (NS): 2.3 MW
  - Hillside-Boularderie (NS): 4.0 MW
  - Auld's Mountain (NS): 4.6 MW
  - Barrachois (NS) 4.0 MW
  - Gardiner Mines (NS): 5.4 MW
  - Amherst (NS) 6.0 MW
  - Auld's Mountain II (NS) 1.6 MW
- **Development Assets (by Province):**
  - British Columbia
  - Saskatchewan
  - New Brunswick

Project Partnerships: Key to Success

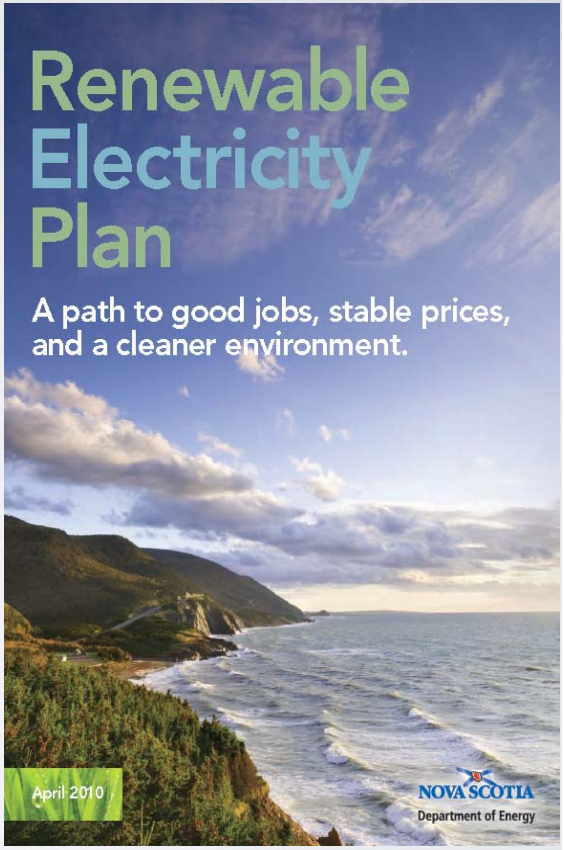
- Understanding each partner's objectives (not just economic ones)
- Nurturing the relationship for the long term success
- Common understanding of risk & reward and the appetite for each party involved
- Common understanding of financial commitments from each party
- A true commitment to delivering promised obligations
- Honesty & Respect

Nova Scotia Example (CORP + CEDC)

In 2015 Natural Forces (private corporation) partnered with Wind4All Communities IV (CEDIF corporation) on the Barrachois Community Wind Farm located on Cape Breton Island.

Key Metrics:

- Development phase: Q3 2011 – Q3 2014
- Financing & pre-construction phase: Q3 2014 – Q2 2015 CEDIF
- Construction phase: Q2 2015 – Q3 2015
- Energisation: Q3 2015
- PPA price and length: $131/MWh, 20 year term
- Technology & Installed Capacity: 2 x Enercon E-92 (4 MW)
- CAPEX: ~$14m
- Equity ownership:
  - *Wind4All Communities IV: 46%*
  - *Natural Forces: 54%*
- Annual revenue: $1.9m

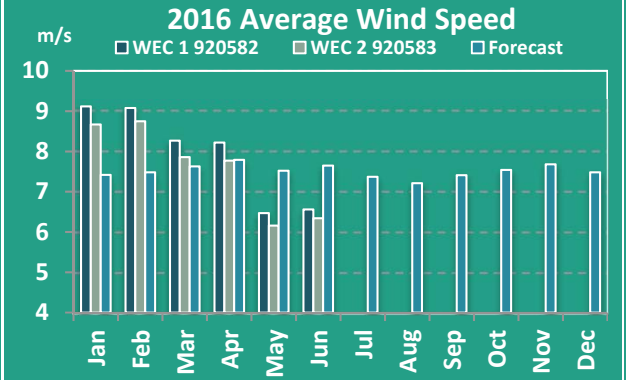


Wind4All

BARRACHOIS WIND FARM

Investor Update Q2 2016: Wind4All Communities IV

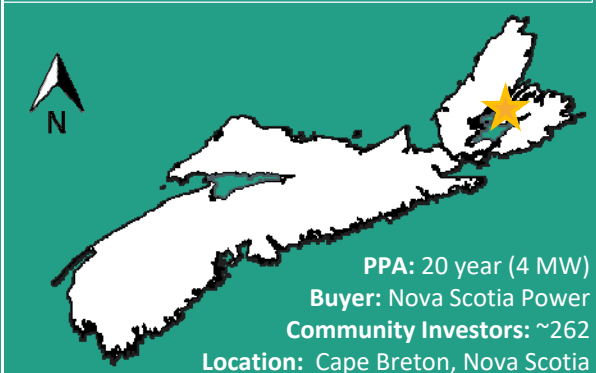
ON-SITE WIND RESOURCE



- 2016 YTD (Actual): 7.7 m/s
- 2016 YTD (Budget): 7.2 m/s

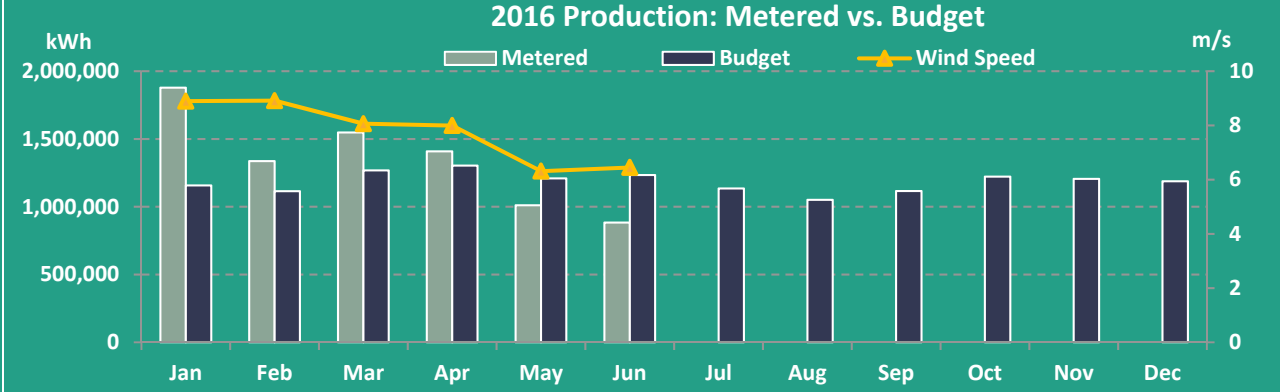
Variance (above budget): +7%

WIND FARM BIO



PPA: 20 year (4 MW)
Buyer: Nova Scotia Power
Community Investors: ~262
Location: Cape Breton, Nova Scotia
Technology: 2 x Enercon E-92, 2.35 MW
Annual Production (budget): 14,200 MWh

WIND FARM PRODUCTION STATS



- 2016 YTD (metered): 8,069 MWh
- 2016 YTD (budget): 7,287 MWh

Variance (above budget): +11%

- 2015 Metered (partial year): 5,086 MWh
- 2015 Budget (partial year): 4,733 MWh

Variance (above budget): +7.5%

2016 CARBON DISPLACEMENT

- Metered Production: 8,069 MWh
- CO_2 Displaced (total): ~6,251 tonnes
- CO_2 Displaced (per investor): ~24 tonnes
- Equivalent to taking 1,053 cars off the roads

X 1,053!

Equivalency Factor: 7.03×10^{-4} metric tons CO_2 / kWh
Source: http://tinyurl.com/znx8j6j

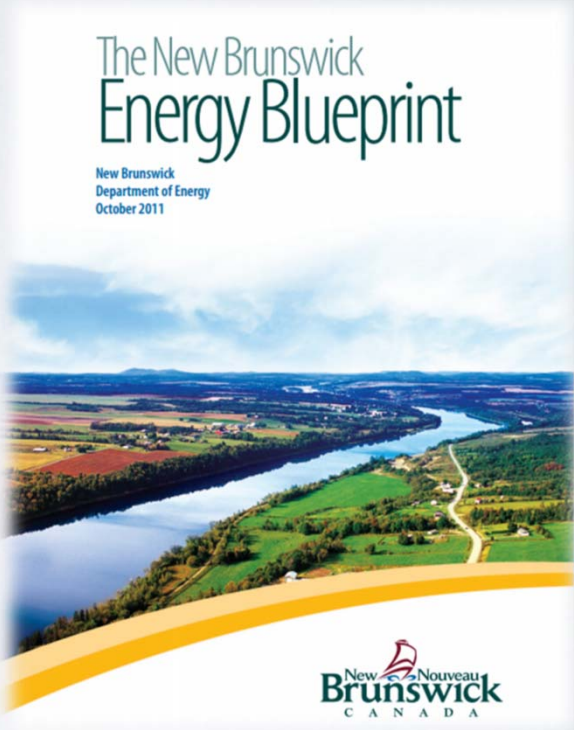
CEDIF FINANCIAL RETURNS

$210,042 Total Aggregated Dividends Paid	3,000,600 Outstanding Common Shares
$210,042 Most Recent Dividend Paid (June 2016)	~14% 20 Year IRR

DATE	EVENT	CASH
2015	Initial Share Purchase	-$1.00
2015	Equity Tax Credit	$0.35
2016	1 x Dividends Paid	$0.07
TOTAL CAPITAL RETURNED		**$0.42**

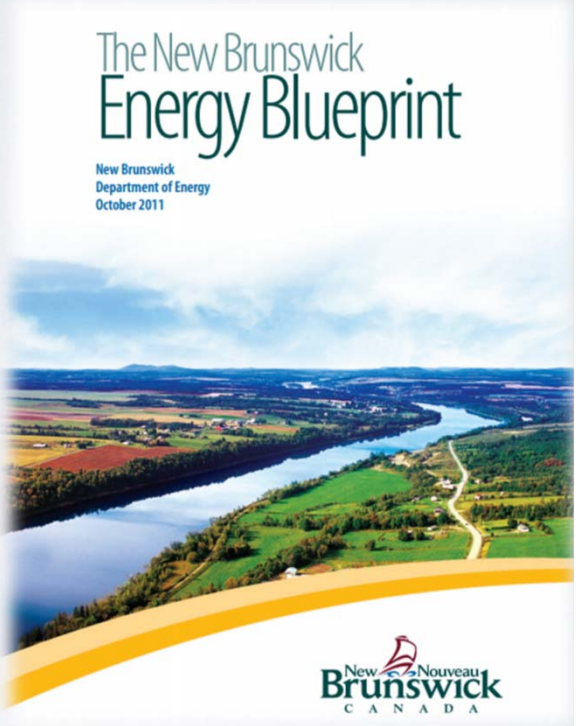
New Brunswick Policy

- 2011 - New Brunswick Energy Blueprint: 40% renewable by 2020;
- Final “LORESS” regulations approved in November 2015;
- LORESS made up of 3 Components, focused on First Nation and local entity participation:
  - *Component **#1** (Aboriginal Businesses): 40 MW*
    Closed for NB Power Review
  - *Component **#2** (Local Businesses): 40 MW*
    EOI’s due April 2017
  - Component **#3** (Embedded Generation): ~20MW
    Closed – likely to be renewed 2018



New Brunswick Policy (Cont.)

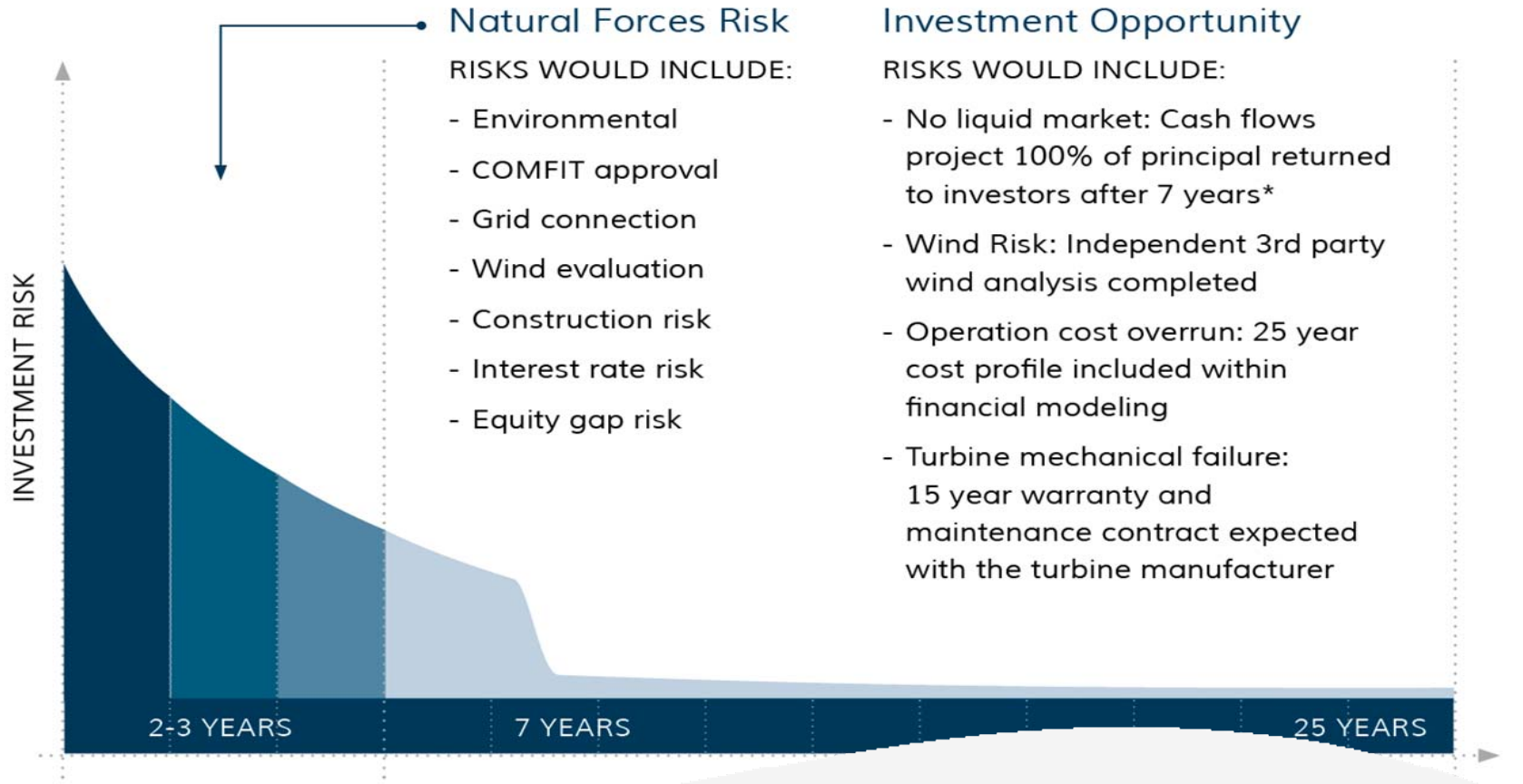
- The LORESS programs allows (1) universities, (2) non-profit organizations, (3) associations, (4) co-operatives, (5) First Nations and (6) municipalities to participate.
- NB Power community information sessions **this week**, as follows:
  - Grand Falls, Tuesday, March 28, 6 p.m., Centre E.P. Sénéchal, 60 Ouellette St.
  - Bathurst, Wednesday, March 29, 1 p.m., KC Irving Regional Centre, 14 Sean Couturier Av.
  - Miramichi, Wednesday, March 29, 6 p.m., Rodd's Miramichi River Inn, 1809 Water St.
  - Fredericton, Thursday, March 30, 10 a.m., Fredericton Convention Centre, 670 Queen St.
  - Moncton, Thursday, March 30, 6 p.m., Rodd Moncton Hotel & Resort, 434 Main St



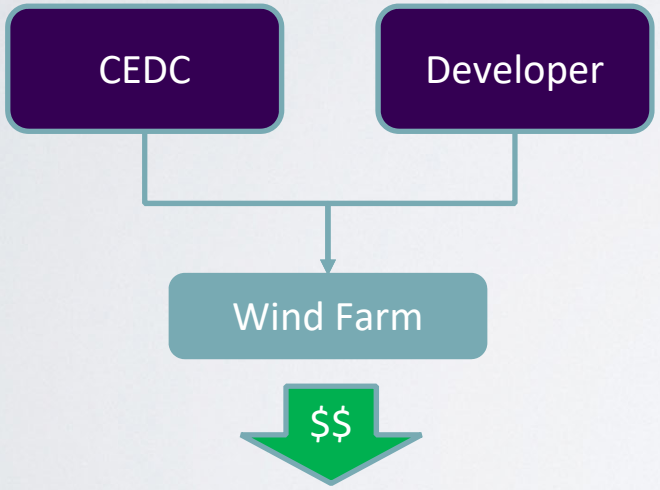
Considerations

1. What do you want to achieve?
2. Do you have the necessary resources to development a wind project (or do you need a partner)?
3. What is your appetite for risk?
4. What are your ownership objectives and financial capabilities?
5. Is a long-term ownership important?
6. Is your desired role ‘passive’ or ‘active’?

What is Risk?


Natural Forces Risk
RISKS WOULD INCLUDE:
- Environmental
- COMFIT approval
- Grid connection
- Wind evaluation
- Construction risk
- Interest rate risk
- Equity gap risk
Investment Opportunity
RISKS WOULD INCLUDE:
- No liquid market: Cash flows project 100% of principal returned to investors after 7 years*
- Wind Risk: Independent 3rd party wind analysis completed
- Operation cost overrun: 25 year cost profile included within financial modeling
- Turbine mechanical failure: 15 year warranty and maintenance contract expected with the turbine manufacturer
INVESTMENT RISK
2-3 YEARS
7 YEARS
25 YEARS

Passive Ownership Model (individual investment in CEDC)



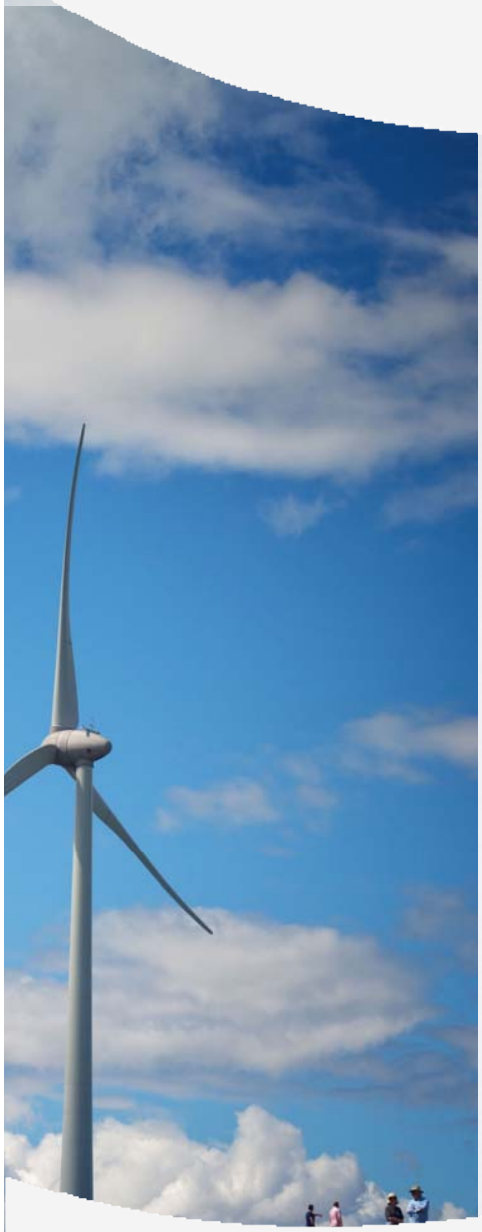
- Developer develops, finances, and constructs wind farm at its own risk.
- NB CEDC invests in the wind farm only after development risk is removed – no active involvement in wind energy development (silent partner).

Pros:

1. No prior wind energy experience needed;
2. Investment may start as low as $500;
3. Low investment risk; and
4. Investment avails NB tax credits

Cons:

1. Limited involvement / influence in the wind farm development;
2. Difficult to find a good CEDC to invest in (reliance on developer);
3. Lower financial returns; and
4. No secondary market for to sell shares into – long term investment.



Active Ownership Model (local entity partnership)

1. 'Local Entity' enters into JV with developer to co-develop wind farm from inception. Partners work together to:
   - Navigate LORESS policy regulation.
   - Take on development risk (land, EA, WRA, PPA etc.).
   - Provide the necessary equity needed.
2. If successful, partnership finances, constructs and operates wind farm.
3. Economic ownership is commensurate with financial desires / abilities.

Pros:

1. Involvement / influence in wind farm development early on; and
2. If successful, project partners should yielder higher investment returns than the passive investment (risk & reward).

Cons:

1. High risk venture;
2. Difficult to find experienced development partner; and
3. High capital outlay ($1m equity need for a single 4.2MW turbine)


Thank you!