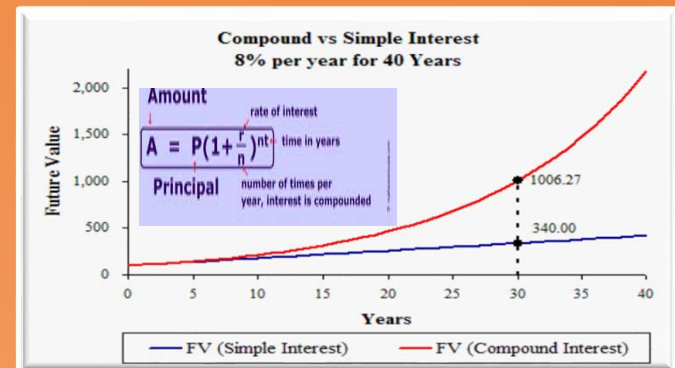
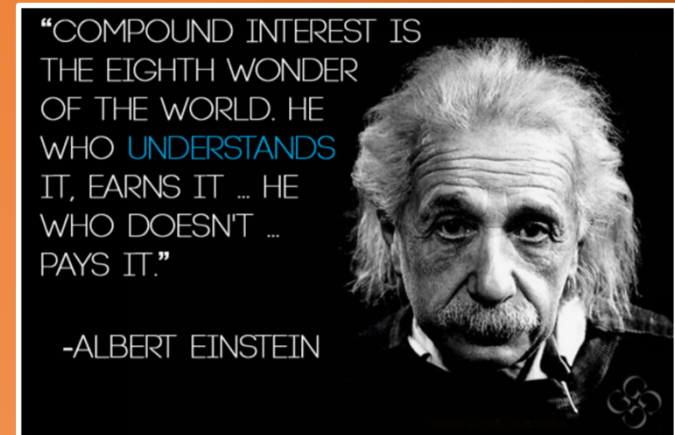
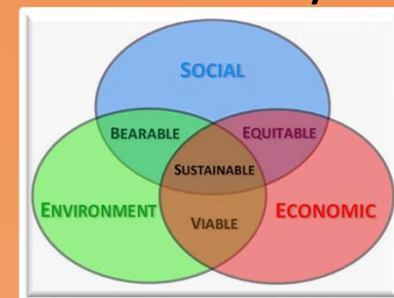


Carbon Tax and Investment Plan (CTIP)

- Uses the power of compound interest to fund the transition to 100% Renewable
- The tax revenue pays for the solutions while creating jobs
- Compound interest is fueled by displacing fossil fuels
- Lowest cost policy option
- Does not need carbon price increase to remain effective
- Integrated solution
- Mostly supply side policy for a mostly supply side problem
- Sustainable Economic, Environment, and Social Policy
- Significant new source of revenue for provinces without fossil fuels
- Revenue replacement for provinces with fossil fuels
- Stabilizes energy rates at near current levels well into the future
- Thousands of jobs during multi decade construction boom
- Fuels economic growth during multi decade construction boom
- Flexibility for each province to choose their own energy mixes
- Guaranteed to work. All variables affect only “when” the objective is achieved not “if” the objective is achieved

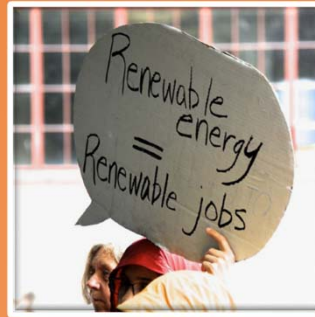


Sustainability

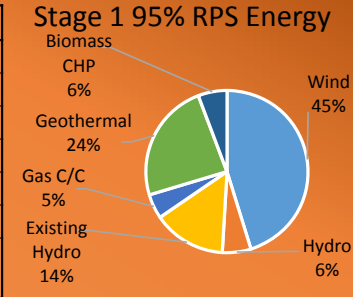


When Stage 2, 100% Renewable energy, is achieved:

- All of the generation technology will be owned by the public debt free
- Low Operations and Maintenance Cost (O&M)
- Essentially zero fuel cost
- Generating approximately **\$2 Billion per year** for New Brunswick



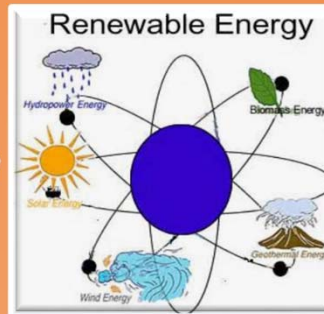
Stage 1 95% RPS	Capacity
Hydro	1021 MW
Geothermal	644 MW
Bio CHP	489 MW
Wind	2750 MW
Natural Gas	1300 MW
Pumped Storage	100 MW
Storage (Tesla Powerwall)	1400 MW



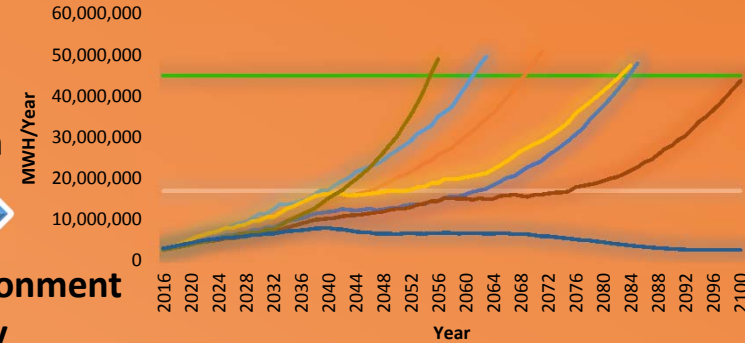
Economy Wide Carbon Tax \$15-\$30 /Ton



Public Investment



Environment Policy



- Stage 1 95% Electricity Renewable Portfolio Standard
- Stage 2 100% Renewable Energy Renewable Portfolio Standard
- 2036 \$30 Per Ton Accumulated MWh Per Year Including Existing Hydro
- 2045 \$20 Per Ton Accumulated MWh Per Year Inc Existing Hydro
- 2055 \$15 Per Ton Accumulated MWh Per Year Inc Existing Hydro
- 2056 \$30 Per Ton 20% Increase in Capital Cost Accumulated MWh Per Year Inc Existing Hydro
- 2075 \$15 Per Ton 20% Increase in Capital Cost Accumulated MWh Per Year Inc Existing Hydro
- 2075 \$15 Per Ton 20% Decrease in Capital Cost Accumulated MWh Per Year Inc Existing Hydro
- \$15 Per Ton Accumulated MWh Per Year Including Existing Hydro Without Reinvestment

Jobs ↑ Social Policy

\$70/MWh ↓ Economic Policy

Power Purchase Agreements



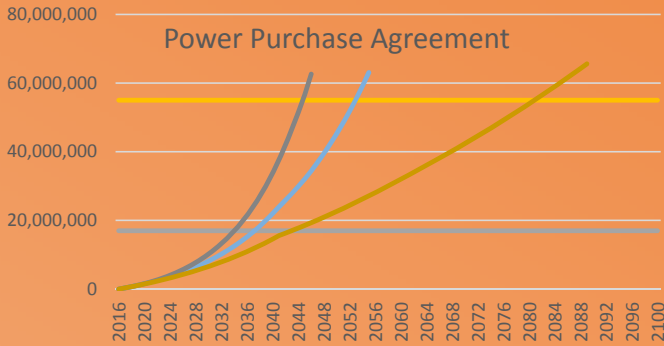
- * Solar Power
- * Wind Farms
- * Hydro
- * Geothermal

Reinvestment \$/MWh= PPA-O&M

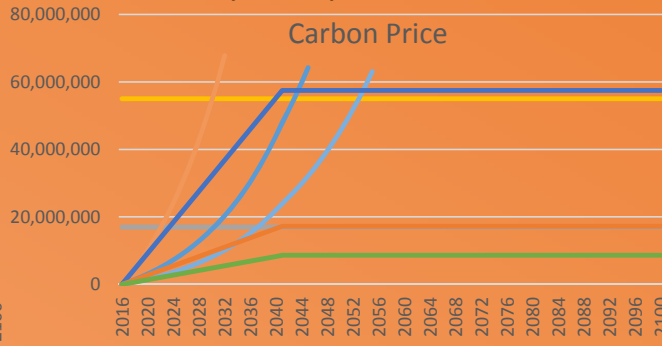
UNBSJ Professor of Economics, Dr. Rob Moir. "The concept of **reinvesting** in environmentally-friendlier energy production and energy efficiency to create a compound interest effect is founded economic theory. As such this policy should be considered by all provinces and not only New Brunswick."



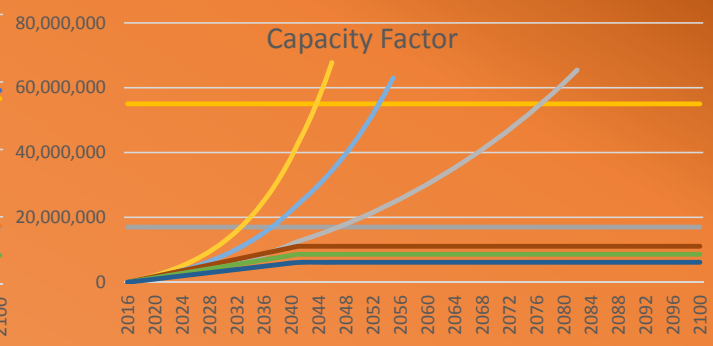
Sensitivity Analysis



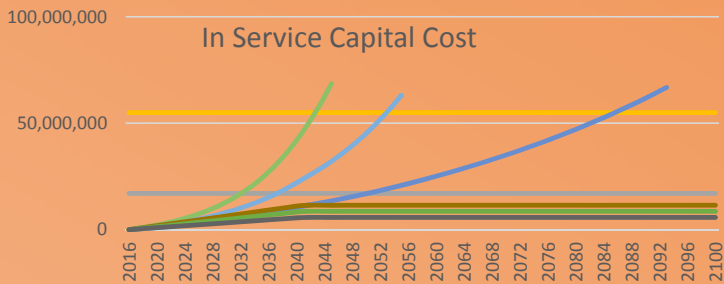
- Target 1 100% Renewable Electricity MWh Per Year
- Target 2 100% Renewable Energy MWh Per Year
- \$15 Per Ton MWh/Year CTIP
- \$15 Per Ton LCOE \$90 MWh/Year CTIP
- \$15 Per Ton \$50 LCOE MWh/Year CTIP



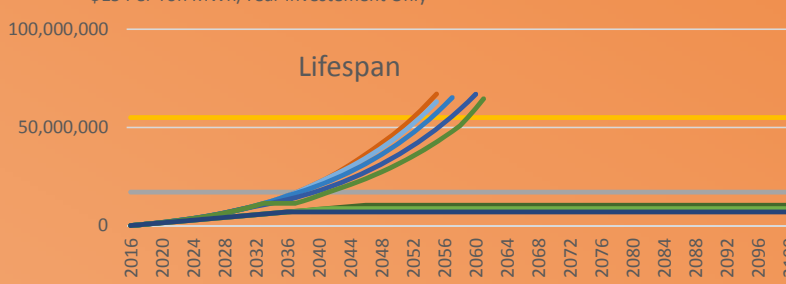
- Target 1 100% Renewable Electricity MWh Per Year
- Target 2 100% Renewable Energy MWh Per Year
- \$100 Per Ton MWh/Year CTIP
- \$30 Per Ton MWh/Year CTIP
- \$15 Per Ton MWh/Year CTIP
- \$100 Per Ton MWh/Year Investment Only
- \$30 Per Ton MWh/Year Investment Only
- \$15 Per Ton MWh/Year Investment Only



- Target 1 100% Renewable Electricity MWh Per Year
- Target 2 100% Renewable Energy MWh Per Year
- \$15 Per Ton .45 Capacity Factor MWh/Year CTIP
- \$15 Per Ton MWh/Year CTIP
- \$15 Per Ton .25 Capacity Factor MWh/Year CTIP
- \$15 Per Ton .45 Capacity Factor MWh/Year Investment Only
- \$15 Per Ton MWh/Year Investment Only
- \$15 Per Ton .25 Capacity Factor MWh/Year Investment Only



- Target 1 100% Renewable Electricity MWh Per Year
- Target 2 100% Renewable Energy MWh Per Year
- \$15 Per Ton 25% Decreased Capital Cost MWh/Year CTIP
- \$15 Per Ton MWh/Year CTIP
- \$15 Per Ton 50% Increase Capital Cost MWh/Year CTIP
- \$15 Per Ton 25% Decreased Capital Cost MWh/Year Investment Only
- \$15 Per Ton MWh/Year Investment Only
- \$15 Per Ton 50% Increase Capital Cost MWh/Year Investment Only

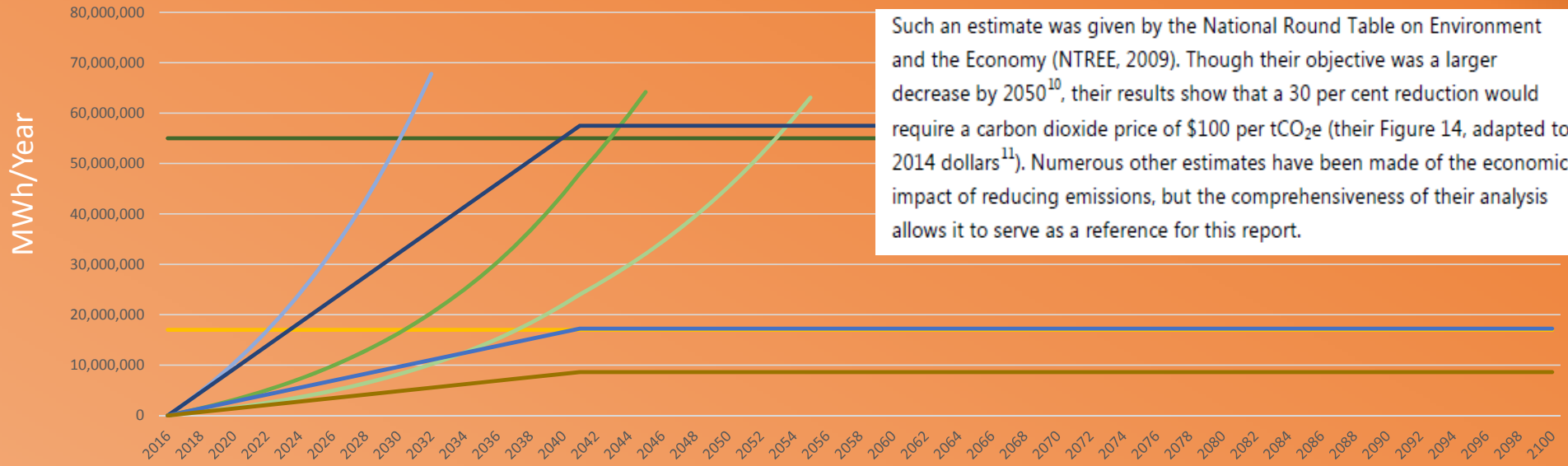


- Target 1 100% Renewable Electricity MWh Per Year
- Target 2 100% Renewable Energy MWh Per Year
- \$15 Per Ton 30 Year Lifespan MWh/Year CTIP
- \$15 Per Ton MWh/Year CTIP
- \$15 Per Ton 20 Year Lifespan MWh/Year CTIP
- \$15 Per Ton 15 Year Lifespan MWh/Year CTIP
- \$15 Per Ton Non Capital Cost MWh/Year CTIP
- \$15 Per Ton 30 Year Lifespan MWh/Year Investment Only
- \$15 Per Ton MWh/Year Investment Only
- \$15 Per Ton 20 Year Lifespan MWh/Year Investment Only

Sensitivity analysis demonstrates that the CTIP targets are **ALWAYS** achieved. Changes in any of the macro economic variables only changes “when” a target is achieved not “if” the target is achieved because of the **exponential** nature of the policy. The “investment only” modeling is linear and requires price increases to counteract any changes in the variables.

Sensitivity Analysis Policy Options

Parliamentary Budget Office April 2016
(Revenue Neutral) \$100/Ton



Such an estimate was given by the National Round Table on Environment and the Economy (NTREE, 2009). Though their objective was a larger decrease by 2050¹⁰, their results show that a 30 per cent reduction would require a carbon dioxide price of \$100 per tCO₂e (their Figure 14, adapted to 2014 dollars¹¹). Numerous other estimates have been made of the economic impact of reducing emissions, but the comprehensiveness of their analysis allows it to serve as a reference for this report.

- Target 1 100% Renewable Electricity MWh Per Year
- Target 2 100% Renewable Energy MWh Per Year
- \$100 Per Ton MWh/Year CTIP
- \$30 Per Ton MWh/Year CTIP
- \$15 Per Ton MWh/Year CTIP
- \$100 Per Ton MWh/Year Investment Only
- \$30 Per Ton MWh/Year Investment Only
- \$15 Per Ton MWh/Year Investment Only

10-Year Plan - Rate Sensitivity / Mactaquac Cost Scenario Analysis

SUMMARY OF ANALYSIS

Sensitivity (a) - Original Fiscal Year Ending March 31 (in millions \$)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Base Costs															
Average Rate Increase	2.0%	2.0%	2.0%	2.0%	2.0%	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Capital Expenditures	277	318	273	235	251	444	775	908	1,046	1,110	955	658	402	447	244
Net Debt	4,806	4,677	4,520	4,364	4,180	4,159	4,489	4,798	5,361	5,960	6,354	6,488	6,825	6,976	6,847
% Debt in Capital Structure	90.4%	87.6%	84.6%	81.9%	79.0%	76.7%	76.3%	75.5%	76.2%	76.7%	76.2%	75.6%	78.7%	80.2%	79.9%
25% Increase in Costs															
Average Rate Increase	2.0%	2.0%	2.0%	2.0%	2.0%	1.0%	1.0%	1.0%	1.0%	5.1%	5.1%	5.1%	5.1%	5.1%	5.1%
Capital Expenditures	277	318	273	237	257	494	900	958	1,346	1,335	1,117	758	552	497	256
Net Debt	4,806	4,677	4,520	4,367	4,168	4,218	4,676	5,130	5,910	6,748	7,289	7,402	7,885	8,016	7,752
% Debt in Capital Structure	90.4%	87.6%	84.6%	81.9%	79.0%	77.0%	77.0%	76.9%	78.1%	79.1%	78.7%	78.1%	80.9%	81.6%	79.9%
50% Increase in Costs															
Average Rate Increase	2.0%	2.0%	2.0%	2.0%	2.0%	1.0%	1.0%	1.0%	1.0%	1.0%	6.75%	6.75%	6.75%	6.75%	6.75%
Capital Expenditures	277	318	273	240	262	544	1,025	1,108	1,446	1,560	1,280	858	612	547	266
Net Debt	4,806	4,677	4,520	4,369	4,176	4,275	4,856	5,469	6,438	7,500	8,176	8,440	8,904	9,088	8,663
% Debt in Capital Structure	90.4%	87.6%	84.6%	81.9%	79.0%	77.2%	77.7%	77.9%	79.5%	80.8%	80.3%	79.5%	82.2%	82.5%	79.9%
Sensitivity (b) - Smooth Fiscal Year Ending March 31 (in millions \$)															
Base Costs															