

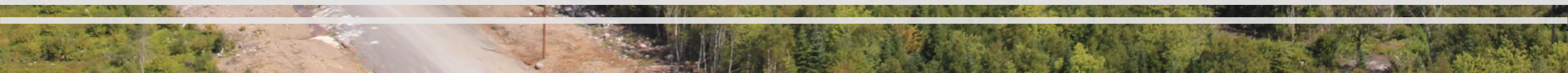


AREA's Financing of the Ellershouse Wind Farm

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Alternative Resource Energy Authority

Municipal corporation owned by Antigonish, Mahone Bay and Berwick

- Each owner runs a municipal electric utility
- Riverport also a key customer

Wind farm provides municipal utility customers

- price predictability
- carbon risk mitigation

Wind farm provides municipalities

- new, long-term, stable revenue streams
- economic development
- citizen participation in cleantech

- 23.5MW, 10 Enercon turbines

- Municipal collaboration is the showcase aspect of AREA



AREA's video

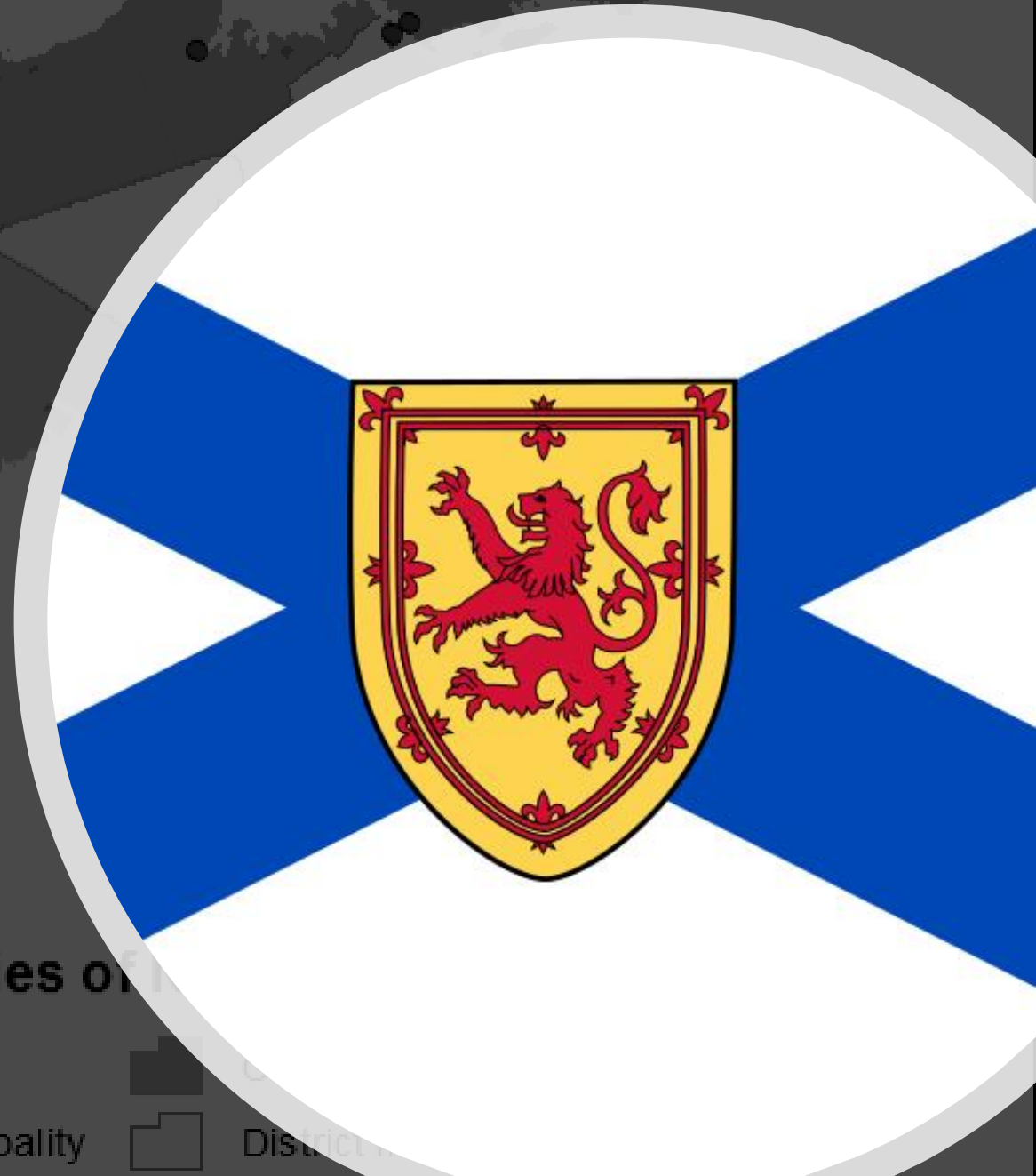
<https://vimeo.com/185553831/7eabcf702>

Macro Trend

- Transition to clean energy systems – Massive investment globally and locally
- Munis taking control of their energy destiny
 - Unsatisfied with energy market/industry response
 - NEW energy efficiency programs, develop/promote renewables, remunicipalization
- Municipalities have competitive advantages
 - Planning authorities
 - Large energy consumers
 - Closest government to citizens
 - Potential enablers of the democratization of energy/prosumers
 - Financing?
- *Sometimes*, industry recognizes this
 - Case study: how Xcel managed their Boulder, CO and Minneapolis, MN interactions

NS Context

- Significant transition to renewables last ~15 years
 - Are we done?
- Munis with few options for new revenue
 - Is there a match?
- Content above: is the why
- Content below: is the how



Municipalities of

Town

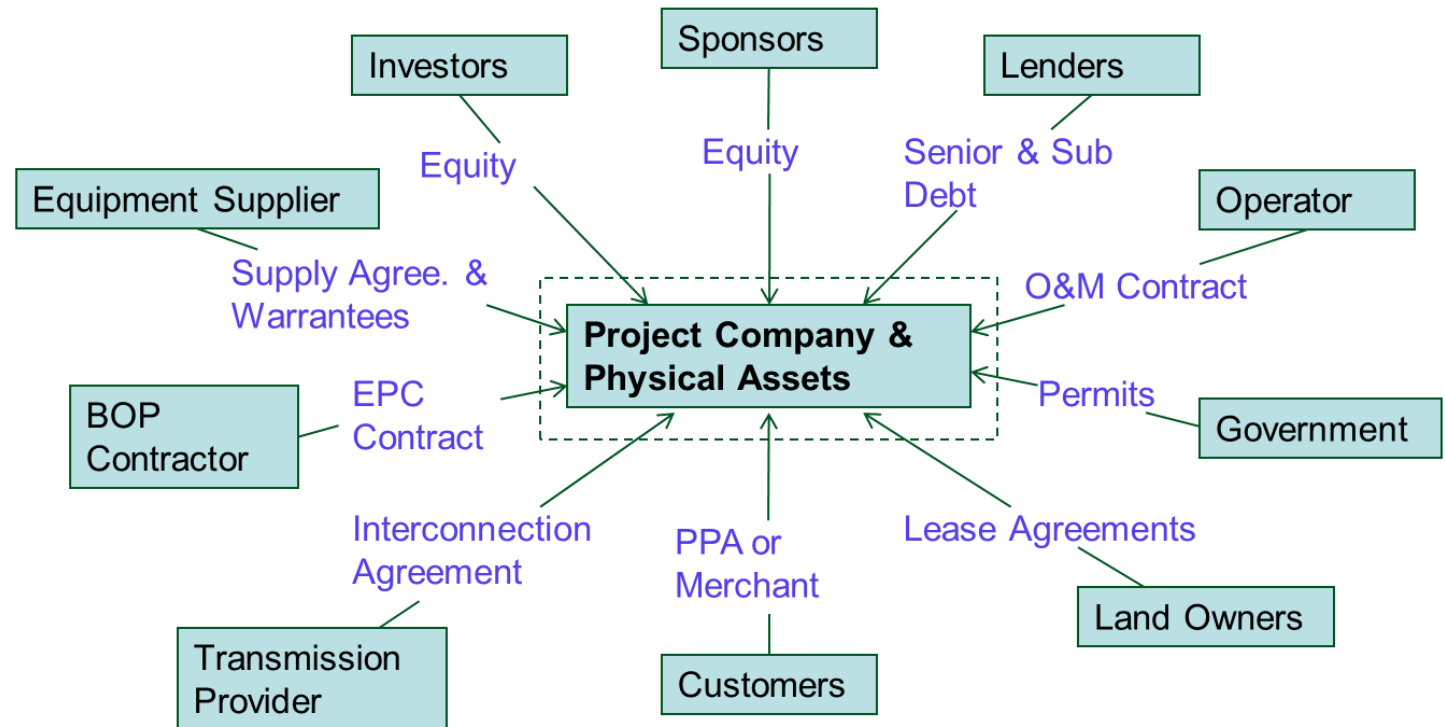
Regional municipality

District

So you have a project?

- Assumption: either making or saving money using cleantech
- Regardless of financing mechanism, “risk circle” has to be solved

Project Finance Defined: Schematic





AREA's Solving the Risk Circle

- Assessed municipal strengths
 - Internal or private expertise to manage risk circle categories?
 - Overall developer: Minas Energy
 - Strategic use of local consultants
- Then comes the question
 - Muni's cost of capital (challenge or competitive advantage?)OR
 - Industry's experience
- WHY NOT BEST OF BOTH?

AREA Experience at Ellershouse

- Evolving Public-Private Partnership
 - Fine tuned PPP structure to extract maximum benefit (cost and risk profiles)
 - Developer takes risk during higher-risk/early stages
 - Structured other commercial deals so that municipal organization was protected
 - Risk transfer is not free; always have to analyse each compromise
- Faith in technology
 - Not just top tier manufacturer, but *top* top tier
 - “PPP” is now entirely municipal ownership and operations, because asset risk profile is compatible



Other Financing/Ownership Models

If cleantech project provides municipal benefit but

- technology is not suitable for municipal ownership
- or municipal financing unavailable

Sometimes the market/industry will take this risk (for a fee!)

- Industry owns asset, muni buys energy at a defined rate, muni takes price risk (power purchase agreement)
- Don't want technology or price risk, then muni pays owner only when savings accrue (energy services contract)
 - ESCo's are notoriously difficult to negotiate and administer (lawyers win)
 - Complex performance clauses (industry wins)
 - As risk passes to industry, so too go the financial benefits
 - Need to hire an independent expert with **significant** experience to negotiate energy services contracts
 - Despite risk transfer, ESCo's consume lots of staff time. No free lunch!

Observation

- Many low-cost/grant funding sources promote innovation
 - Innovation comes with risk that some entity has to bear
 - Are you pursuing grants and taking some/much innovation risk
- OR
- Financing the entire infrastructure project normally, taking less risk

Q: Does a muni end up chasing risk to get free \$?

Key Points

- Renewable energy/green grids create opportunities for NS munis.
 - Is it time for municipal clean energy *business* strategies to compliment other climate strategies?
 - Think of strategic partnerships with industry (utilities, equipment and service suppliers, etc)
 - Munis and industry need each other
 - How to evolve those relationships to extract maximum benefit
 - Don't assume static roles
 - Then think of financing
 - Can you trust the business model + technology for the term of the financing?
- OR
- PPA/ESCO?