

“Consumers Have Always Paid” Carbon Pricing and The Transmission Subsidy

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Outline

- 1. What to do about carbon**
- 2. “Reasons” to build transmission**
- 3. Why consumers shouldn’t pay**
- 4. Subsidizing upstream generation**

What to Do about Carbon

- Three climate-related market failures:
 1. A zero price for carbon
 2. Consumers ignore future energy costs
 3. Insufficient reward for advanced research
- Transmission policy needs to address only #1.
So,
 - Use the “right” carbon price, and
 - plan transmission optimally.
 - That’s all (but that’s hard enough).

How to Minimize *Total* Cost

- When planning transmission, include
 - the cost of *carbon* for coal & gas. *and*
 - the *unsubsidized* cost of wind.
- Plan wires for jointly optimized wires and gens
- Charge generators for the wires they use.
- Then they will lobby for reasonable upgrades.
(This is a check on the planning.)

Mistakes to Avoid

- Don't subsidize transmission to coal plants.
- Don't subsidize transmission to wind turbines.
(Wind is #1 example of desirable congestion.)
- Don't ignore freak wind outages (see TX)
- Don't forget the option value of waiting—especially with increased long-term uncertainty due to changing carbon policy.

What's Happening Instead?

- Except for today's discussion paper, there's little talk of cost minimization, let alone including the cost of carbon.
- So, what's driving transmission policy?

Poor Reasons to Build Wires

1. Because zero congestion is the law in Alberta.
2. To keep the lights on.
 - Generators can do that, and are faster to build.
 - Congestion is not a sign of unreliability.
3. Economic benefits for upstream generators.
 - Not cost minimization.

More Reasons to Build Wires

4. Build to reduce market power.
 - This works. See slide #9.
5. Build to minimize cost.
 - But, see slide #10.
6. Build so a one-price market will almost work, and prices will almost be simpler to calculate.
 - But see slide #11.

Build to Reduce Market Power

- Competition from Edmonton will reduce market power in Calgary.
- But, ... are there cheaper approaches?
 - Yes, change the market rules.
- Need to reduce *AESO market power* and *generator market power* together.
- But good design is difficult.

Build to Minimize Cost

- But that's against the law.

Cost	Far Gen	Near Gen
Fuel:	18 \$/MWh	30 \$/MWh
Generation:	30 \$/MWh	20 \$/MWh
Transmission:	10 \$/MWh	2 \$/MWh
Total:	58 \$/MWh	52 \$/MWh

- A regulated vertically-integrated utility picks Near Gen.
- A competitive generator with transmission paid for by consumers picks Far Gen — the wrong choice.

To Maximize Transmission

- One Price

- ☐ No locational signal from energy market
- ☐ No congestion ☐ too many wires.

- Consumers pay (or postage-stamp rates)

- ☐ No locational signal from wires market.

- Both together

- ☐ No locational signal at all + excess capacity.
- ☐ Subsidies for coal and wind. Wasted money.

The End