



*More suppliers
More innovation
More choice*

20 Years After

**Enhancing the
Alberta Advantage:
A Comprehensive Approach
to the Electric Industry**

October 1994



Independent Power Producers Society of Alberta

Overview

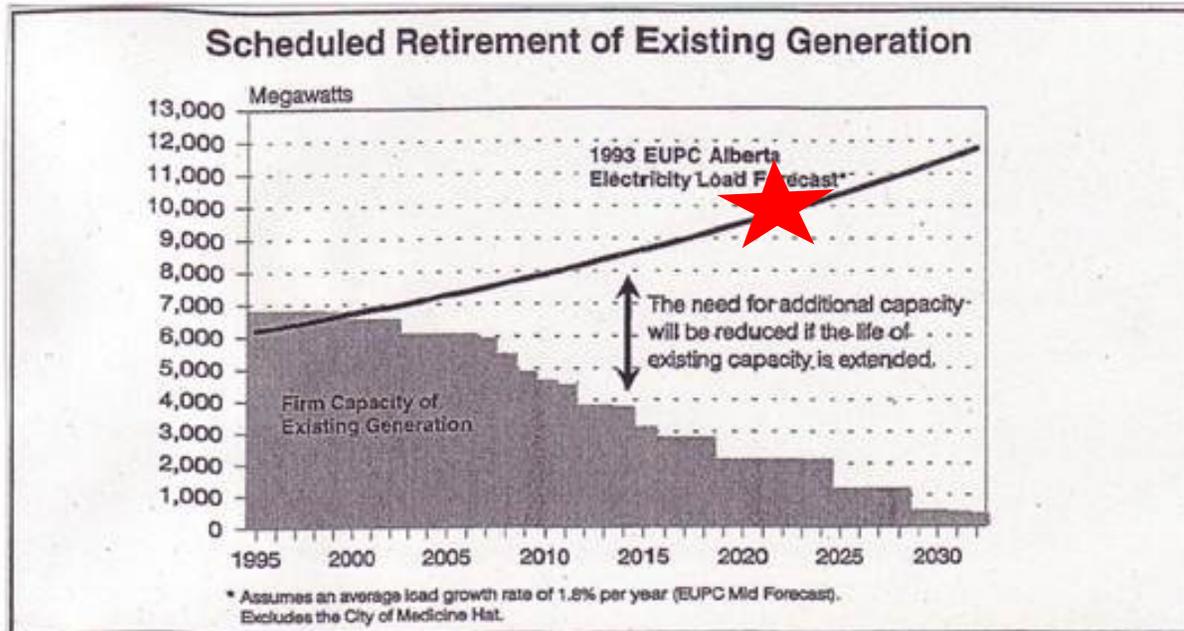
- Twenty years ago *Enhancing the Alberta Advantage* was issued.
- This was the Department of Energy's white paper that kicked off our market's restructuring. The paper states,

The challenge now facing Alberta is to preserve the very real strengths of our existing electric industry, while drawing on forces of competition to build an improved system for the future. On the one hand, Alberta currently benefits from a reliable system and electric rates that are among the lowest in North America. On the other hand, changes in industry structure and regulation are needed to take advantage of competition for the benefit of all consumers.
- The following takes a number of forecasts and data points of Alberta's power industry from 1994 and compares them to how our market's history has actually evolved. ..



1) The Supply and Demand Forecast

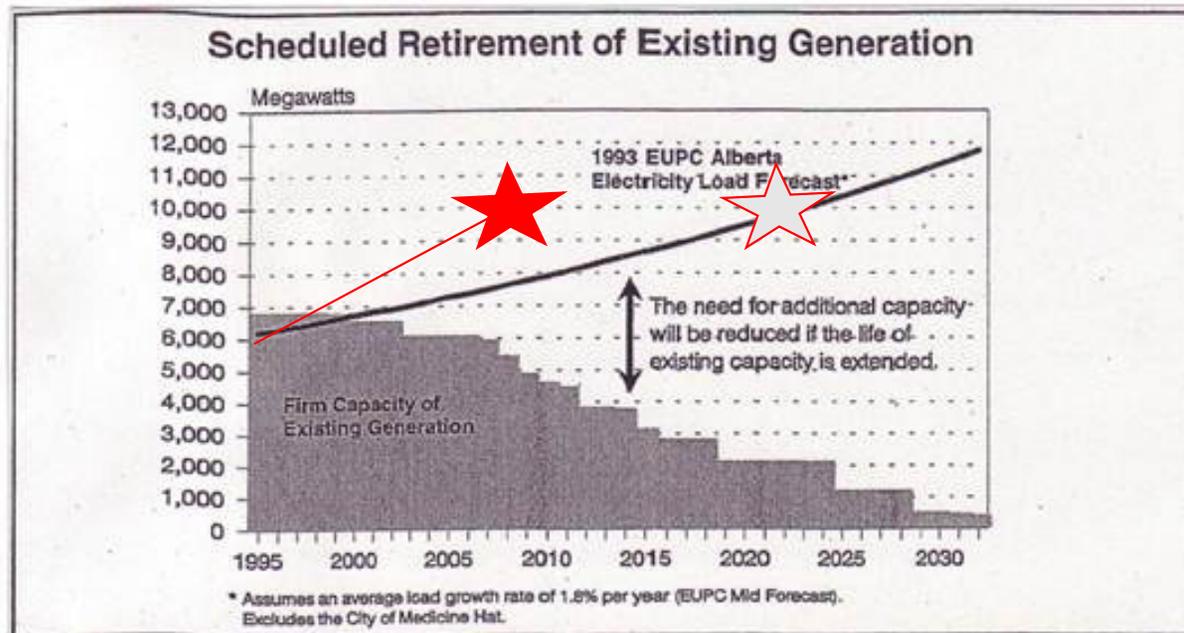
- Page 13 of the 1994 white paper provided this snapshot of Alberta's supply/demand forecast:



- In 1994, Alberta had 7000 MW of supply and was expected to hit 10,000 MW of demand in 2022

1) The Supply and Demand Forecast

- In reality, demand hit 9900 MW in winter of 2009, or 13 years ahead of the forecast.



- Today, Alberta has 15,877 MW of supply, or more than twice what we had in 1995.
- We've added 9000 MW – or 2.5 'SaskPowers' – in 20 years.
- Demand growth has averaged almost twice the 1.8% estimated in 1994.

2) Competition has Shifted Investment Risk to Developers

- In Alberta's open market, developers take investment risk. This drives efficiency. This efficiency is reflected in lower offers in the energy market and a downward pressure on prices. It also leads to the retirement of inefficient supply.
- As a result of this shift of investment risk, Alberta has been a rapid adopter of efficient generation as evidenced by our cogen volumes, large-scale wind turbines, and supercritical coal plants.
- Furthermore, developers no longer have recourse to consumers to backstop their investments, which is function of regulated regimes...

Ontario electricity consumers on the hook for power plant construction

The Globe and Mail, Monday 24th September, 2012

BC Hydro ratepayers on hook for \$750 million Powerex settlement

- Commonsense Canadian, 17 August 2013



3) Introducing Competition and New Generation Entrants

Comparing the generation market of 1994 to 2014 demonstrates the significant decontrol of generation that has occurred and the introduction of new entrants.

1993 Capacity

	Coal	Gas	Hydro	Total
Utility Generation (Megawatts)				
Alberta Power	1250	125	1	1376
Edmonton Power	770	870	--	1640
Medicine Hat	--	182	--	182
TransAlta Utilities	<u>3685</u>	<u>--</u>	<u>795</u>	<u>4480</u>
	5705	1177	796	7678
Non-Utility Generation				
Industrial	--	--	--	753
Small Power	--	--	--	<u>35</u>
				788
Interconnections				
British Columbia	--	--	--	400
Saskatchewan	--	--	--	<u>125</u>
				525

— Major Transmission Lines

Table 1: 2014 Market Share Offer Control

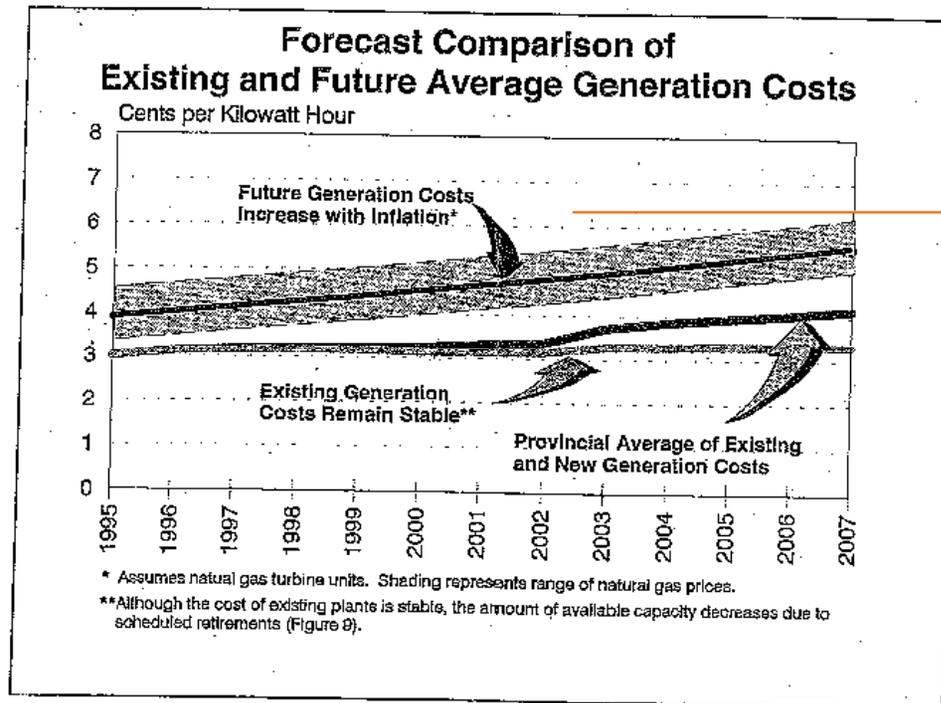
2014-02-23 HE 17		
Company	Control (MW)	%
TransCanada	2,545.0	17.9%
TransAlta	1,806.5	12.7%
ATCO	1,675.0	11.8%
ENMAX	1,598.0	11.2%
Capital Power	1,462.5	10.3%
Balancing Pool	762.0	5.4%
Other	2,989.0	21.0%
Controlled Total	12,838.0	90.2%
Non dispatchable	1,398.1	9.8%
Grand Total	14,236	100.0%

Source: MSA



4) Wholesale Price Outcomes

- The 1994 White Paper included a forecast of generation cost.
- Since the market opened in 2001, wholesale prices have averaged \$66/MWh.
- This is not far off the forecast, which is remarkable considering that demand growth doubled from the 1994 projections. And gas prices, a key power price driver, have undergone dramatic increases since the \$1.92/GJ of 1994. (Fekete Associates)

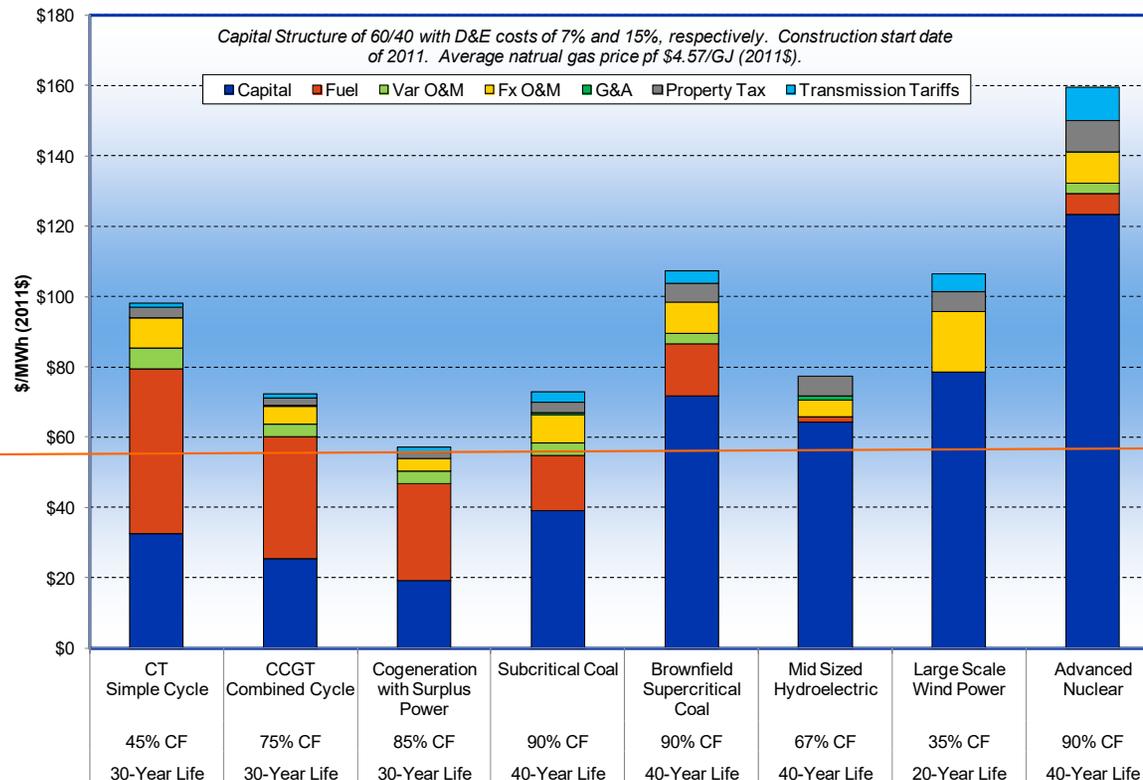


\$66/MWh average Alberta wholesale Market price (2001-2013)

4) Wholesale Price Outcomes

- Today, Alberta's market is extremely competitive
- 2014 pricing is below the levelized cost of all new power supply, except cogen.

Comparative Levelized Costs (2013–2027, using EDCA Q1, 2013 Report Assumptions)



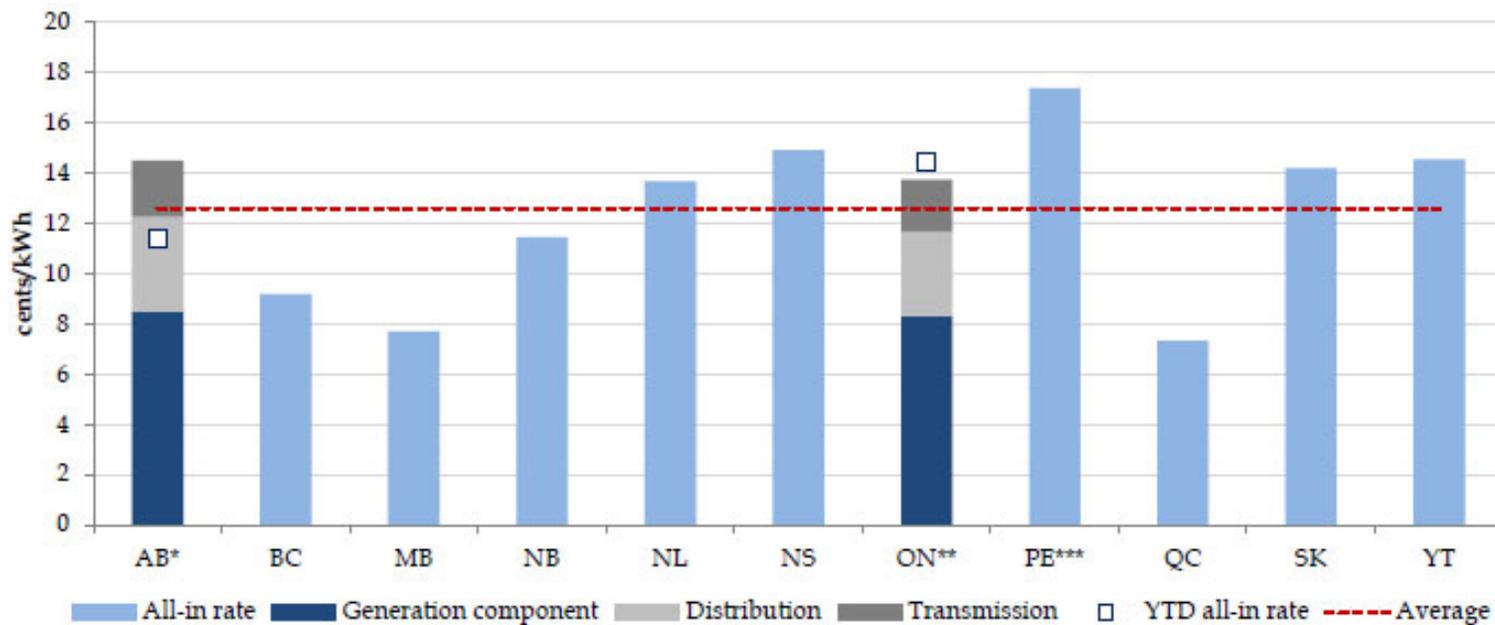
◀ \$55/MWh YTD prices

Source: EDC Associates

5) Alberta's Residential Compared to Other Provinces

- Page 5 of the White Paper shows that Alberta's and Canada's residential rates were ~ ¢10/Kwh.
- Twenty years later, Alberta remains in close proximity to the national average, even as supply has more than doubled, and gas prices have risen dramatically.

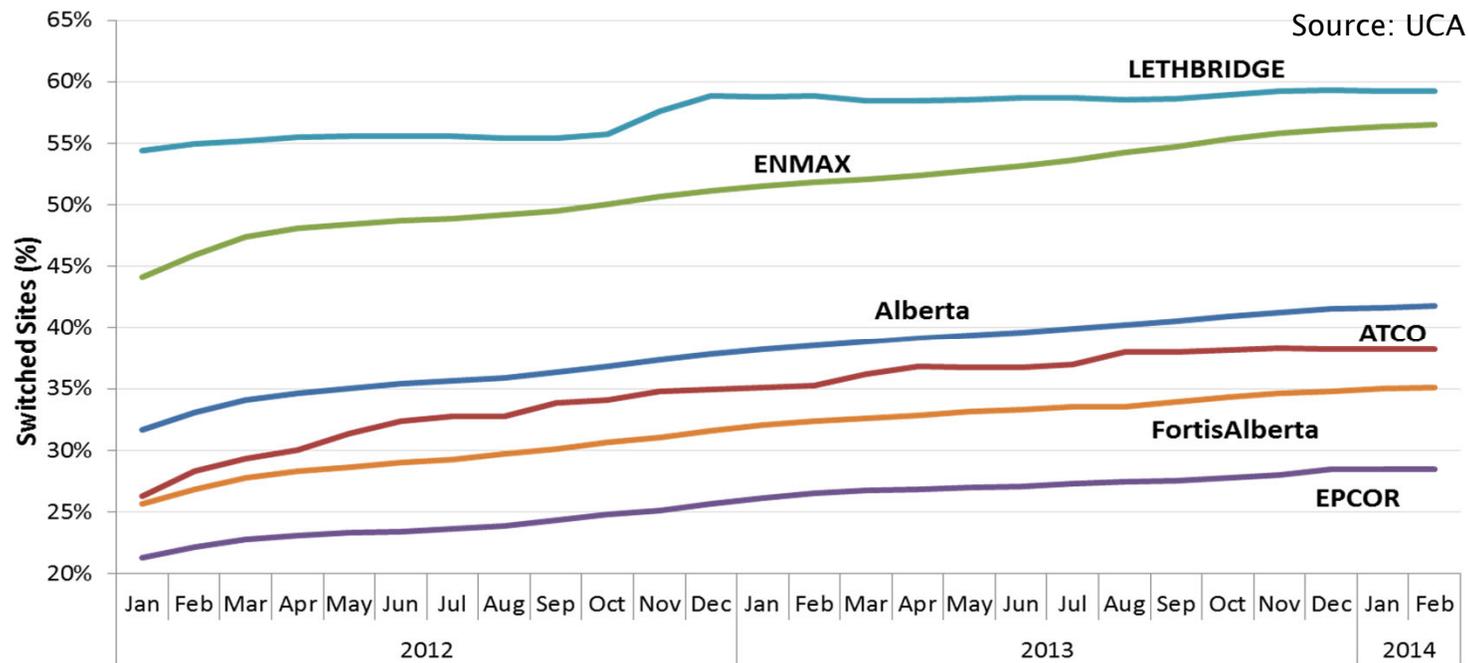
2013 Residential Electricity Rates by Province



Source: London Economics Int, 2014

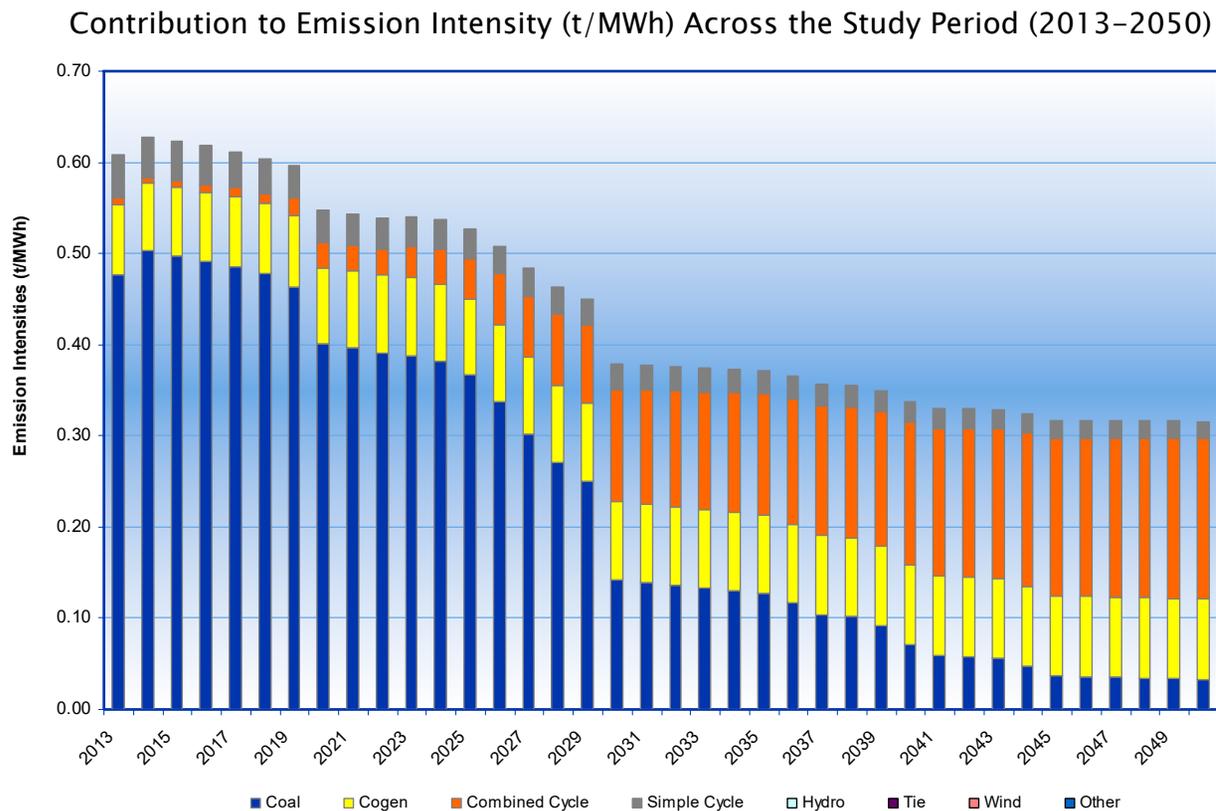
6) Providing Choice to Consumers in Managing Price

- Page 3 of the White Paper promoted customer choice as a policy goal.
- Today, Alberta consumers can choose fixed-priced contracts, flow-through contracts, dual fuel contracts (gas & power), green power or on-site generation. (Recently, ENMAX added its 100th residential solar system)
- The following shows the percentage of Albertans who have exercised choice:



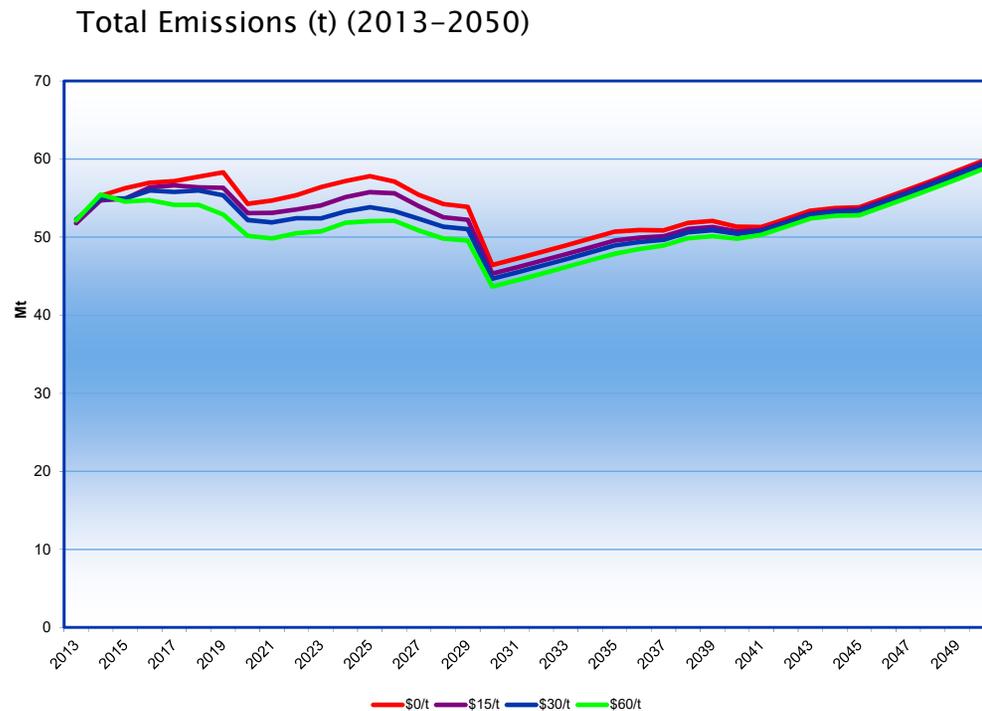
7) Greening Alberta's Grid

- An outcome not forecast in 1994 was the market's continued emissions improvements.
- From *Trends in GHG Emissions in the Alberta Electricity Market, 2013*, EDC Associates forecasts that Alberta's electricity emissions intensity to halve by 2050, due to the market's migration to baseload natural gas supply .



7) Greening Alberta's Grid

- Tonnage of CO₂ emitted is set to fall from 2013 to 2030.
- Tonnage is forecast to rise from 2030 to 2050 by 7%, even as fleet increases by 100%. Should gas turbine technology continue to improve, or Alberta's demand slow, tonnage of power sector emissions could even fall by 2050 from 2013 levels.



• Source: EDC Associates Ltd.



Conclusion

- Who could have imagined how Alberta's power market would evolve in the 20 years since *Enhancing the Alberta Advantage* was first issued?
- Yes, the authors missed ENRON, and gas prices rising from \$2 to \$12 and plummeting back to \$2 and everything in between, and Alberta's protracted, unparalleled economic boom, and landowner transmission backlash, and Bill 50, and climate change policy... But some of the document's original goals of introducing competition and choice have been achieved.
- Evaluating the merits of the market's 20-year evolution from the white paper should be based on the facts of what the market has produced. IPPSA hopes the preceding has provided some context for that review.

