

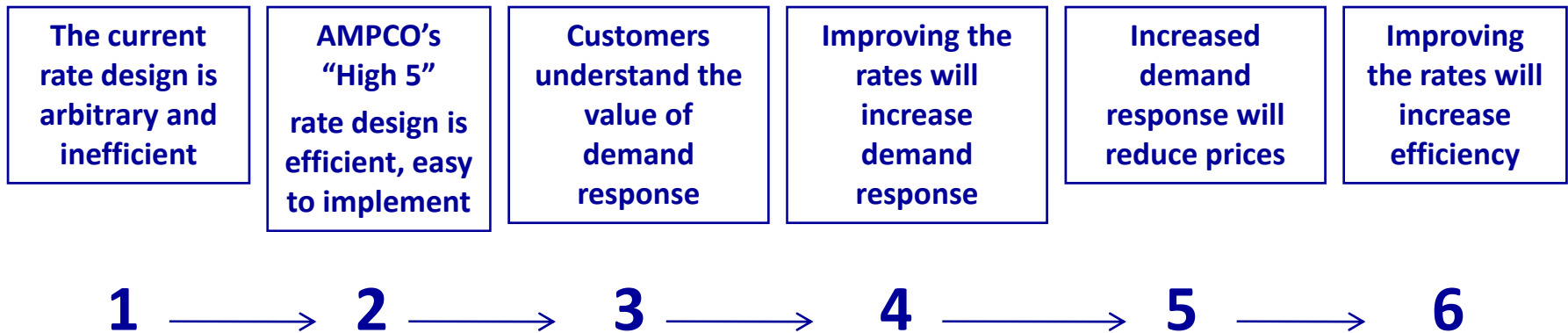


EB-2008-0272
H1 Transmission Rates
Notes for AMPCO
DRAFT February 27 2009

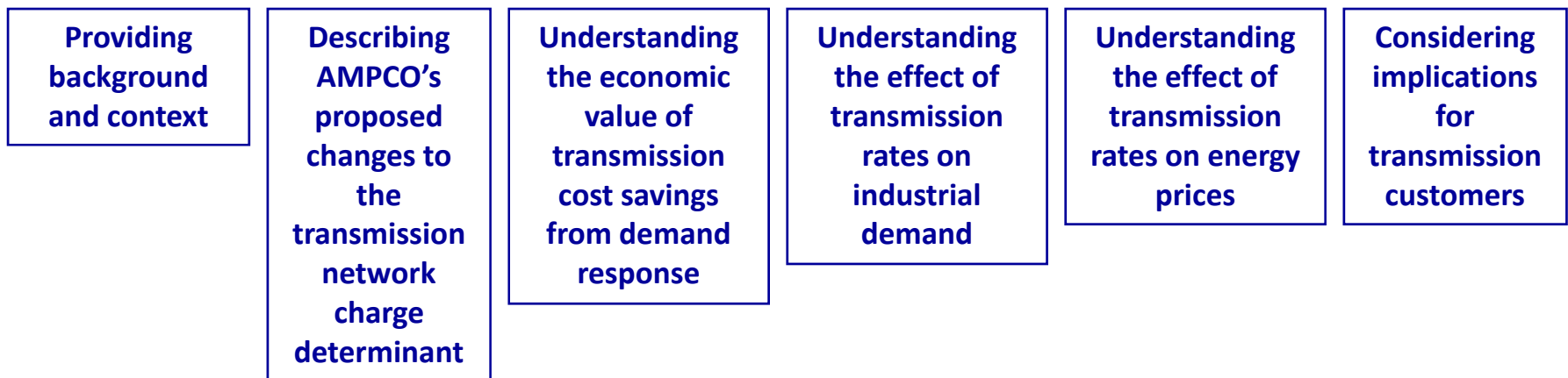
AMPCO's submission



AMPCO's submission



AMPCO's evidence



AMPCO's proposed rate design



- Based on transmission network cost causality
 - The primary cost driver for the network is peak demand
 - This is why customers pay for the network and most transmitters recover network costs based on peak demand
- High 5 rate proposal
 - Customer's charge is based on demand on the 5 days of highest demand in the previous year, regardless of when the five days occur
 - Customer pays the same amount each month.
 - Customers have cost certainty
 - Transmitters have revenue certainty
 - Customer has a strong incentive to reduce demand when it is most valuable to do so

The value of transmission cost savings



- Large customer's perspective
 - Operations in PJM and ERCOT
 - Experience with demand response
- AMPCO proposed change resolves concerns
 - Removes ratchet
 - Provides incentives to avoid peaks when they occur
 - Supports demand response and efficient transmission
- Effective demand response requires
 - Planning: long, medium and short-term
 - Predictive tools and techniques
 - Training and changes to operating procedures

The effect of price on demand



- I have conducted empirical analysis:
 1. Estimating the effects of changes in the Hourly Ontario Electricity Price on demand by industry
 2. Evaluating the impacts of shifts in market demand on the HOEP.
- The objective is to evaluate the welfare implications of a mechanism that would give firms an incentive to reduce demand during peak hours.
- I use publicly available data from the IESO
 - Prices are in terms of dollars per MW hour.
 - Demand is in terms of MW.
 - Data from May to August 2007
- To estimate the effects of the HOEP on demand, I focus on within day differences between peak (7 am – 6:59 pm) and off-peak (7 pm – 12 am) hours.
- I use the following simple empirical specification;
 - Hourly Demand_t averaged over a 12 hour period = $b_0 + b_1$ Hourly Ontario Electricity Price_t (HOEP) averaged over a 12 hour period + b_2 Hourly Ontario Electricity Price_t (HOEP) averaged over the previous 12 hours + Month Dummy Variables + e_t

The effect of demand on price



- I also use a standard approach to evaluate the effects of total market demand on the HOEP;
 - Hourly Ontario Electricity Price t (HOEP) = $b_0 + b_1$ Hourly Ontario Demand + b_2 imports + b_3 Coal Supply + b_4 Gas Supply + b_5 Hydro Supply + b_6 Nuclear Supply + b_7 Gas Prices + b_8 Market Concentration + Hourly Dummies + Month Dummy Variables + e_t
- With respect to the effects of prices on demand I find that
 - (1) Current demand is negatively correlated with current prices
 - (2) Current demand is positively correlated with lagged prices
- With respect to the effects of prices on demand I find that
 - (1) Controlling for all else, a 1000 MW *decline* in market demand is significantly correlated with a \$16 per MW *drop* in HOEP during peak periods.
 - (2) Controlling for all else, a 1000 MW *increase* in market demand is significantly correlated with a \$4.7 per MW *increase* in HOEP during peak periods.

Implications for transmission customers



Average industrial demand response during summer months	-29	MW
Annual transmission savings per MW	\$30,840	\$/MW
Total annual industrial transmission savings	-\$899,206	\$/year
Total annual demand by other customers	132,334,189	MWh
Total summer demand by other customers	44,139,502	MWh
Transmission cost increase to other customers (applies to all MW in the year)	\$0.0068	\$/MWh
	\$899,206	\$/year
Net wholesale price change for all customers (applies only to MW during summer months)	-\$0.1544	\$/MWh
	-\$6,813,147	\$/year
Net effect on other customers	-\$5,913,941	\$/year

This table can be found at Exhibit I, Tab 17, Schedule 14, Page 9 of 9