



Q1/2015 Quarterly Report

January - March 2015

May 29, 2015

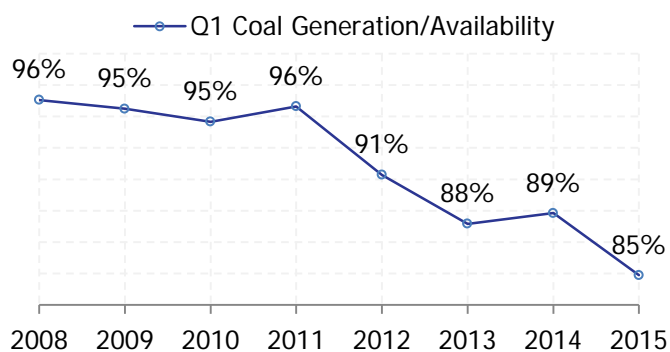
Wholesale market

Summary

Q1 2015 set another record low average pool price since 2000, making this quarter and Q4 of last year the lowest priced quarters in the electricity market's history to date.

Pool prices averaged \$29.03/MWh (\$19.44/MWh Ext. Off Peak, \$33.81/MWh Ext. On Peak) in Q1 of this year, over 50% lower than 2014.

Over a thousand megawatts of new gas-fired power plants and 346 megawatts of increased wind capacity placed significant downward pressure on electricity prices in Q1 2015 relative to the previous year. The new capacity and low gas price environment also contributed to decreased generation at coal plants year over year. Coal production, relative to availability, reached a new low in recent history.



Contributing to the low price environment was the stalled growth in electricity demand between Q1 2015 versus 2014, with demand lower this year in both February and March.

In Q1 there were four brief periods where prices were significantly higher than the average. Economic withholding was a contributing factor in each case. The MSA has been on record for some time that unilateral withholding is an expected offer strategy in Alberta's market. In this

		2014	2015	Change
Avg. Pool Price (\$/MWh)	Jan	45.23	33.95	-24.9%
	Feb	96.33	32.83	-65.9%
	Mar	43.68	20.65	-52.7%
	Q1	60.60	29.03	-52.1%
Avg. Supply Cushion (MW)	Jan	1892	2138	+13.0%
	Feb	1464	1986	+35.7%
	Mar	1803	2240	+24.2%
	Q1	1728	2126	+23.0%
Avg. Demand (AIL, MW)	Jan	9580	9820	+2.5%
	Feb	9788	9764	-0.2%
	Mar	9456	9349	-1.1%
	Q1	9602	9640	+0.4%
Avg. Wind (MW)	Jan	523	679	+29.9%
	Feb	330	448	+36.0%
	Mar	302	648	+114.6%
	Q1	387	597	+54.3%
Avg. Outage ¹ (MC - AC)	Jan	2088	2402	+15.0%
	Feb	2424	2426	+0.1%
	Mar	2380	2919	+22.7%
	Q1	2293	2587	+12.8%
Avg. BC/MATL Combined ATC	Jan	639	756	+18.3%
	Feb	613	685	+11.7%
	Mar	647	432	-33.2%
	Q1	634	622	-1.8%
Avg. Gas Price (\$/GJ)	Jan	4.06	2.64	-34.9%
	Feb	6.98	2.64	-62.2%
	Mar	5.03	2.60	-48.4%
	Q1	5.30	2.62	-50.5%

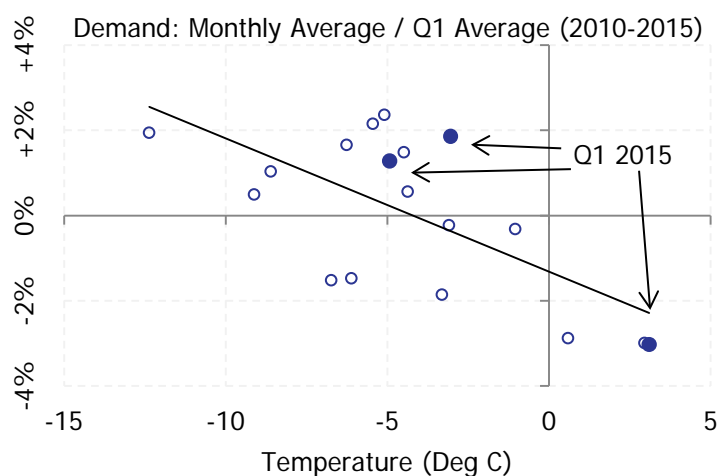
¹ Outage values omit EGC1 Shepard in order to normalize with the previous year.

case, the four higher price events added approximately four dollars to the overall average price in the quarter. (Without these hours the average pool price would have been \$25.09/MWh compared to \$29.03/MWh.) That said, the MSA is reviewing these isolated incidents to understand the role of the AESO's Historical Trading Report (HTR) in facilitating these price movements.²

Demand flat year over year in Q1

While average electricity demand in the first quarter was slightly higher than in 2014, growth was significantly lower than in recent years. Although lower economic growth may offer a partial explanation, there are other factors that influence demand, including temperatures. On average, winter 2015 was warmer than the previous year, which we would expect to result in lower electricity demand. The chart below shows average demand in each month of Q1 relative to average Q1 demand for each month in the first quarter of each year over the period 2010 - 2015, with respect to average Q1 temperature. As we expect, demand in warmer months is lower while demand in colder months is higher, due to heating-related electricity demand.

If we look at demand in each of January, February and March individually, we see that for February and March demand decreased compared to 2014, while demand in January continued its upward trajectory. The average temperature in January in Calgary was -3°C in both 2014 and 2015, which contrasts with temperatures in February and March 2015 that were 7.4°C and 9.8°C warmer than in 2014.

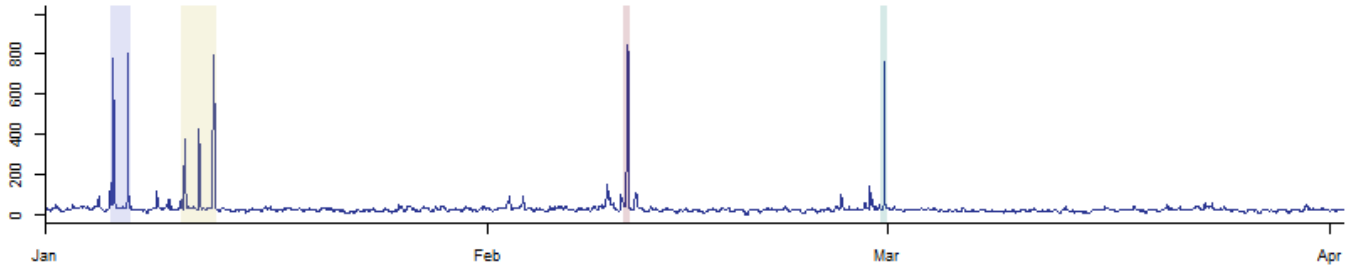


Zero dollar hours

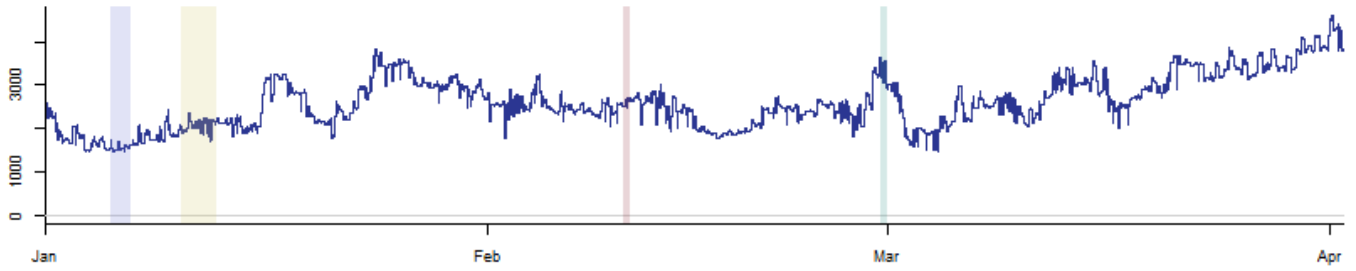
On February 19, 2015, two hours, HE 04 and HE 05, settled at \$0/MWh. Supply cushion in these hours was in excess of 4300 MW, with over 1000 MW of wind generation. The AESO's supply surplus procedures resulted in curtailment of up to 280 MW on the interties, but no further actions were taken.

² On March 20, 2015, the Independent Power Producers Society of Alberta (IPPSA) served the AESO with an application for judicial review of its decision to change the HTR. The AESO subsequently announced that it would defer implementation of the changes while the matter is before the courts.

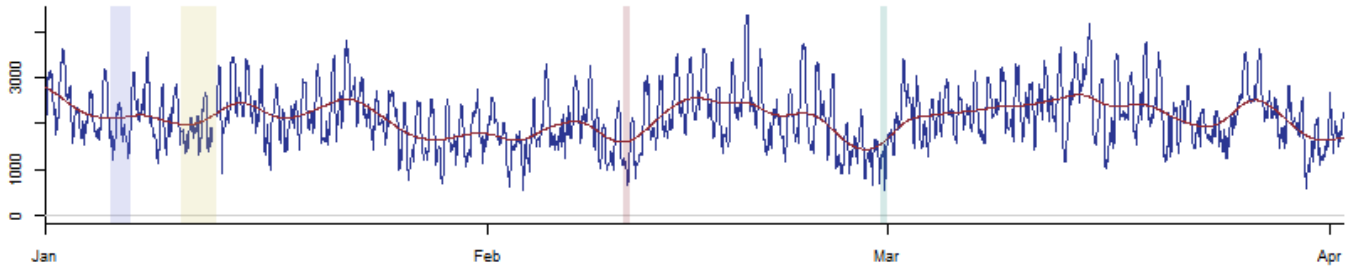
Pool Price (\$/MWh)



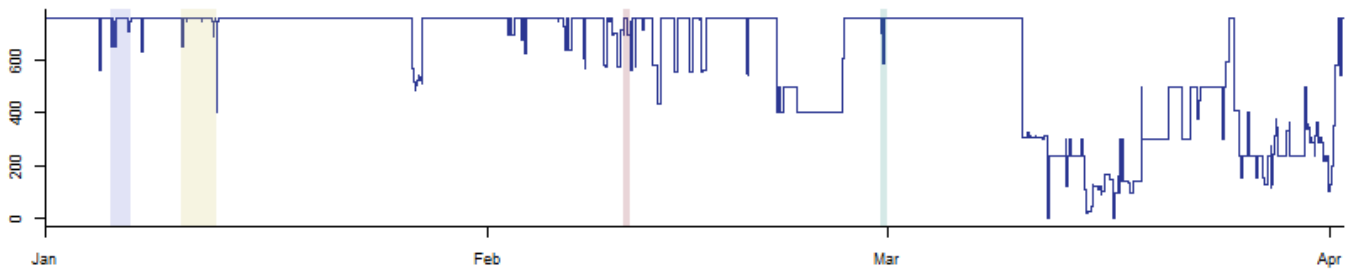
Total Outages (MW, MC-AC)



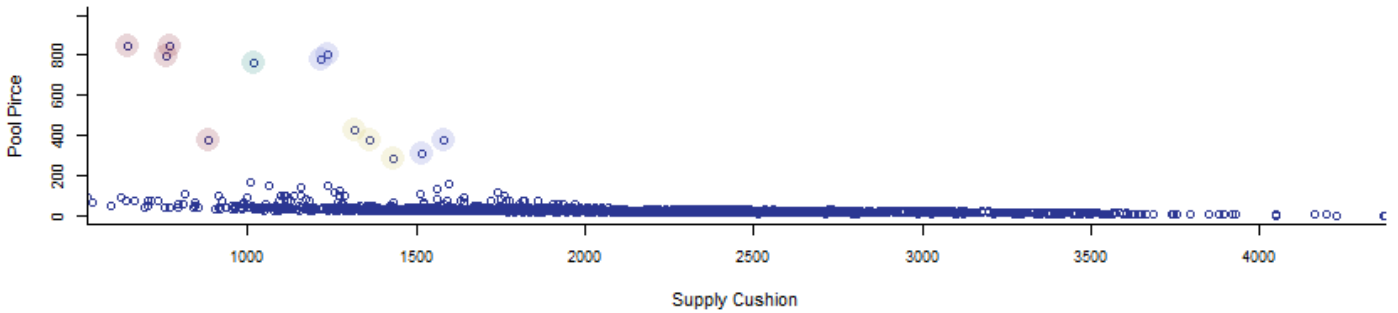
Supply Cushion (MW)



BC & MATL Combined ATC (MW)



Supply Cushion vs. Pool Price



Capacity, Availability, Generation and Price

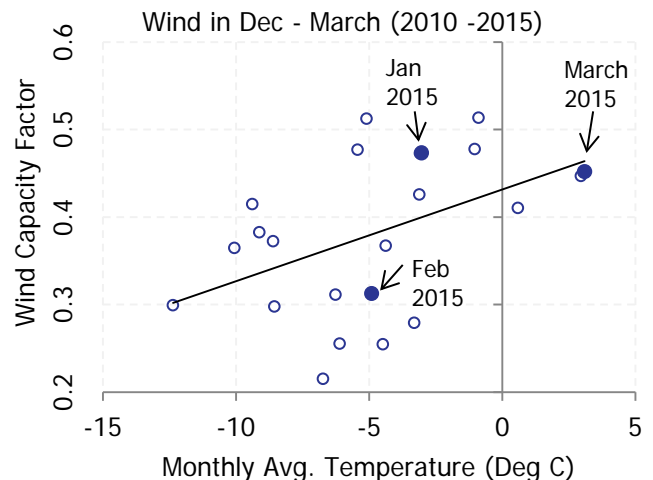
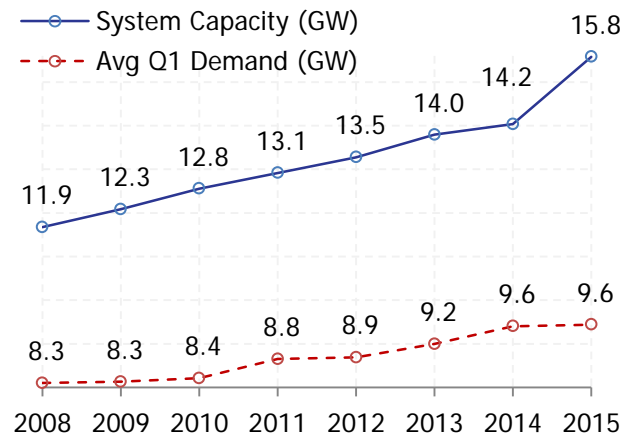
While demand has been flat, there has been a significant increase in supply placing downward pressure on prices. Compared to Q1 of the previous year, Alberta has added over 1100 MW of new gas-fired capacity, in addition to 346 MW of wind. Most notably, the Shepard Energy Centre, an 873 MW combined cycle facility, and Blackspring Ridge, a 300 MW wind farm, entered the market in Q1.

New Gas Units	Capability
EGC1 Shepard	873
GEN5 Carson Creek	15
GEN6 Judy Creek	15
IOR2 Nabiye	170
NPC2 JL Landry	9
WCD1 West Cadotte	20
Total	1102

New Wind Farms	Capability
BSR1 Blackspring Ridge	300
OWF1 Oldman 2 Wind Farm 1	46

In addition to the new wind capacity, the wind capacity factor (wind generation as a proportion of wind capacity) averaged 41.3%. This is higher than the overall average since 2010, and reflects the warmer than average temperatures and possibly the geographic diversity since the addition of Blackspring Ridge.

The chart below plots average temperatures versus average wind capacity factors in the months December through January, 2010 – 2015. Given the warmer temperatures, the higher wind capacity factors are not unexpected.



Availability & Generation

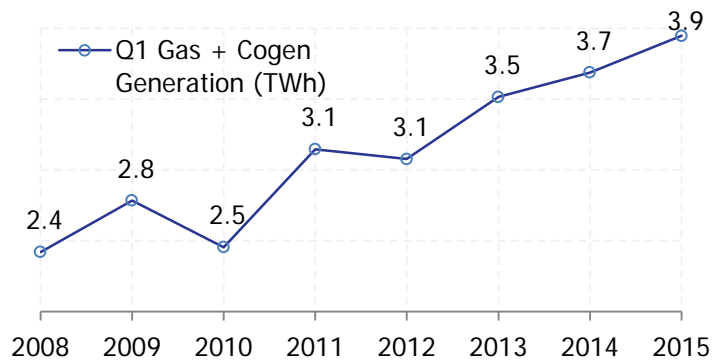
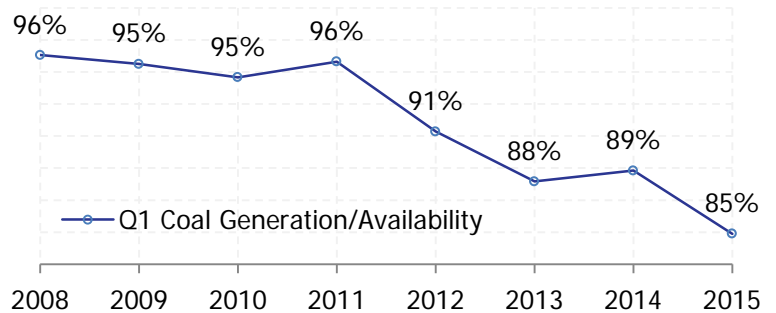
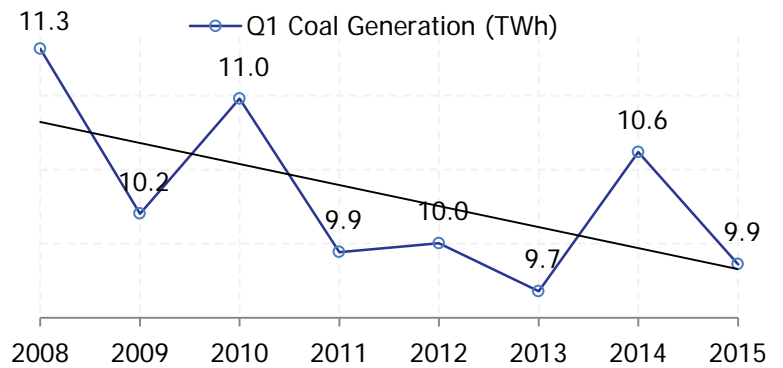
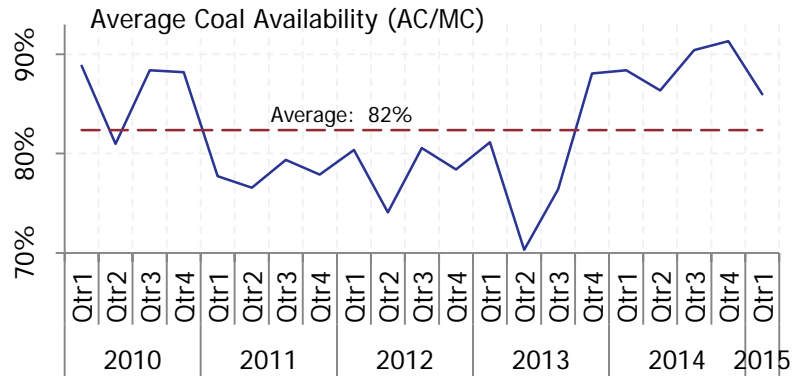
Despite very comparable availability to Q1 of 2014, coal generation fell 7.1% to 9.9 TWh in Q1 of 2015. Relative to availability, generation at Alberta's coal plants has declined consistently since 2011.

Q1 2015's higher than average coal availability relative to the past five years (86% vs 82%) reflects the extended force-majeure outage at units Sundance 1 and 2 during 2011-13.

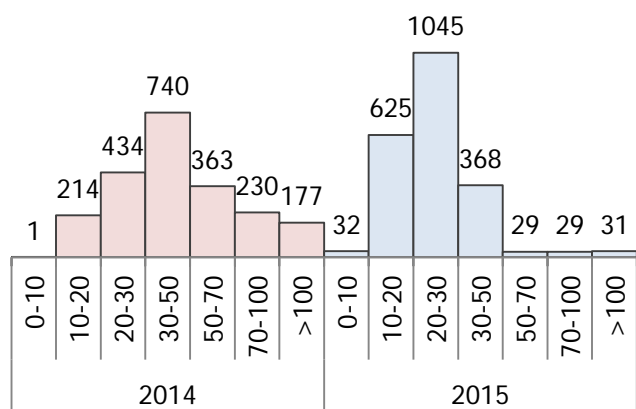
This year's low capacity factor is seemingly the result of lower prices, not economic withholding activities.

With the substantial addition of wind and gas capacity providing increased competition, coal will increasingly have megawatts falling out of dispatch. In Q1 2015, prices below \$30 were considerably more common than in the previous year. In fact, pool price was less than \$20/MWh in 30% of hours during Q1/15.

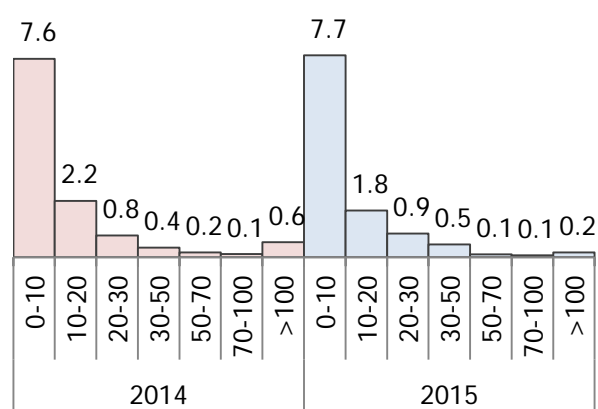
As the histograms below illustrate, the MSA has not observed coal offer strategies changing in any dramatic way, and overall there was a reduction in coal priced above \$100/MWh compared to Q1/14. In contrast, low pool prices were considerably more common.



Pool Prices in Q1 (2014 vs 2015)



Q1 Coal Offers by Price (TWh)



Possible contravention of Section 3 of the Fair, Efficient and Open Competition Regulation

In mid-December 2014 the MSA received a self-report regarding a possible contravention of Section 3 of the Fair, Efficient and Open Competition Regulation that occurred when a market participant inadvertently shared offer information with a joint venture partner.

The MSA assessed the self-report and concluded that: (i) the conduct did not cause harm to competition or other market participants; (ii) neither market participant benefited from the conduct; and (iii) the method for sharing information between the parties has been modified to prevent any future inadvertent sharing of preferential information. As a result, the MSA declined to investigate the matter and has relayed this decision to the reporting market participant. The timely self-reporting and demonstration of an effective compliance function were factors in the MSA’s decision not to investigate.

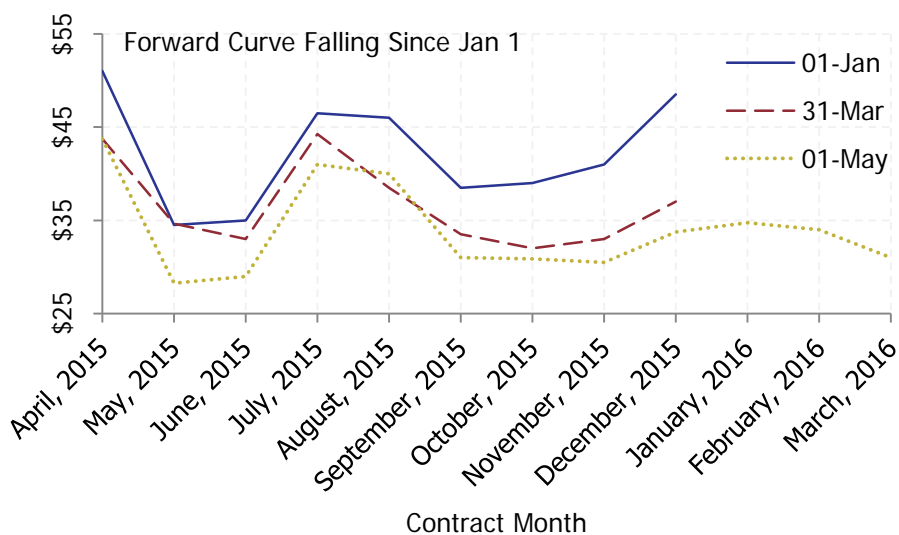
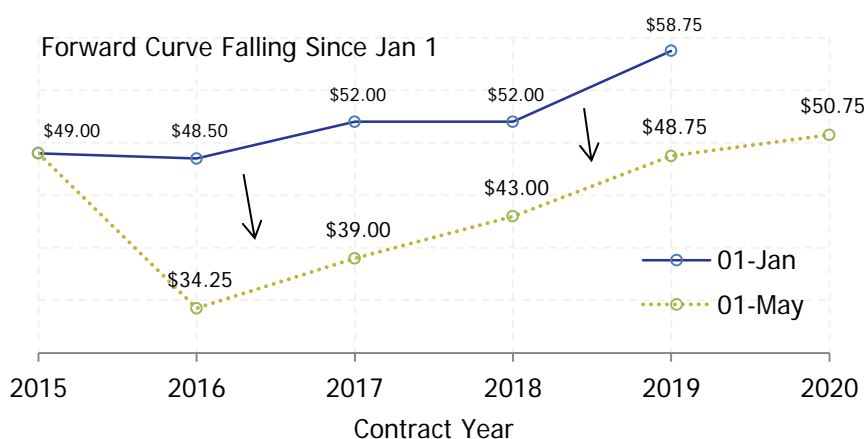
The MSA would also like to remind all market participants, particularly those with joint ventures or Power Purchase Arrangements, that sharing of certain information may be prohibited under regulation or might otherwise be inconsistent with supporting a fair, efficient and openly competitive market.

Forward market

Forward market trading volume declined 2.4% year-over-year for Q1 2015. This volume represents about 58% of the physical volume of the spot market.

	Total TWh Traded		
	2014	2015	Change
Jan	4.3	2.9	-32.9%
Feb	4.5	3.4	-24.9%
March	3.5	5.8	64.3%
Q1	12.4	12.1	-2.4%

The most notable event in Q1 was the drop in forward prices on both a monthly and annual basis. As of May 1, 2015, annual contracts could be procured for less than \$51/MWh until 2020. Almost all annual forward contracts saw a drop of over \$10/MWh between January and May 2015.

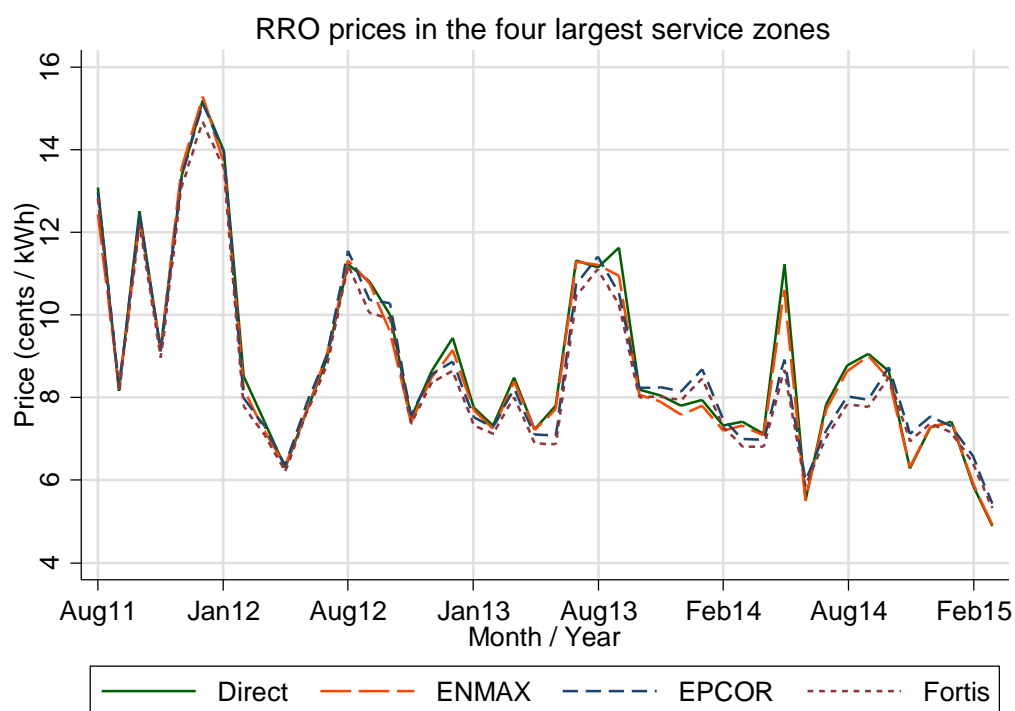


Retail

Persistent low prices in the wholesale spot market are leading to falling retail prices across different classes of retail offerings, both for default supply (RRO) and competitive contract offerings. We examine each in turn.

Default retail rates fall to multi-year lows

Consumers of less than 250 MWh of electricity per year are eligible to select the Regulated Rate Option (RRO) offered by or on behalf of their distribution company. These prices result from the Energy Price Setting Plans (EPSP) each provider uses. The figure below shows the RRO rates since August 2011 for residential consumers in the four largest zones in Alberta.



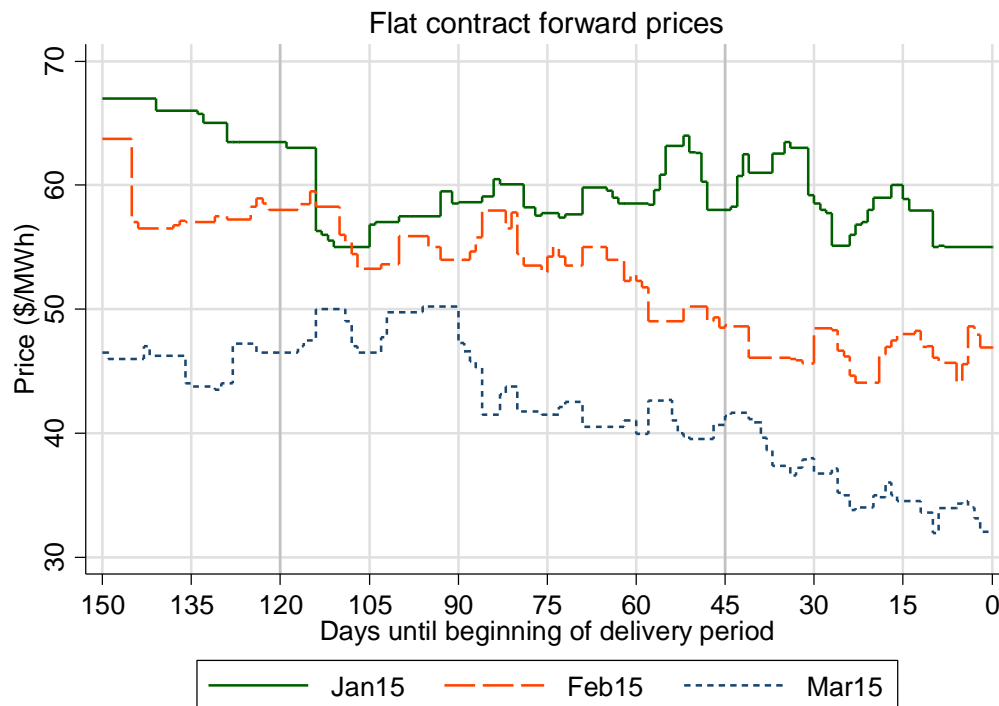
While the basic movement of RRO prices through time is similar across the four providers, it is apparent that, at least since mid-2013, the RRO price movements of (i) Direct and ENMAX and (ii) EPCOR and Fortis³ are more highly related to each other than the other two providers. While there are differences across the RRO providers—such as the shape of load for which they are pricing electricity and certain details of the EPSPs which in turn impacts prices—the likely explanation for this is that in earlier periods all providers priced energy based on prevailing forward prices in the last 45 days leading into each month. Following a change in the *Regulated Rate Option Regulation*, EPCOR and Fortis began to price energy within the last 120 days leading

³ EPCOR provides the RRO in Fortis' service zone and acquires the necessary energy in conjunction with its own RRO product in Edmonton.

into each month, whereas Direct and ENMAX continued to price energy within the last 45 days leading into each month.

If forward prices for a particular month do not trend systematically and substantially upward or downward (are relatively stable in loose terms) in the days leading into the month (at least the last 120 days) then the length of the procurement window will not cause variation of the RRO price across providers. If forward prices for a particular month decline in the days leading into the month, then differences in the length of the procurement window may cause variation of the RRO price across the two groups, with the RRO price being higher for providers that procure over a longer time span since they will have bought early at relatively high forward prices. On the other hand, if forward prices for a particular month rise in the days leading into the month, then differences in the length of the procurement window may also cause variation of the RRO price across the two groups, with the RRO price being lower for providers that procure over a longer time span since they will have bought early at relatively low prices.

Forward prices for the 150-day period leading into each of the three months of the quarter are illustrated in the figure below. These are prices for the flat (all hours) contract only.



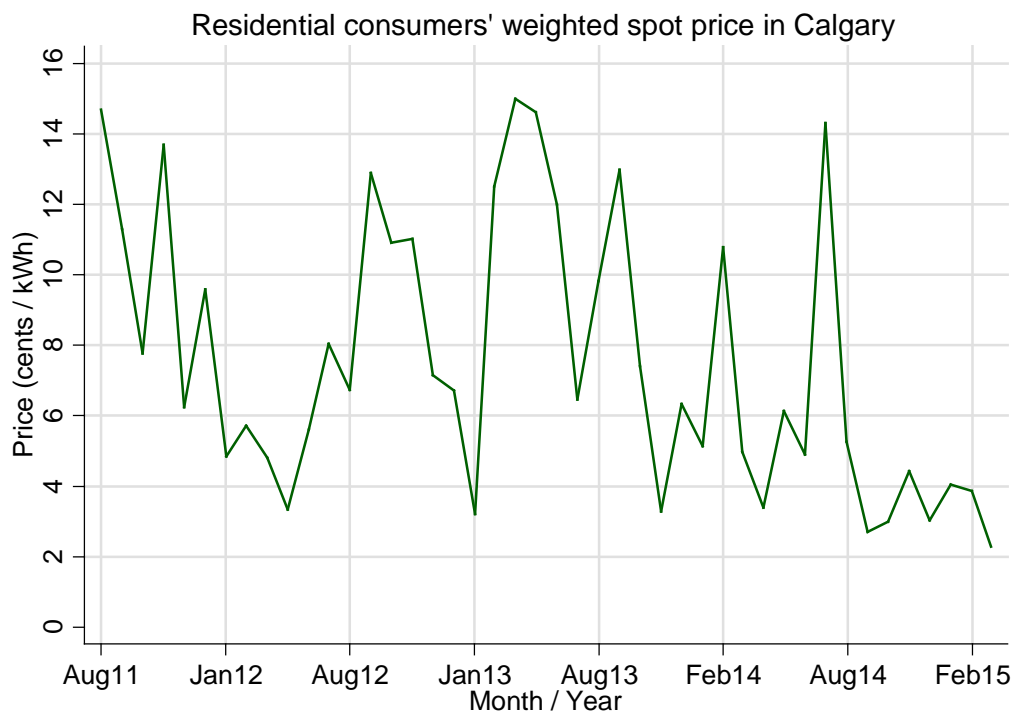
Forward prices for January exhibit the first pattern described above: they do not systematically and substantially trend upward or downward in the 120 days leading into the month. As such, the various RRO prices should be similar; this is illustrated in the figure above. On the other hand, forward prices for February and March exhibit the second pattern described above: they trend downward in the days leading into the month. As such, the RRO prices should be

relatively low for the providers that procure only in the 45 days leading into the month; this is also illustrated in the figure above. In previous quarters the reverse has sometimes been observed.

Notwithstanding the differing procurement window lengths, the difference in RRO prices is relatively small. Moreover, in numerous months before this quarter RRO prices were relatively high for providers that procured in the 45 days leading into the month. Though not illustrated in this report, the reason for this was that prices trended upward in the days leading into those months (the third pattern described above).

Competitive flow-through prices have fallen Consumers can choose a competitive retailer that charges spot market flow-through prices plus a mark-up, e.g., 1¢ / kWh, and other charges. It is important to note that this price being relatively low in recent months should not in and of itself be taken as an indication that this trend will continue. Flow-through prices are not simple average of wholesale spot prices but depend on a profile of consumption for consumers in a given area.

The weighted spot price for residential consumers in Calgary over the last few years is illustrated in the figure below. Both its recent low values—consistent with average spot market outcomes—and its historic volatility are readily apparent.



Competitive contract prices also declined in the quarter

Competitive contract prices available to consumers have declined in recent quarters and the trend continued this quarter. The decline of competitive prices occurred in conjunction with the

relatively low spot and forward market prices observed recently. Given the forward-looking perspective of the retailers that offer long-duration retail contracts, this development reflects a combination of lower expected spot prices for future periods and rivalry among retailers to obtain customers.

Moreover, as discussed in the MSA's 'State of the market 2014: The residential retail markets for electricity and natural gas', retail contracts offered by retailers in Alberta typically have terms and conditions that are very favourable to consumer, e.g., very short termination periods.⁴ This remains the case.

The Alberta Utilities Commission reached a decision regarding Energy Price Setting Plans

On March 10, 2015 the AUC issued a decision in Proceeding #2941—a generic proceeding intended to examine return margins for the providers and to set out new EPSPs for the period 2014-2018. There are no specific duties for the MSA resulting from this the decision. Looking forward, the MSA will consider enhancing its monitoring activities on the EPSPs as the new plans come into force.

Updates on code of conduct matters

The Department of Energy announced that the electricity-related *Code of Conduct Regulation* and the natural gas-related *Code of Conduct Regulation* have been merged and brought under the AUC for administration.⁵ This becomes effective in January 1, 2016. The MSA will work with the AUC to ensure a smooth transition of responsibilities.

On other code of conduct-related matters, Capital Power recently applied for relief from the obligations of the electricity-related *Code of Conduct Regulation*. Capital Power had previously been defined as an affiliated retailer of EPCOR due to EPCOR's significant ownership position in Capital Power. However, EPCOR recently reduced its interest below the 10% threshold that triggered obligations on Capital Power. The request was approved.

⁴ The report is available at: <http://albertamsa.ca/uploads/pdf/Archive/00-2014/2014-11-27%20Retail%20SOTM%20FINAL.pdf>

⁵ The new electricity- and natural gas-related *Code of Conduct Regulation* is available at: http://www.qp.alberta.ca/1266.cfm?page=2015_058.cfm&leg_type=Regs&isbncln=9780779785605&display=html

Operating reserves

Operating reserve costs have declined significantly compared to Q1/14, which corresponds to the fall in average pool prices over the same period. The cost of procuring active reserves made up 93% of reserve costs for the quarter. There was little change in the cost of procuring standby reserves compared to Q1 2014. The cost of standby reserve activations, however, increased significantly this quarter compared to the Q1 2014, driven by an increased volume of activations.

Spinning + Supplemental Volumes (GWh)				
	2014	2015	Change	% Change
Active Reserves	1237.1	1031.7	-205.3	-16.6%
Standby Activations	15.5	41.9	26.3	169.4%

The increased rate of standby activations is likely driven by the decreased procurement of active reserves. As the table above shows, 205 fewer GWh of spinning and supplemental reserves were procured in Q1 2015 compared to the previous year, while standby activations for these reserves increased by 26 GWh.

The cost of active reserves declined significantly this quarter compared to Q1 2014, with the decrease evident over all three operating reserve products. In Q1 of 2014, spinning reserve costs were almost twice the total cost of regulating reserves. This trend was also observed in this quarter.

Operating Reserves Cost Overview

	Costs (\$ Millions)		Change
	Q1 2014	Q1 2015	
Active Procured	47.4	17.5	-63.1%
Standby Procured	2.7	2.4	-11.1%
Standby Activated	1.0	2.9	190.0%
Total	51.1	22.8	-55.4%
Cost/MWh			
Active Procured	\$29.88	\$12.66	-57.6%
Standby Procured	\$51.65	\$65.22	26.3%
Standby Activated	\$4.98	\$4.52	-9.2%
Total	\$23.84	\$11.66	-51.1%

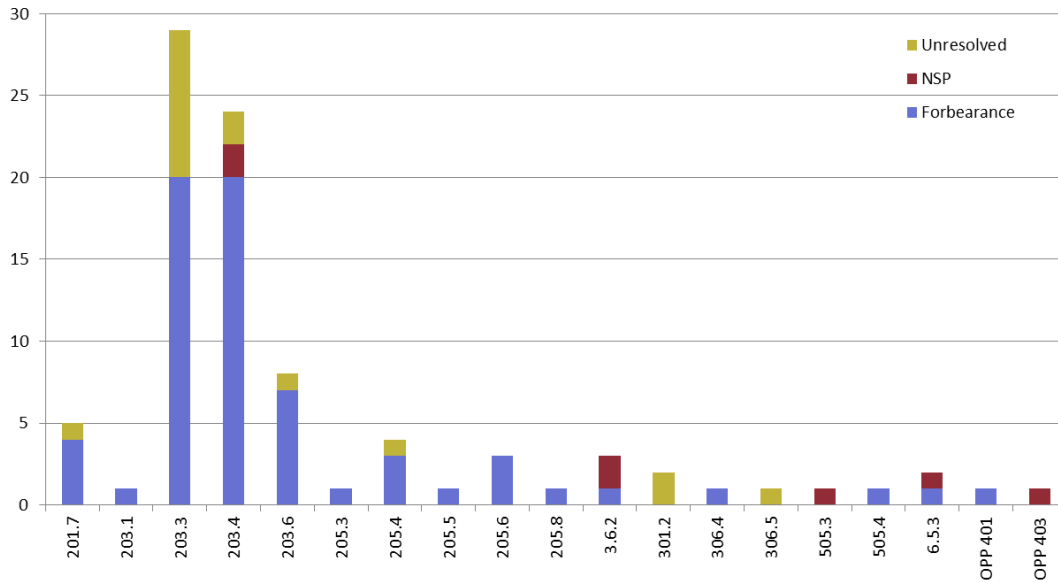
Active Reserve Costs

	Cost (\$Millions)		Change
	Q1 2014	Q1 2015	
RR	11.8	4.6	-61.0%
SR	19.2	7.4	-61.5%
SUP	16.4	5.5	-66.5%
Total	47.4	17.5	-63.1%
Cost/MWh			
RR	\$33.72	\$13.20	-60.9%
SR	\$31.01	\$14.27	-54.0%
SUP	\$26.58	\$10.68	-59.8%
Total	\$29.88	\$12.66	-57.6%

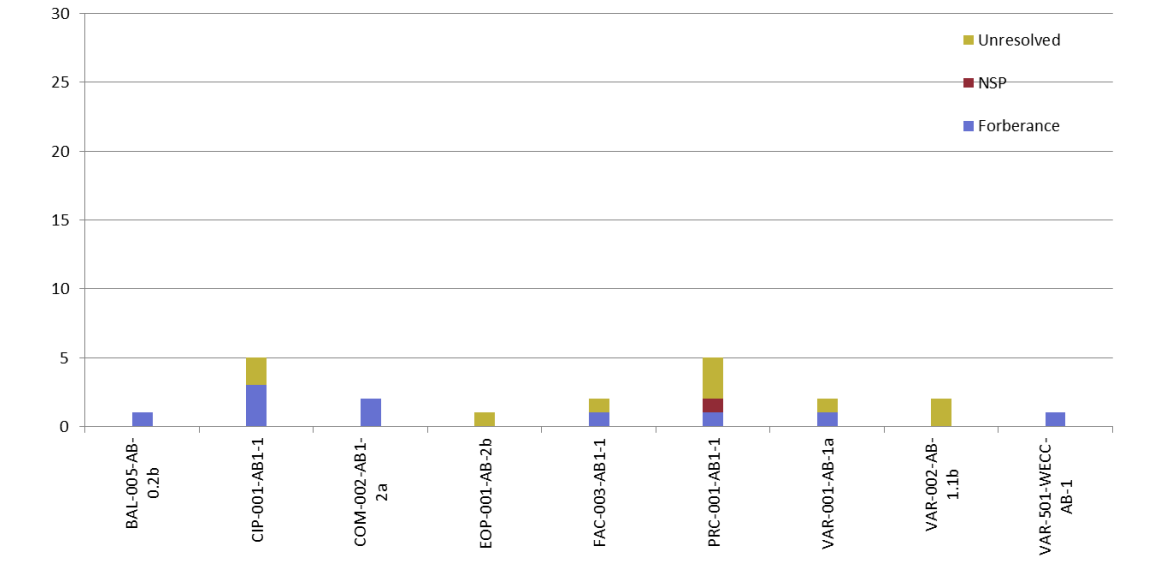
Compliance

- In Q1 2015, the MSA closed 73 ISO rules compliance matters and issued 7 notices of specified penalty for ISO rules related compliance matters. The total financial amount for these notices of specified penalty was \$4,750.
- In Q1 2015, the MSA closed 11 Alberta Reliability Standards compliance matters, issuing 1 notice of specified penalty totaling \$5,000.
- The volume of CIP-001 related compliance matters decreased substantially from the same period last year. This is primarily attributed to the number of AESO compliance audits completed in late 2013 and 2014 leading to the referral of CIP-001 contraventions in 2014.

Q1/2015 ISO Rule Compliance Matters



Q1/2015 ARS Compliance Matters



MSA activities and releases

- (2015-01-05) [Notice of Employment Opportunity - Analyst / Economist](#)
- (2015-01-15) [Notice MSA Staff Changes](#)
- (2015-01-15) [Notice of Employment Opportunity - Senior Analyst / Senior Economist](#)
- (2015-01-27) [Investigation Procedures](#)
- (2015-01-27) [Compliance Process](#)
- (2015-01-27) [MSA Code of Conduct](#)
- (2015-02-02) [MSA 2014 Fourth Quarter Report](#)
- (2015-02-11) [Compliance Review 2014](#)
- (2015-02-20) [Notice of Employment Opportunity - Market Surveillance Administrator](#)
- (2015-03-23) [Notice on QBA Litigation Privilege](#)
- (2015-03-25) [MSA Annual Report to the Minister, 2014](#)