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MSA Report

Quarterly Report

January – March 2006

28 April, 2006

Market Surveillance Administrator

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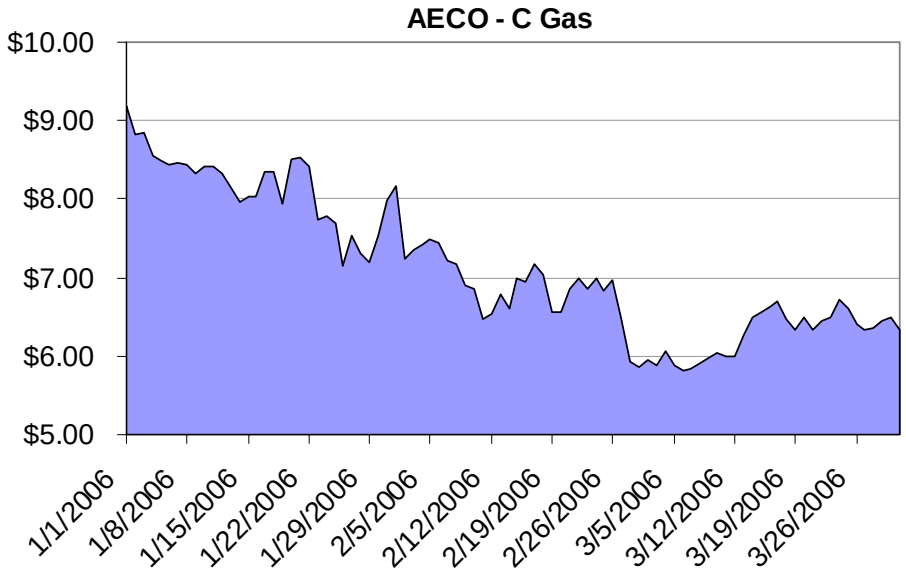
1 FEATURED MARKET DEVELOPMENTS DURING Q1/06

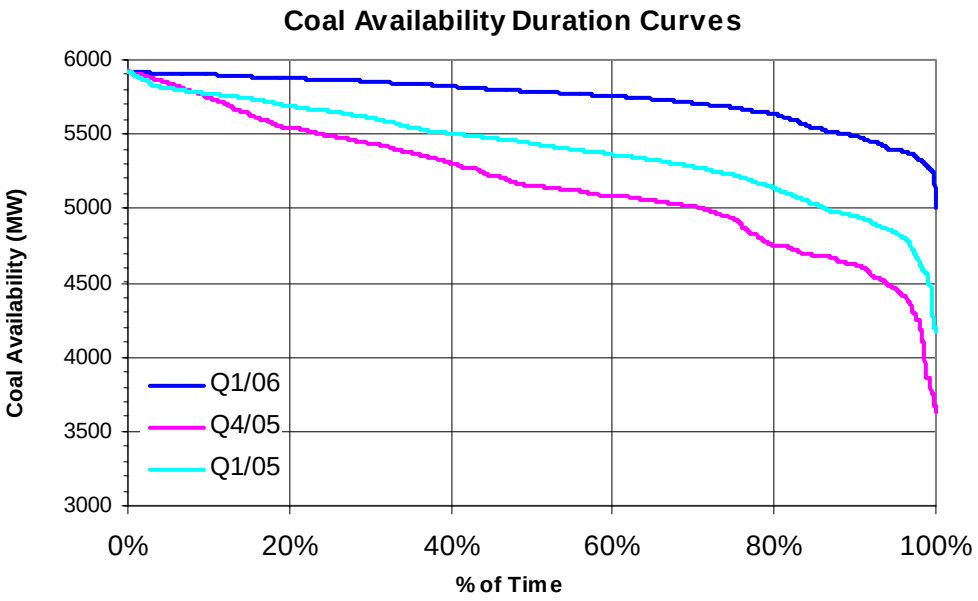
1.1 Electricity Prices

Market prices in Q1/06 softened significantly from levels observed in Q4/05 as the average wholesale price of electricity in Q1/06 was $56.84/MWh as compared to $116.53/MWh. Overall average heat rates also declined markedly to 7.9 GJ/MWh from 11.0 GJ/MWh last quarter. Wholesale prices and heat rates compare closely to those observed in Q1/05 when the average price was $45.90 and the overall heat rate was 7.0 GJ/MWh.

Fundamentals in the last quarter of 2005 underscored how convergence of lower coal availability, very high cost gas, and seasonally high demand can lead to the prices observed in Q4/05. The same fundamentals displayed a significant reversal in Q1/06. While crude prices paused somewhat during February, natural gas prices trended downward through the quarter returning to mid-2005 levels of $6.00 – $7.00/GJ.



Coal generation availability was up strongly in Q1/06. It remained well above 5500 MW 90 % of the time during Q1/06 and above 5000 MW the remaining 10% of the time. During Q4/05, coal availability fell below 5000 MW approximately 29% of the time and further, was below 4500 MW approximately 6% of the time during Q4/05. The low levels of unplanned outage for PPA coal units during Q1/06 also supported the high levels of coal generation availability. The unplanned outage rate for PPA units in Q1/06 was 1.6% which was substantially below 7.6% in Q4/05 and 6.2% in the same quarter a year ago.



The lack of hours during Q1/06 where coal availability was lean contributed to Q1/06 being the lowest quarter for Pool price volatility[1] since Q4, 2001 although volatility levels were close in Q2/04. Low price volatility was also a function of one participant setting system marginal price a larger percentage of the time overall during Q1/06. This aspect is further elaborated on in Section 1.3.

Average system demand moved higher in Q1/06 despite periods of unseasonably mild weather particularly in January where the mean daily high temperature in Calgary for example, was 4.6 ^{o}C as compared to the 30 year average of – 3.6 ^{o}C. On a monthly basis, average hourly system demand was up 2.6% in January, 5.6% in February, and 6.8% in March, all on a year over year basis.

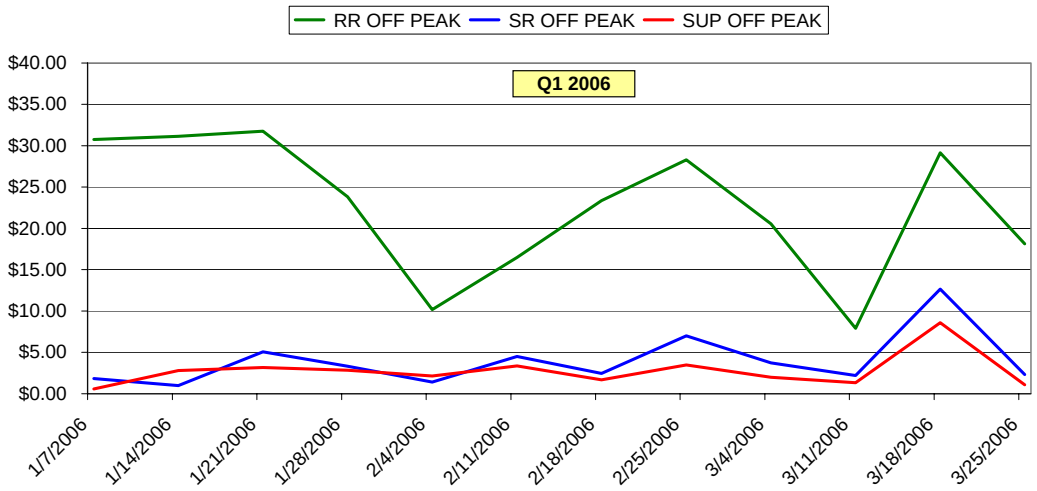
On the supply side of the market, no significant incremental capacity was commissioned during Q1/06 however Epcor and TransAlta announced the signing of a development agreement in March for a new 450 MW plant at the existing Keephills facility. While no significant new capacity was brought on line during the quarter, the market did see prominent control changes to existing capacity. The end of Q1/06 marked the first full quarter with all 750 MW of Sheerness capacity offered into the market by a single participant following the Balancing Pool's MAP III auction of the Sheerness PPA to TransCanada. This contrasts the prior three years where offers for Sheerness were submitted by multiple strip contract holders via the Balancing Pool's aggregator function. As well, the chapter 11 bankruptcy petition filed by Calpine prompted

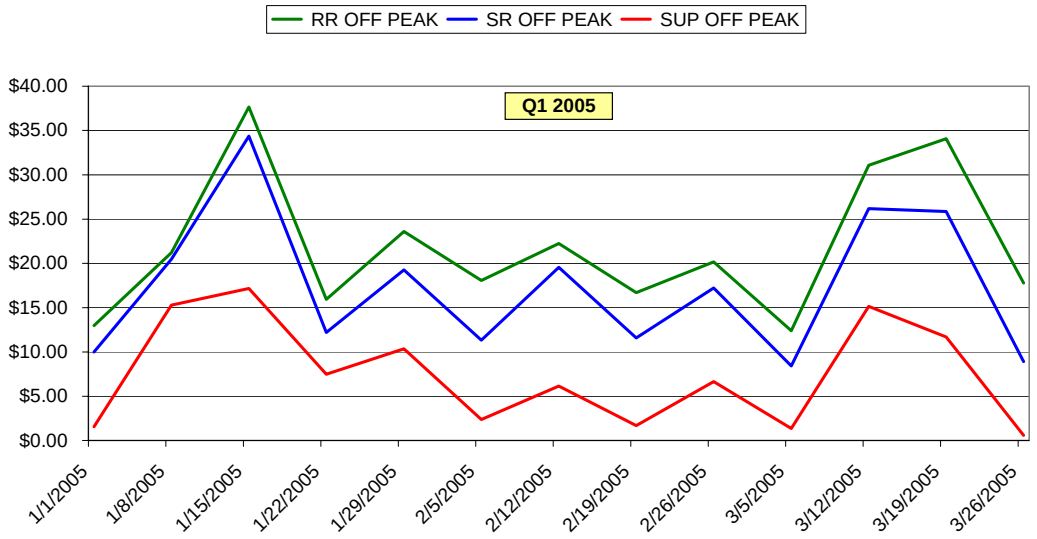
[1] Volatility is defined here as the coefficient of variation (CV = Std Deviation / Mean)

the operator of Calpine's Calgary Energy Center (a 300 MW combined cycle facility) to enter into a new short-term tolling arrangement with Epcor Merchant Capital on behalf of the Calpine Power Income Trust.

1.2 Off-Peak Active Regulating Reserves

Off-peak regulating reserve prices were observed to settle at significantly higher prices than other active AS products during Q1/06. This contrasts the situation observed in Q1/05 where off-peak regulating prices moved much closer in step with spinning and supplemental reserve prices.

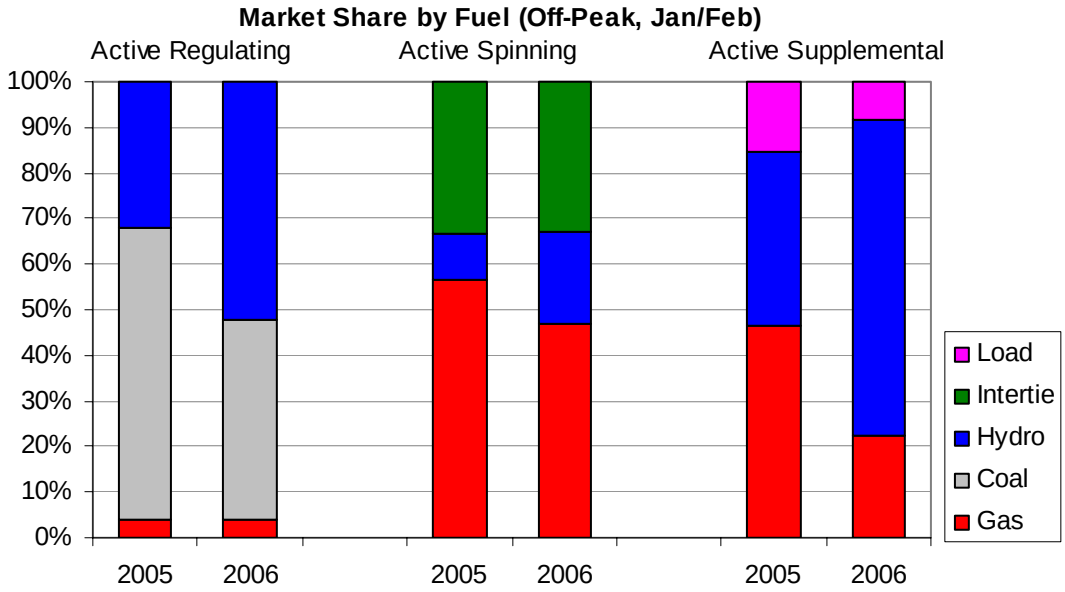




Year over year settlement data indicates that in fact off-peak regulating settlements were not substantially higher in January and February from year-ago levels, rather, off-peak spinning and supplemental reserve settlements declined.

The following table and graph show that in the first two months of the quarter, off-peak Pool prices and gas prices were similar while off-peak market shares by fuel type were significantly different.

	Average Off-Peak Pool Price	Average Gas Price	Average Demand
Jan & Feb 2005	$37.34/MWh	$6.27/GJ	7,854 MWh
Jan & Feb 2006	$40.43/MWh	$7.59/GJ	8,167 MWh



Regulating Reserves

Gas units are essentially locked out of the off-peak regulating market as the prevailing Pool prices are too low. When providing a regulating service of X MW, on average a unit will be called upon to produce roughly 50% (X/2 MW) of energy and a gas unit would often be generating that energy at a cost exceeding Pool price in off-peak periods.

In the regulating reserves market, hydro market share increased at the expense of coal. Even in off-peak periods, coal units can usually run profitably in the energy market and thus, this limits the amount of discounting such units would rationally consider. Accordingly, hydro discounts to increase market share were only modest and settled prices were about the same in Q1/06 as in Q1/05. The rates of participation of the different coal units showed significant changes in Q1/06 on a year over year basis – a sign of robust competition.

Spinning & Supplemental Reserves

Coal units are essentially locked out of the spinning and supplemental reserve markets due to their ability to generate profitably even in low priced hours. Typically, gas generators are able to offer spinning and supplemental reserves at higher discounts since these units would not normally be generating energy off-peak and thus would have a low opportunity cost to offset. For a generator to offer spinning reserves it must be synchronized to the grid, thus burning fuel. In the case of cogeneration, the unit is already running because of its steam commitment. The cost associated with being in a synchronized state is thus a sunk cost when considering participation in the spinning reserve market. In this circumstance, a cogen unit can offer high discounts as the relative opportunity cost in the energy market is very low. The interconnection also has a low opportunity cost of providing off-peak spinning and supplemental reserves if Import ATC is available.

The economics of supplemental reserve is very similar to that of spinning reserve, with the only major difference being that generators offering supplemental reserve do not have to be synchronized with the grid. Consequently, load also competes to supply supplemental, as well as some gas units that can start up quickly.

In both cases, the increased level of competition largely involved parties who were prepared to offer at increasingly higher discounts in order to gain market share and accordingly, settled prices in Q1/06 fell relative to those of Q1/05.

Conclusion

Given the increase in market share of active off-peak reserves by hydro, the behaviour of the balance of the market and the resulting market outcomes seem logical. The original question had been to rationalize the high off-peak regulating reserve prices over Q1/06, when in fact it was actually the drop off in the prices for spinning and supplemental reserves that needed to be assessed. At the present time, the MSA is studying the interactions of the various market participants in the AS market with a view of better understanding the market. As such, this is a work in progress.

1.3 Competitive Forces in the wholesale electricity market

From mid January 2006 the MSA observed a ‘shelf’, sometimes of approximately 1000MW, of energy offers in a very narrow band of prices in the middle of the merit order. It was also observed that system marginal price (SMP) was settling within the ‘shelf’ for prolonged periods.

In early March 2006 the MSA expressed its view that a 'shelf' setting SMP should not be sustainable in a competitive market since those generators with energy in the shelf but out of merit would be incented to reduce their offers slightly to greatly increase the probability of dispatch.[2] The MSA also expressed its concern that a large 'shelf' could potentially damage the price signal (e.g. supply and demand fundamentals could change significantly while price setting remained within the shelf). From March onwards the mid-merit shelf has been seen far less frequently.

The MSA wishes to emphasize that its concern in this area was not related to the price level during this period but continues to remain focused on the quality of the contest and the quality of signal resulting from the interaction between participants in our market.

1.4 Code of Conduct Regulation – 2006 Audits

The Code contemplates that the owners of electric distribution systems and their affiliated retailers will undergo a compliance audit on an annual basis, within the oversight of the MSA. The MSA also has the power to obtain information and conduct testing pursuant to its overall surveillance and investigation mandate under the EUA.

Consistent with its established practice, the MSA plans to test Code compliance through one independent audit firm retained by the MSA (Grant Thornton LLP), utilizing one common testing plan. The period tested will be July 1, 2005 through June 30, 2006, inclusive.

The EUB has been invited to observe the audit planning process this year. The goal is increased coordination between the two agencies, insofar as Code testing and other auditing of utilities and affiliates regulated by the EUB. The coordination efforts will also be useful insofar as any transition of Code related responsibilities from the MSA to the EUB, as contemplated in the 'roles and mandates' discussions sponsored by Alberta Energy.

1.5 MSA Activities

During Q1/06, in addition to its standard market monitoring activities, the MSA has been engaged on the following fronts:

Van Horne Institute Presentation – On March 2, 2006, Martin Merritt gave a presentation at the Van Horne Institute on Competition in Alberta's Wholesale Electricity Market. This presentation pointed out that the quality of competition and the quality of the price signal it produces are fundamental to a sustainable competitive market. The presentation is available for

[2] See *Van Horne Institute Presentation - Competition in Alberta's Wholesale Electricity Market (March 2006).* Available for download at http://www.albertamsa.ca/files/VanHorneMar22006wnotes.pdf.

download from the MSA website at: http://www.albertamsa.ca/7.html .

2005 Annual Report and Year in Review Report – In concert with the MSA spring stakeholder meeting held in late March, the MSA publishes both an annual report and a year in review report for the prior year. The annual report is the corporate annual report including financial statements. This year, its theme spoke to Clarity, Compliance, and Confidence. The year in review report is a more technically focused report that includes a broad range of metrics describing various parts of the Alberta market as well as the MSA's assessment of those fundamentals. These reports can be accessed from the MSA website at: http://www.albertamsa.ca/303.html.

Spring Stakeholder Meetings – The MSA held its annual spring stakeholder meetings in Calgary and Edmonton in late March. The spring stakeholder meetings are intended to present the MSA's work priorities for the coming year as well as provide a look-back to market outcomes in the last year. At this year's spring meeting, the MSA highlighted its intention to adjust its stakeholder process and discussed specific areas where this approach would first be applied. The presentation given at this meeting is available for download from the MSA website at: http://www.albertamsa.ca/7.html .

Investigations – The MSA proceeded with its work on two formal investigations commenced during 2005. This work is proceeding on schedule and further details will be published upon conclusion of these investigations.

Conduct Compliance Plans – During Q1/06, per Epcor Merchant Capital (EMC)'s new tolling agreement for marketing rights to Calpine Energy L.P.'s Calgary energy center, the MSA worked with EMC to establish a compliance protocol. The desire for such a compliance protocol was based on the strategic nature of this asset in the Alberta market coupled with EMC's large existing portfolio. The establishment of this agreement in no way indicates any questionable conduct on behalf of EMC to date.

Electricity Procurement for RRT Customers – The MSA saw a role within its mandate to address concerns raised during 2005 by a number of parties regarding the competitiveness of the RRO procurement process. In this regard, the MSA undertook a review of the various procurement methodologies used by larger regulated rate providers, as well as the procurement practices of certain municipalities and Rural Electrification Association. As part of the review, the MSA met with the various RRT providers and, in

particular, attended a workshop sponsored by the Alberta Federation of Rural Electrification Associations ("AFREA") to explain the MSA's role pertaining to REAs and the new RRO Regulation. The MSA published its report containing a principles-based view on the issues raised as well as a view on several specific related questions in mid-March. This paper is available for download from the MSA website at: http://www.albertamsa.ca/470.html.

Roles & Mandate Paper and Changing Regulation - Throughout Q1/06, the industry has had extensive discussion and debate on the Roles and Mandate Paper published by the Department of Energy in late 2005. The MSA has listened to the feedback that the government has received particularly with respect to those aspects of change which directly affect the MSA. In response to this feedback and even in advance of knowing what the regulations will finally contain, the MSA has announced its intent to develop new stakeholder processes for 2006.

EISG Meeting – In March, the MSA hosted the spring meeting of the Energy Intermarket Surveillance Group, an association of peer monitoring agencies in other electricity markets in North America and abroad. This association provides a valuable forum to discuss market issues of mutual interest and concern.

2 APPENDIX A – WHOLESALE ENERGY MARKET METRICS

Table 1 - Pool Price Statistics

	Average Price[1]	On-Pk Price	Off-Pk Price	Std Dev[2]	Coeff. Variation[3]
Jan - 06	72.12	93.21	47.60	58.57	81%
Feb - 06	54.07	65.56	38.76	30.35	56%
Mar - 06	44.08	51.54	33.74	27.68	63%
Q1 - 06	**56.76**	**70.10**	**40.03**	**43.24**	**76%**
Oct - 05	121.95	142.86	95.51	107.82	88%
Nov - 05	124.79	152.99	89.55	148.10	119%
Dec - 05	103.03	141.57	54.16	97.49	95%
Q4 - 05	**116.59**	**145.81**	**79.74**	**119.80**	**103%**
Jan - 05	50.24	54.73	45.02	66.94	133%
Feb - 05	42.67	48.49	34.90	33.65	79%
Mar - 05	44.78	49.60	38.10	36.69	82%
Q1 - 05	**45.90**	**50.94**	**39.34**	**48.65**	**106%**

1 - $/MWh

2 - Standard Deviation of hourly pool prices for the period

3 - Coefficient of Variation for the period (standard deviation/mean)

Figure 1 – Pool Price Duration Curves

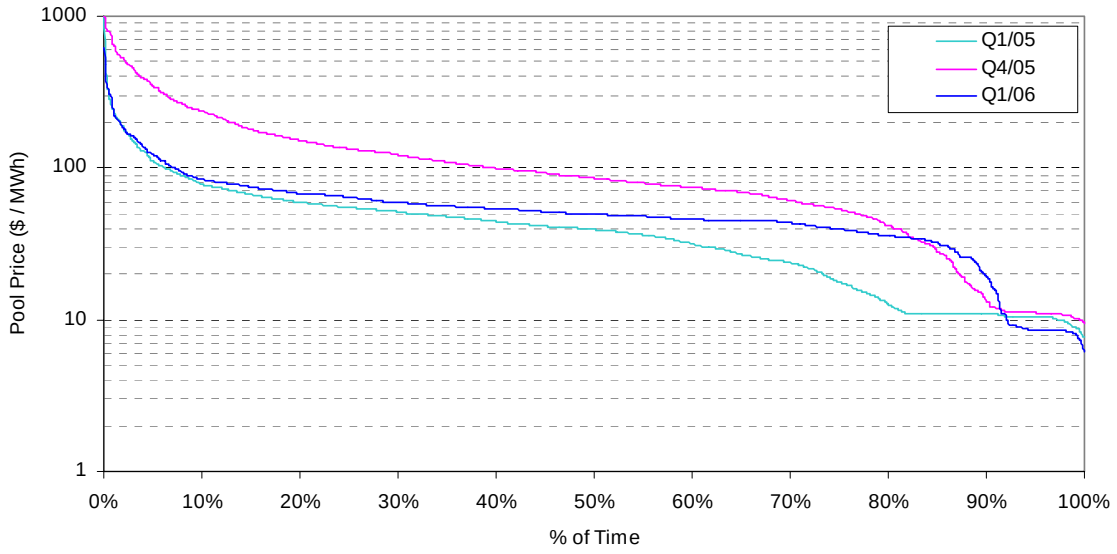


Figure 2 – Pool Price with Pool Price Volatility

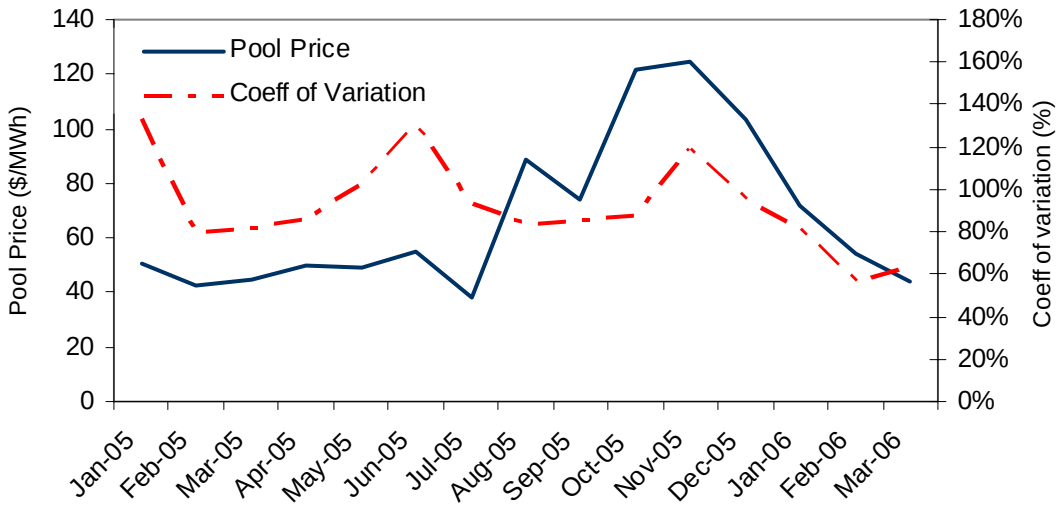


Figure 3 - Wholesale Electricity Price with AECO Gas Price

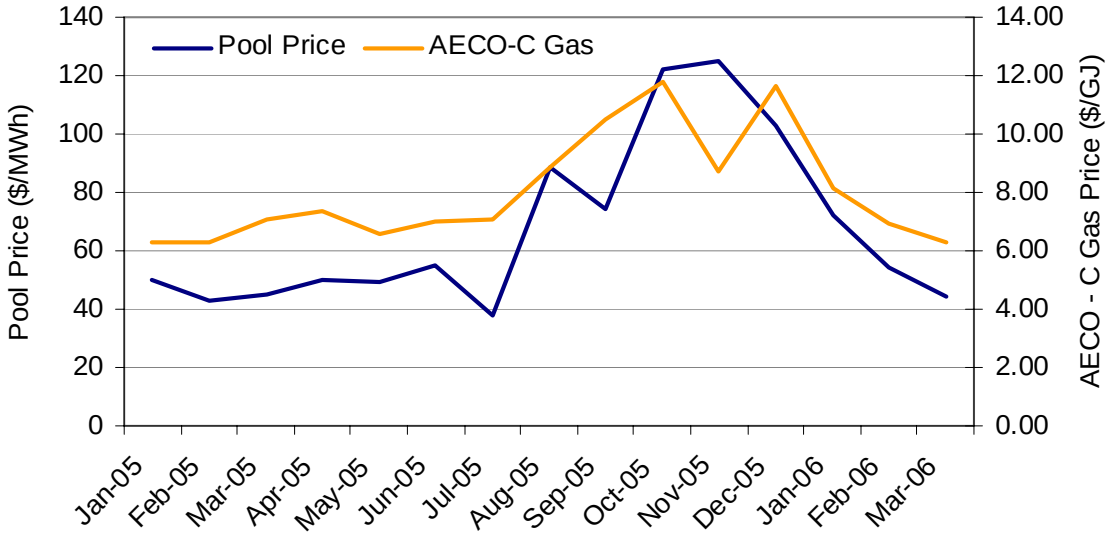


Figure 4 - Price Setters by Submitting Customer (All Hours)

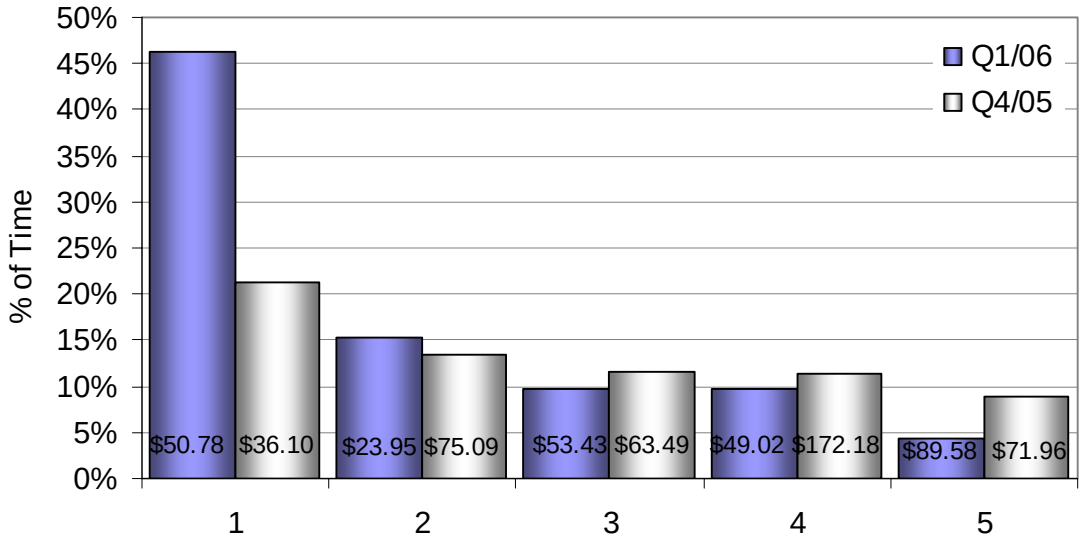


Figure 5 - Price Setters by Fuel Type (All Hours)

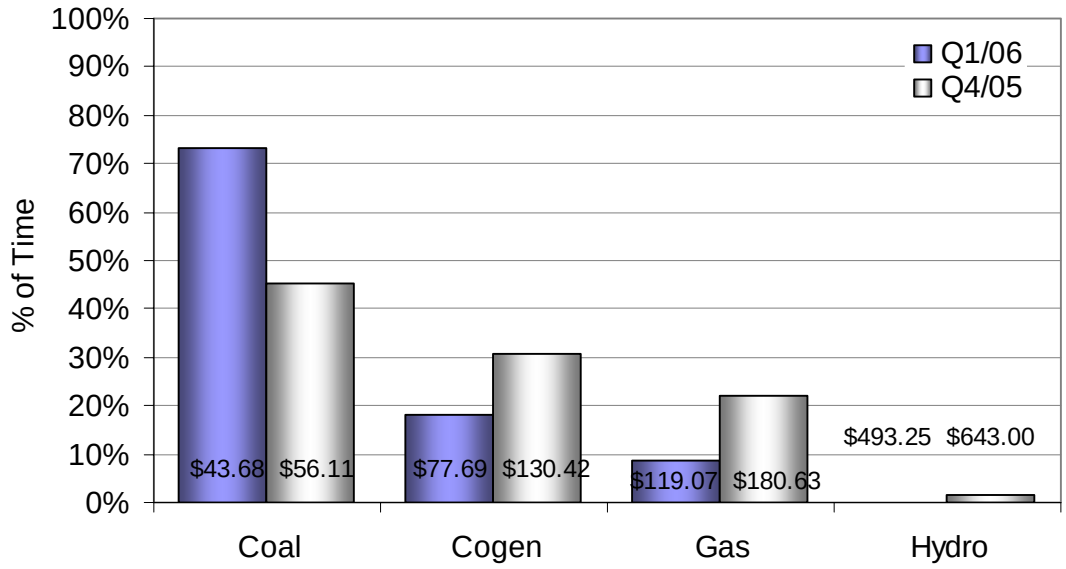
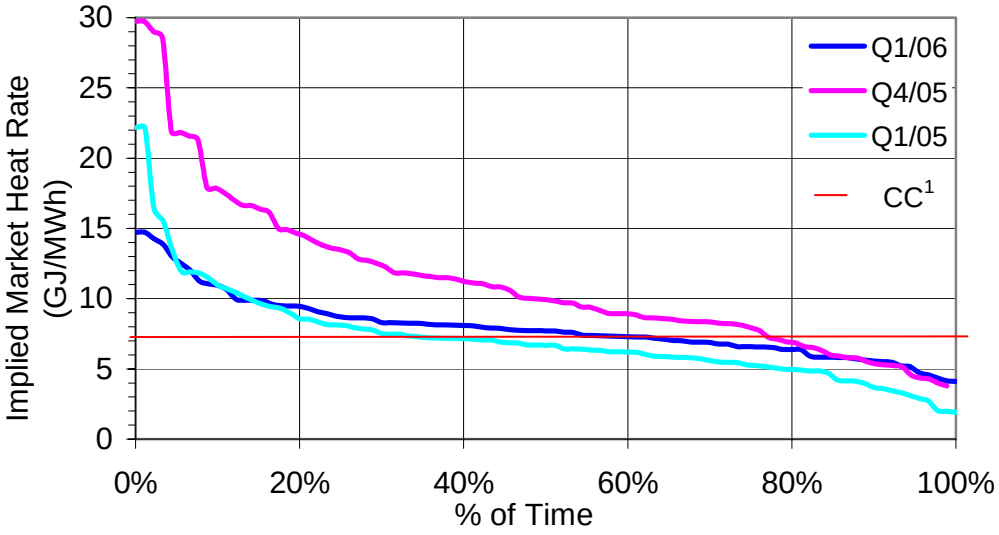
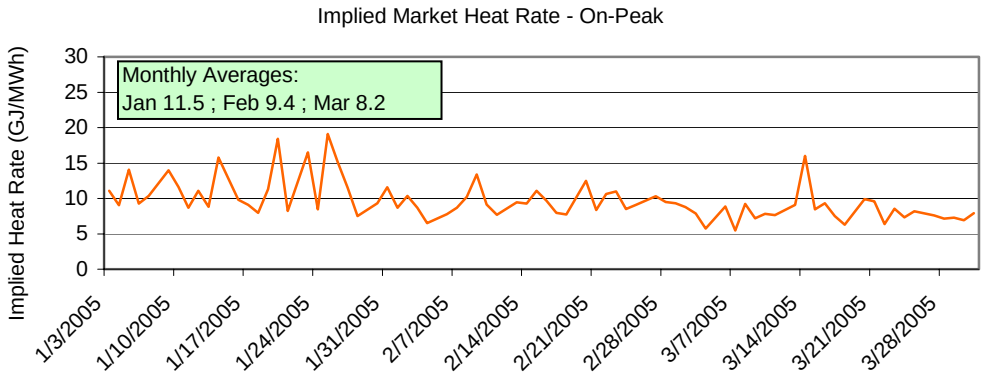


Figure 6 – Heat Rate Duration Curves (All Hours)



1 - CC denotes a representative combined-cycle generator with a heat rate of 7.5 GJ/MWh

Figure 7 - Implied Market Heat Rates (Q1/06)



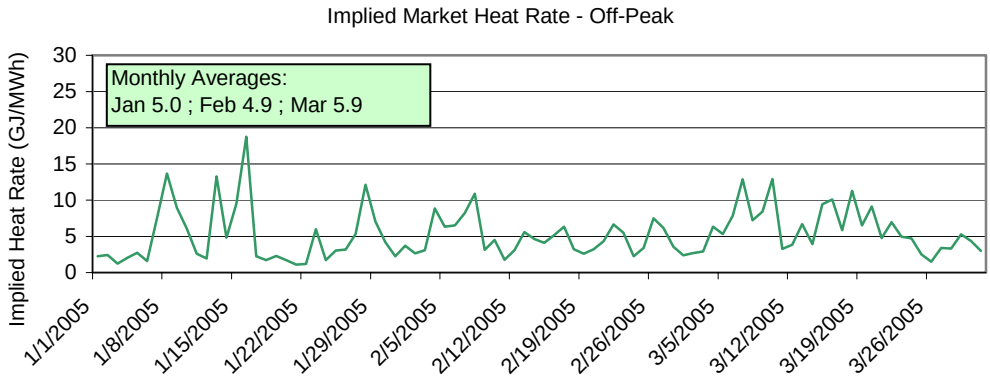


Figure 8 – PPA Outages by Quarter

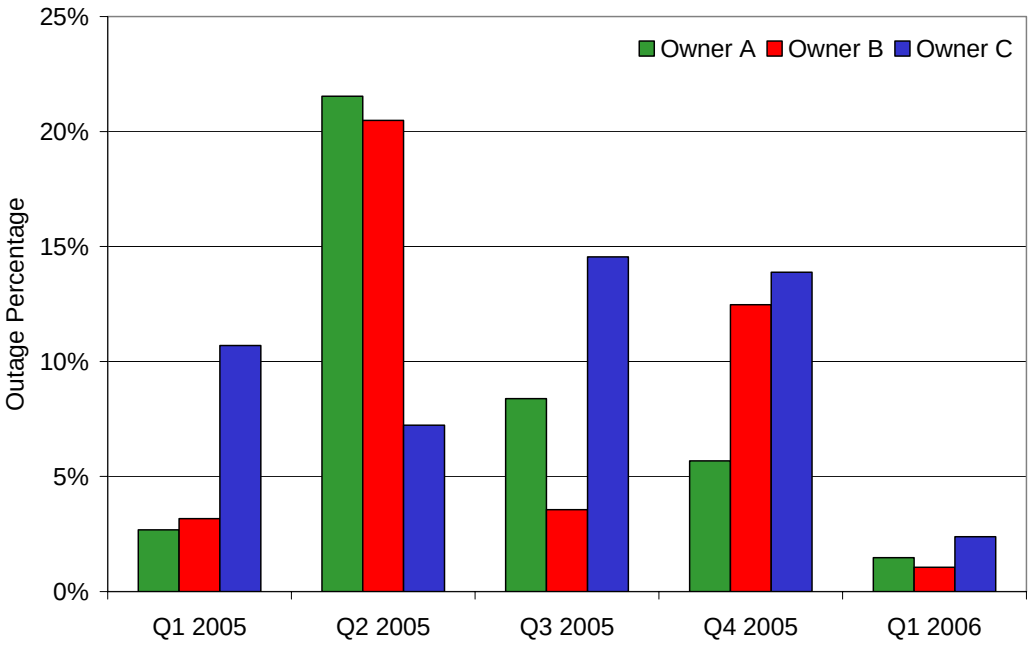


Table 2 - Percentage of Unplanned Outages for PPA Units

	Q1/06	2005	2004	2003	2002	2001
Owner-A	**1.4%**	5.0%	6.1%	4.9%	4.2%	3.2%
Owner-B	**1.0%**	5.4%	1.5%	1.5%	0.5%	1.2%
Owner-C	**1.9%**	6.5%	6.3%	5.7%	10.8%	8.8%
PPA weighted average	**1.6%**	5.9%	5.5%	4.9%	7.7%	6.3%

1) PPA Units include GN 1,2; BR 3, 4, 5; SH 1, 2; SD 1-6; KH 1, 2
2) Outage rates are based on maximum continuous rating (MCR), not gross unit capacity

Table 3 - MW Weighted Portfolio Target Availability (%) vs Actual Availability (%) - Coal Fired PPA Units

	Target 2004	Actual 2004	Target 2005	Actual 2005	Target 2006	Actual Q1 2006
Owner-A	87%	88%	87%	90%	87%	99%
Owner-B	90%	97%	89%	90%	89%	99%
Owner-C	87%	89%	87%	88%	87%	98%
PPA weighted Average	87%	90%	87%	89%	87%	98%

Table 4 – PFEC and PFAM Tracking

Claim Type	Carry-Over	Submitted	Accepted	Rejected	Unresolved	Net kWh Adjustment
PFEC						
Q1/06	127	641	607	85	76	NA
Q4/05	195	594	611	51	127	NA
PFAM						
Q1/06	8	149	99	37	21	15,461,264
Q4/05	48	79	100	19	8	36,081,731

Table 5 – Summary of UFE Reasonable Exception Reports

Quarter	Outstanding	New	Resolved	Unresolved
Q1/06	132	38	0	170
Q4/05	93	50	11	132

3 APPENDIX B – TIE LINE METRICS

Table 6 – Q1/06 Tie Line Statistics

	BC			Saskatchewan			Overall		
	Imports	Exports	Net Imports	Imports	Exports	Net Imports	Imports	Exports	Net Imports
	(MWh)	(MWh)	(MWh)	(MWh)	(MWh)	(MWh)	(MWh)	(MWh)	(MWh)
January	47,228	23,123	24,105	50,630	610	50,020	97,858	23,733	74,125
February	26,131	15,277	10,854	15,736	1,792	13,944	41,867	17,069	24,798
March	14,676	25,757	(11,081)	19,172	4,289	14,883	33,848	30,046	3,802
Total	88,035	64,157	23,878	85,538	6,691	78,847	173,573	70,848	102,725
On-Peak	88%	3%		60%	47%		74%	7%	
Off-Peak	12%	97%		40%	53%		26%	93%	

Figure 9 – Market Share of Importers and Exporters (Q1/06)

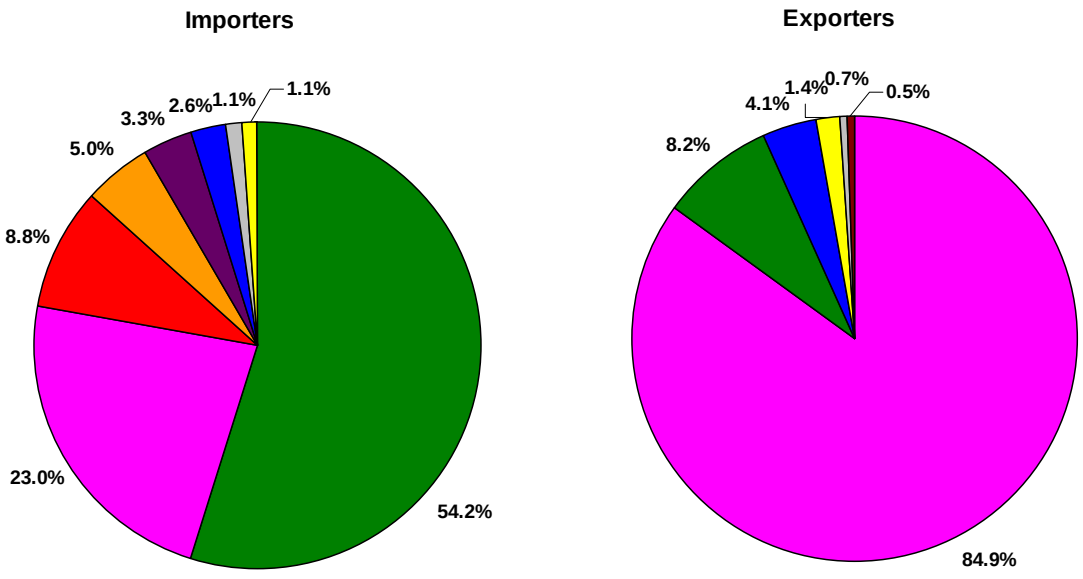


Figure 10 - Tie Line Utilization (Q1/06)

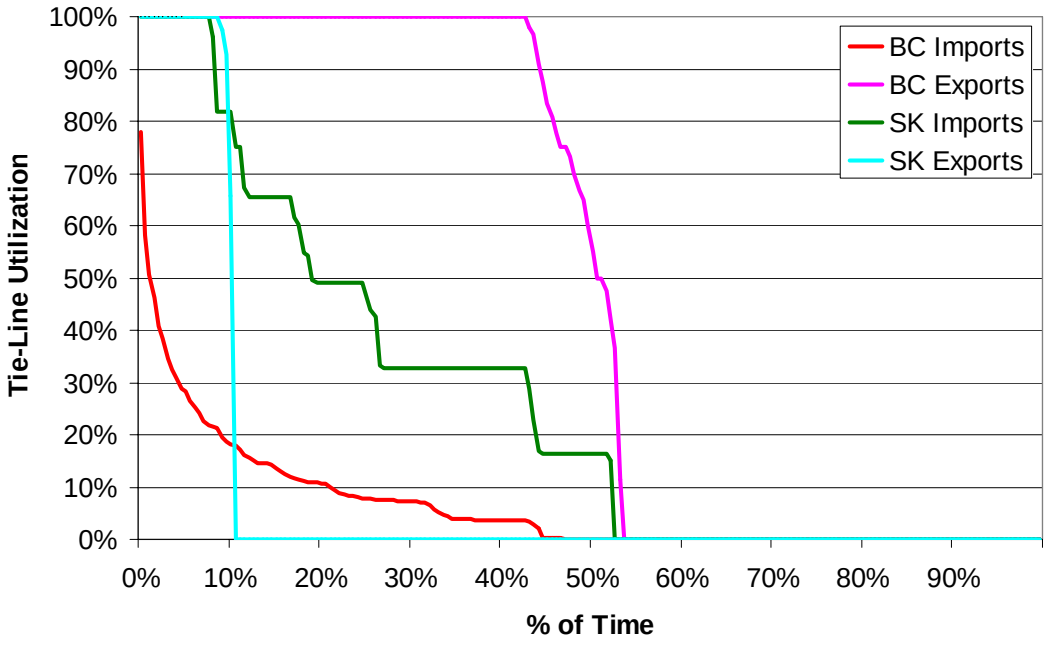


Figure 11 - Imports with Trade-weighted Prices

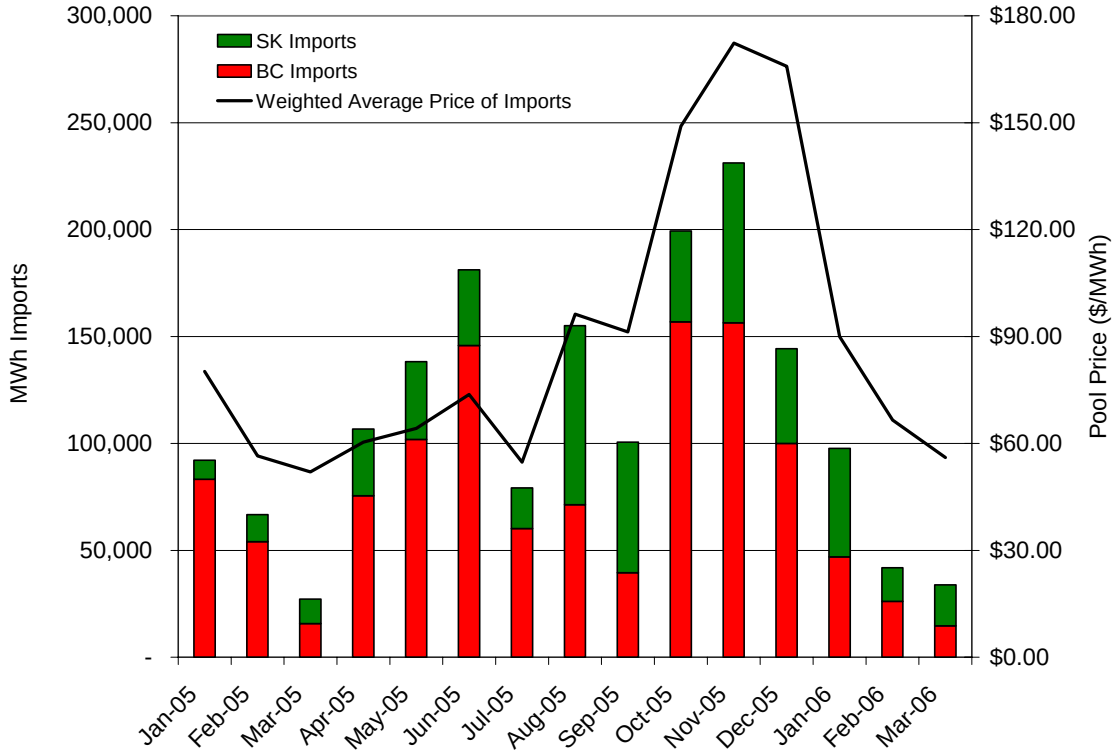


Figure 12 - Exports with Trade-weighted Prices

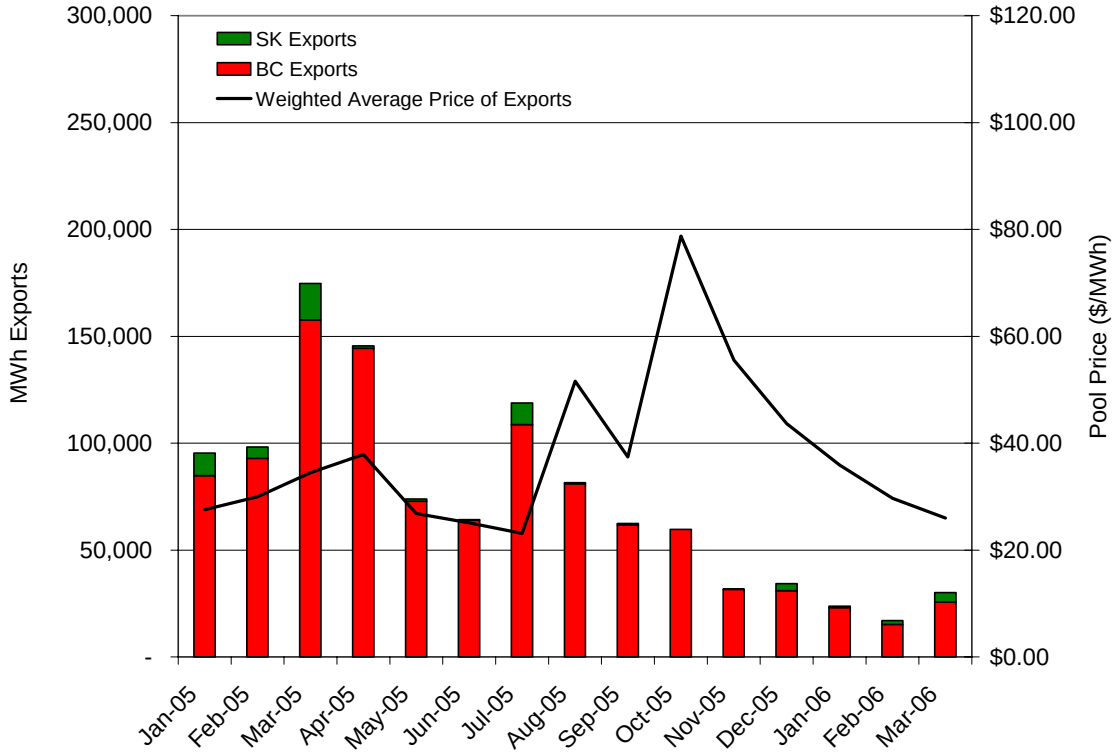


Figure 13 - On-Peak Prices in Other Markets

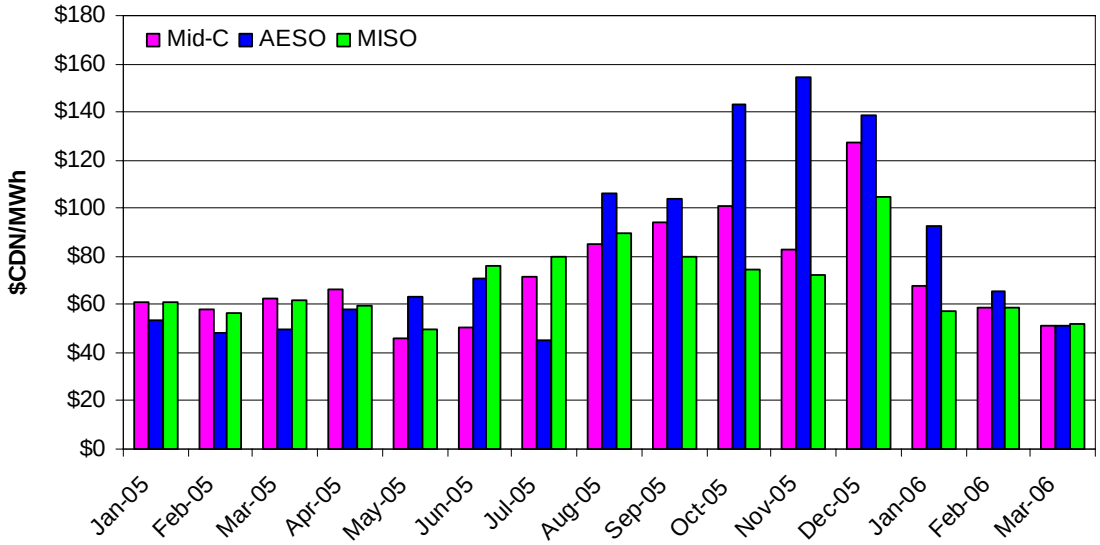
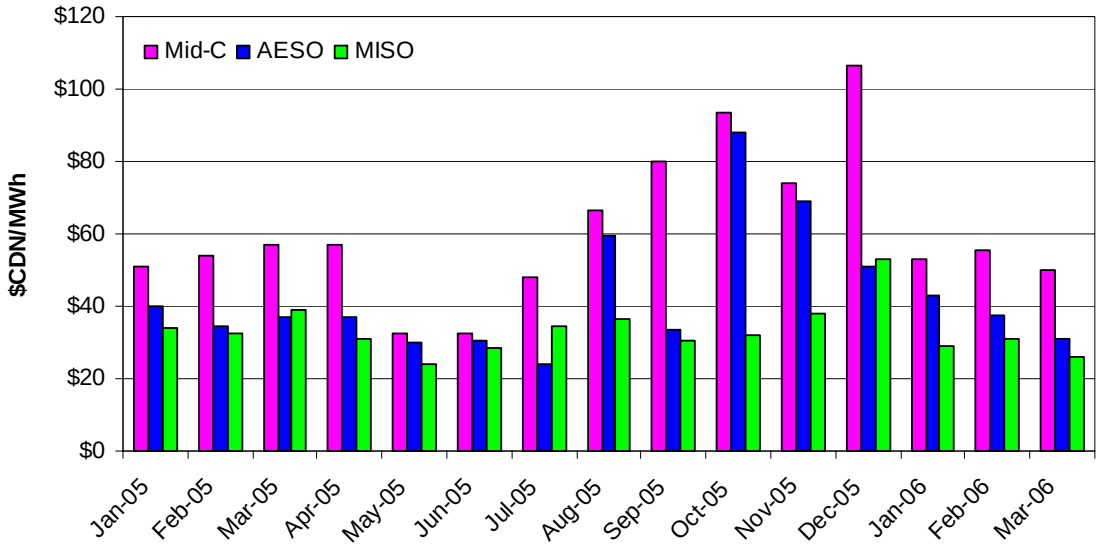


Figure 14 - Off-Peak Prices in Other Markets



4 APPENDIX C – ANCILLARY SERVICES MARKET METRICS

Ancillary services are the system support services that ensure system stability and reliability. The Alberta Interconnected Electric System (AIES) is required to carry sufficient reserves in order to assist in the recovery of any unexpected loss of generation or an interconnection. Reserves are competitively procured by the AESO through the Alberta Watt-Exchange (Watt-Ex) and over the counter (OTC). Standard ancillary services products (contracts) include active and standby products for each of Regulating, Spinning, and Supplemental reserves. The majority of active reserve products are indexed and settled against Pool price prevailing during the contract period. Standby reserve products are priced in a similar manner to options with a fixed premium and an exercise price (activation price). The activation price is only paid in the event that the contract is activated.

Figure 15 - Active Settlement Prices - All Markets (Watt-ex and OTC)

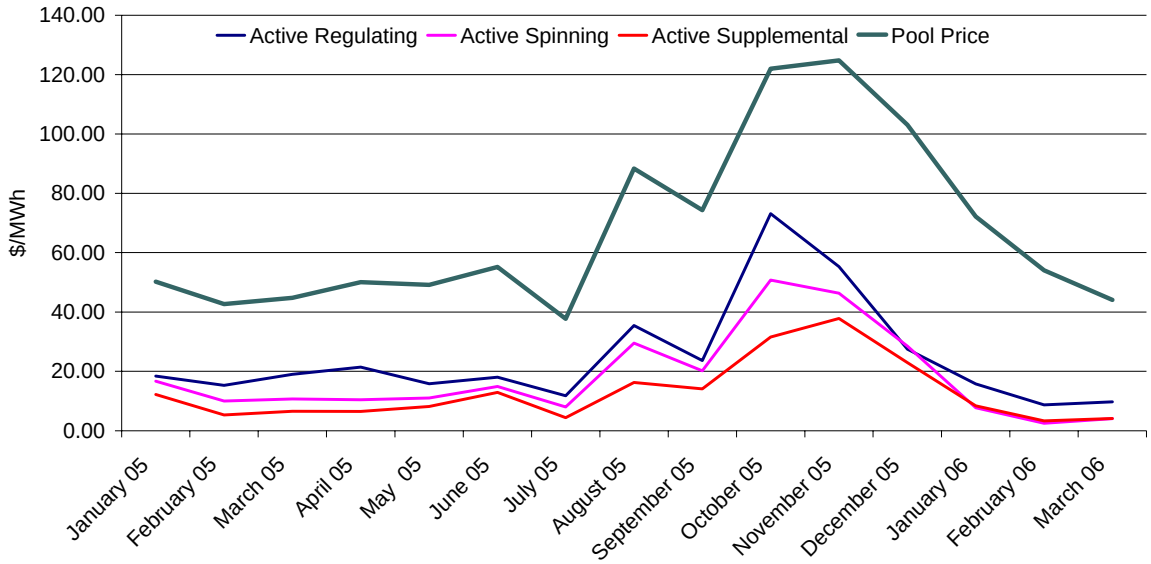


Figure 16 - Standby Premiums - All Markets (Watt-ex and OTC)

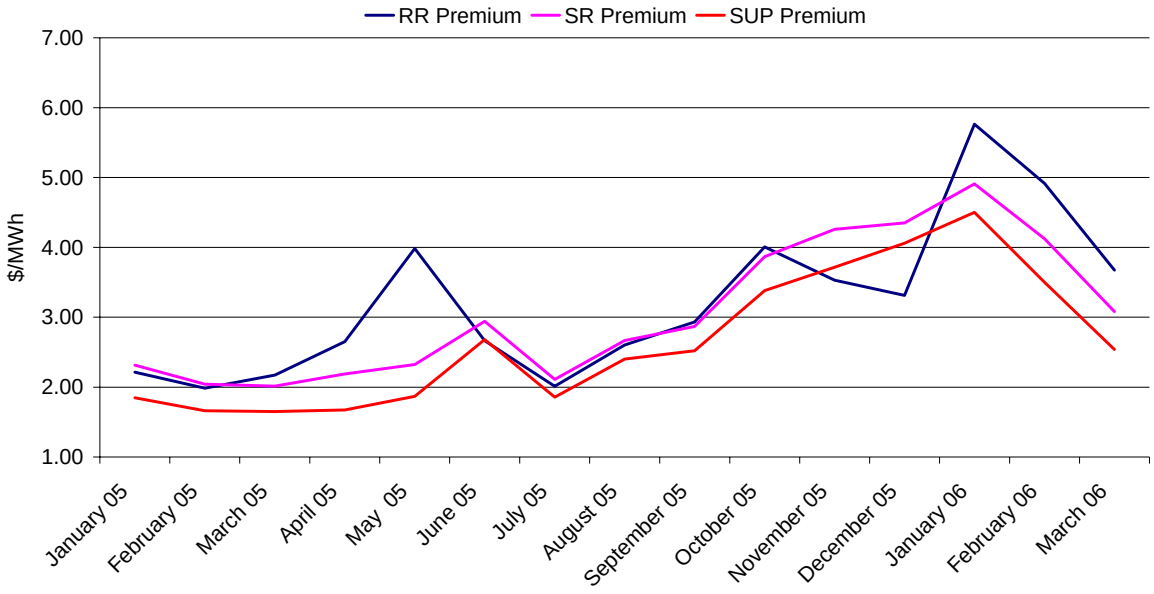


Figure 17 – Activation Prices – All Markets (Watt-ex and OTC)

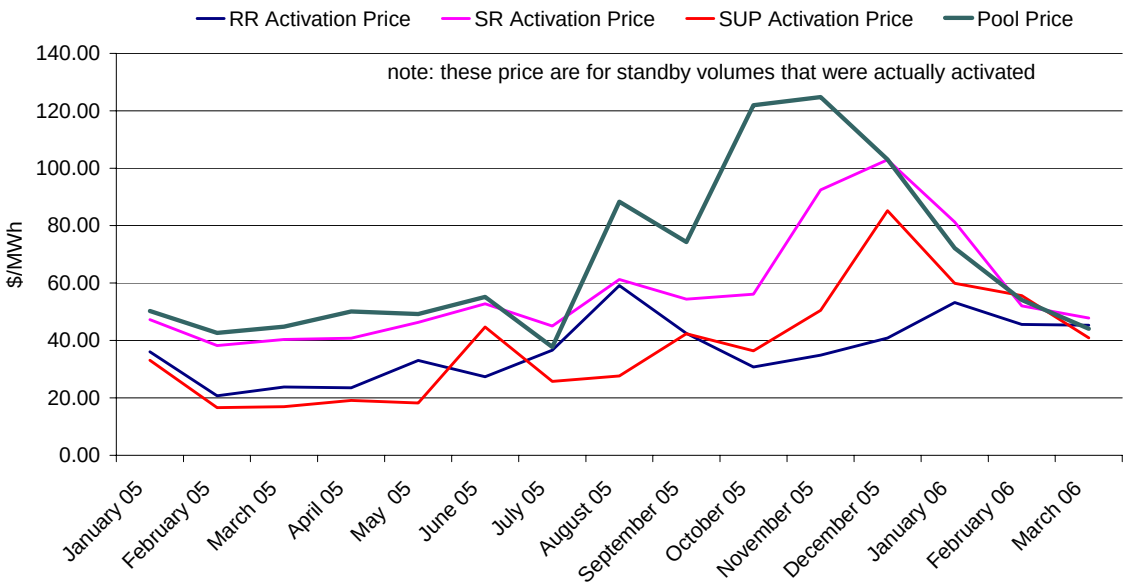


Figure 18 - Standby Activation Rates

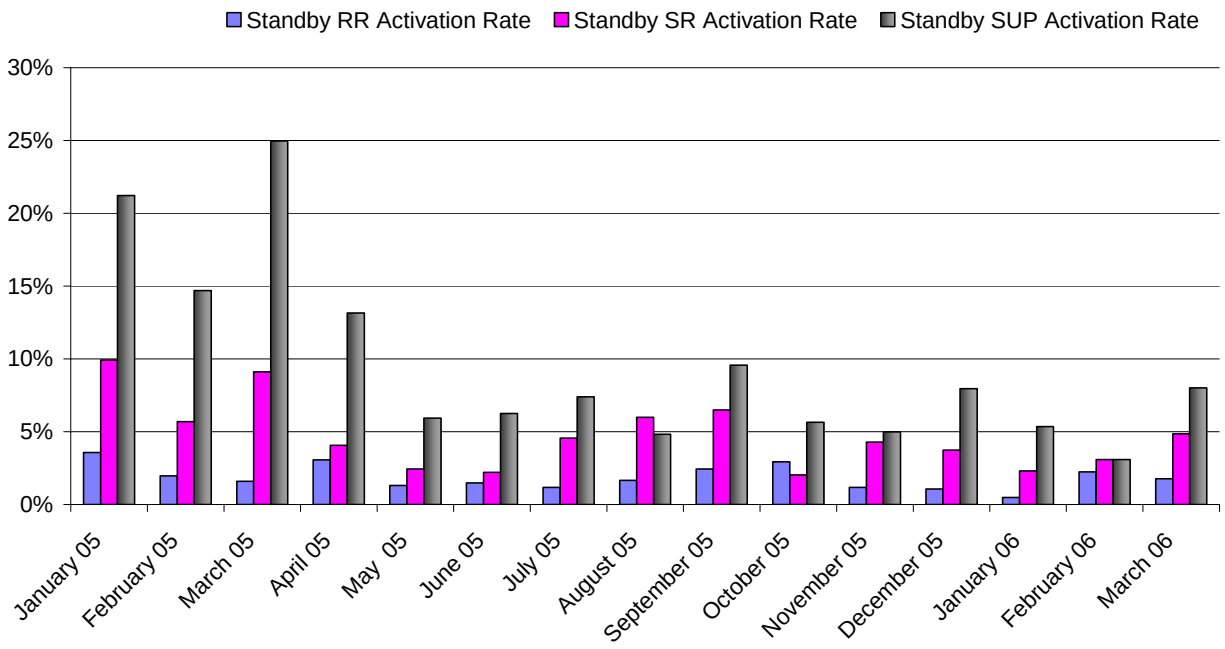


Figure 19 - OTC Procurement as a % of Total Procurement

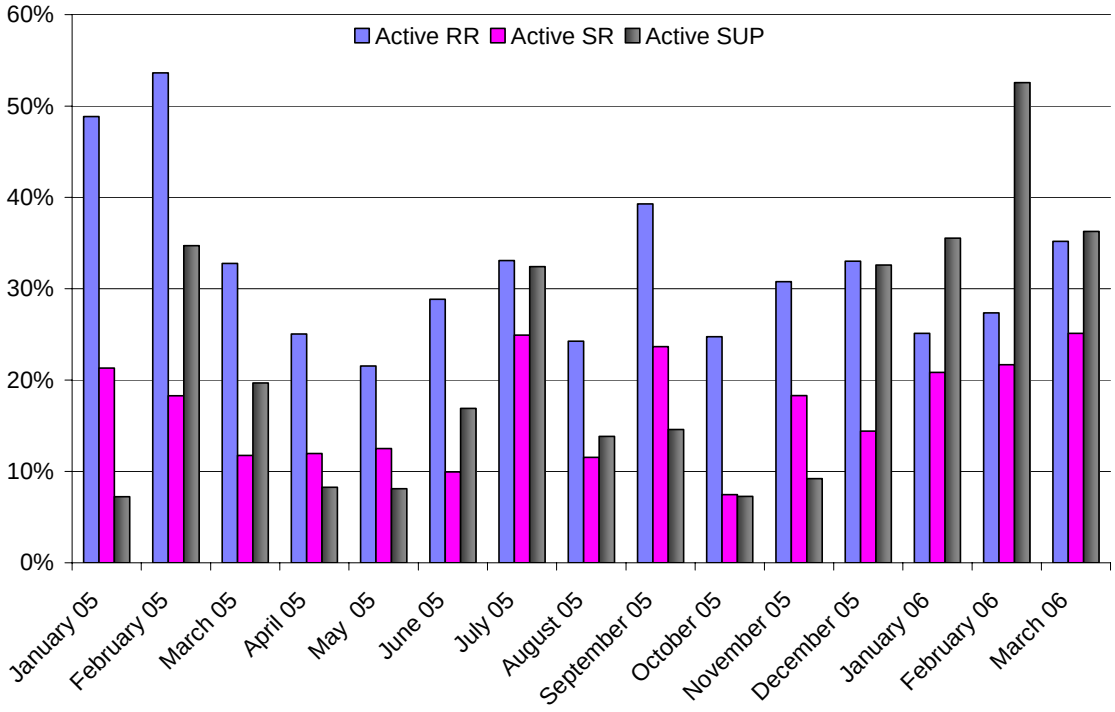


Figure 20 - Active Regulating Reserve Settlement by Market

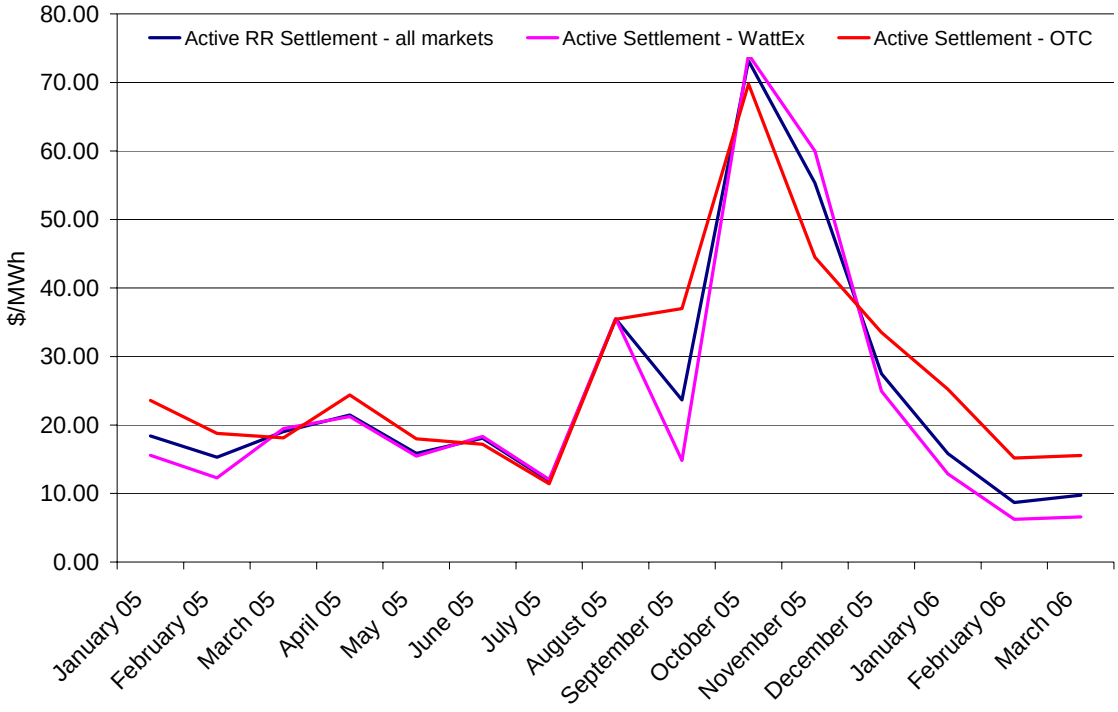


Figure 21 - Active Spinning Reserve Settlement Price by Market

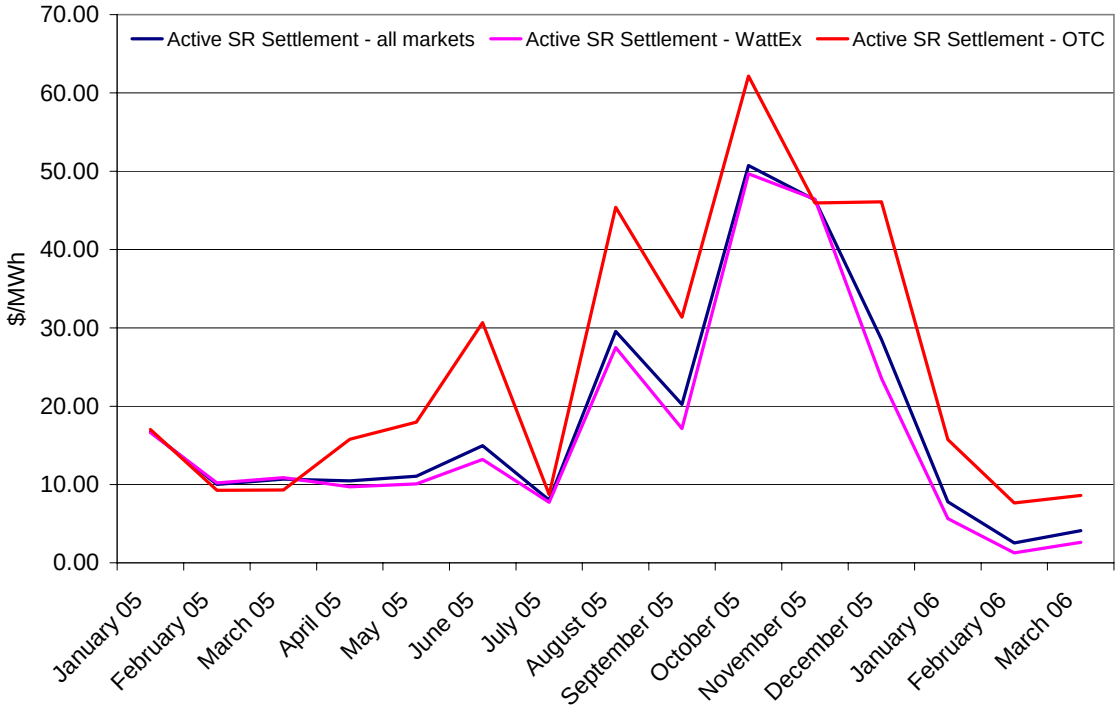


Figure 22 - Active Supplemental Reserve Settlement Price by Market

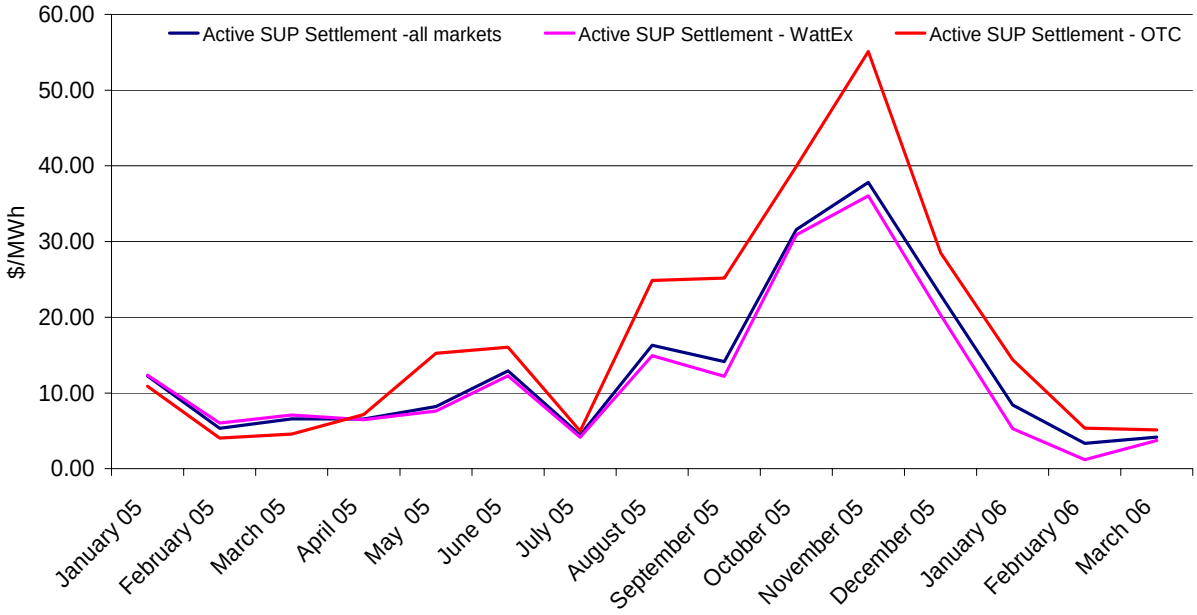


Figure 23 – Active Regulating Reserve Market Share by Fuel Type

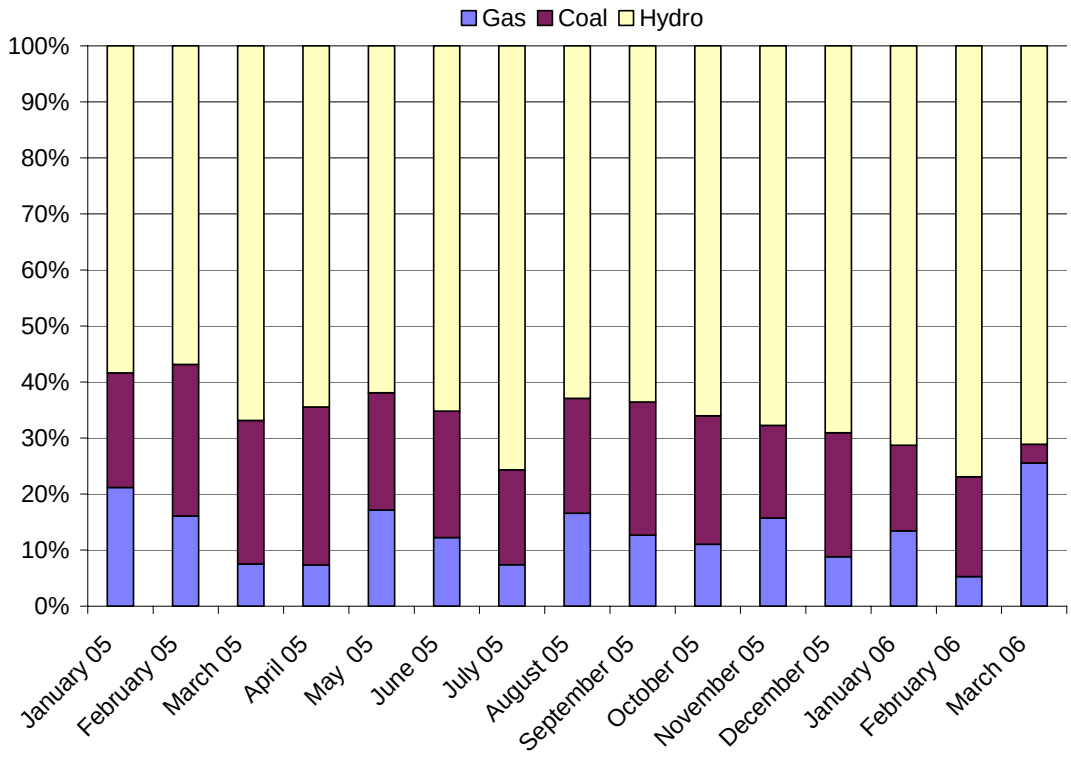


Figure 24 – Active Spinning Reserve Market Share by Fuel Type

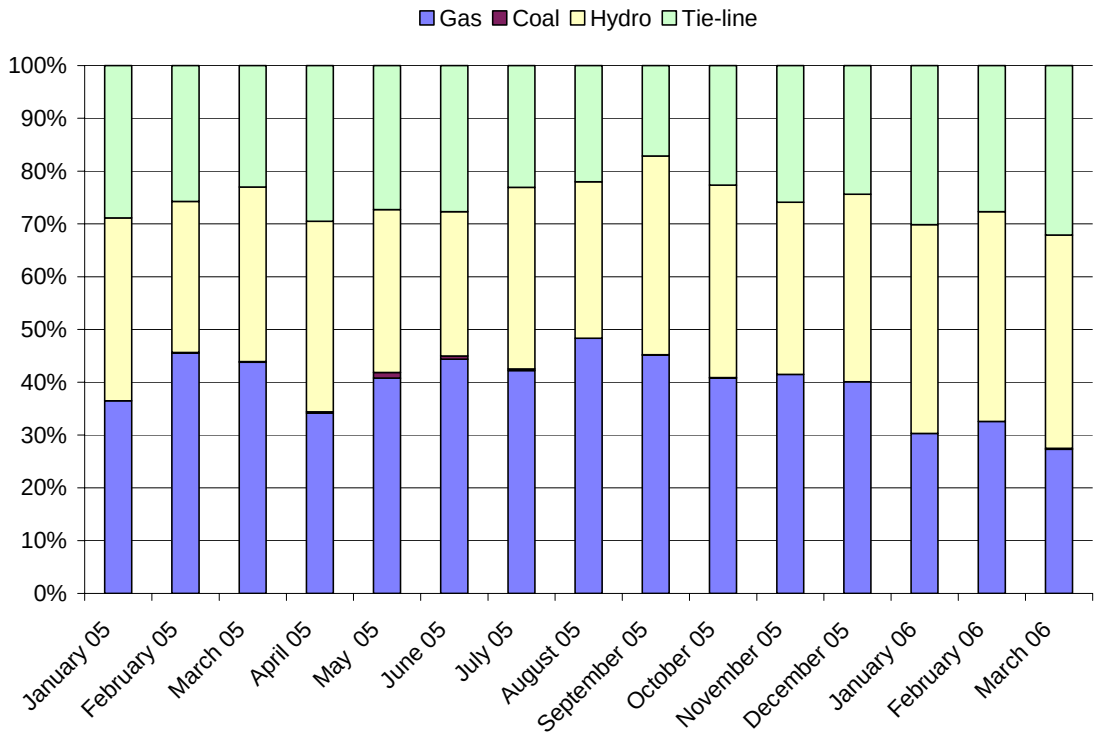


Figure 25 – Active Supplemental Reserve by Fuel Type