

Model Revisions

In September 2009 the AESO provided a Fact Sheet intended to provide clarity around the costs of proposed transmission system upgrades in Alberta. Recent changes to the Fact Sheet include revision of assumed project expenditure for regional projects to better reflect anticipated in-service dates, inclusion of costs for the 2008-2011 years, and a downward revision of forecast Demand Transmission Service (DTS) energy in order to exclude behind-the-fence load.

The changes to results are as follows:

	<u>Sep/09</u>	<u>Update</u>
Bill 50 Projects (\$5.6 B)		
- Typical Residential	\$5.26/month	\$5.27/month
- Industrial (80% load factor)	\$7.14/MWh	\$7.15/MWh
CTI Projects (\$8.1 B)		
- Typical Residential	\$7.40/month	\$7.34/month
- Industrial (80% load factor)	\$10.04/MWh	\$9.97/MWh
Total Projects (\$14.5 B)		
- Typical Residential	\$11.20/month	\$11.91/month
- Industrial (80% load factor)	\$15.19/MWh	\$16.49/MWh

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Results Summary

NOTE: Estimates are indicative only as they based on a number of assumptions such as project costs, consumption levels, operating costs, tariff structure and other factors.

	Critical Transmission Infrastructure Projects (\$8,121 2008 \$ millions)	Bill 50 Projects (\$5,667 2008 \$ millions)	Projects totaling \$14,464 (2008 \$ millions)
Increase in Transmission Charges (%)			
Estimated increase in transmission charges by 2017 (%)	~ 82%	~ 59%	~ 136%
Residential			
Estimated increase in transmission charges (\$/month)	~ \$8 per month	~ \$5 per month	~ \$12 per month
Industrial			
Assumption: 80% load factor, 20 MW capacity			
Estimated increase in transmission charges by 2017 (\$/MWh)	~ \$10/MWh	~ \$7/MWh	~ \$16.50/MWh

List of Assumptions

Assumptions Used in the Revenue Requirement Calculation (see Worksheet 3)

Variable	Value	Reference:
Equity %	33.00%	EUB Decision 2004-052, pp. 44 and 51
Debt %	67.00%	
Cost of Debt	5.05%	Bank of Canada long-term bond rate plus 1 percent
After-tax Return on Equity	8.75%	EUB Order U2007-347, p. 2. Approximates the amount a TFO is allowed to earn after taxes are paid.
Federal Corporate Tax Rate	19.00%	Canada Revenue Agency
Provincial Corporate Tax Rate	10.00%	Alberta Corporate Tax Act, section 21 (o)
Total Corporate Tax Rate	29.00%	
Operating Expense Factor	1.50%	Based on feedback from Transmission Facility Owners
Depreciation Rate	2.88%	Average AltaLink and ATCO rates = 2.88%. AltaLink 2007-2008 GTA and ATCO Electric's 2009-2010 GTA

Assumptions Regarding Time Periods

Days in a month	30.42
Hours in a month	730

Assumed Alberta Consumer Price Index Annual Values (Reference: The Conference Board of Canada, Provincial Outlook Long-Term Economic Forecast 2009)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Alberta Consumer Price Index	1.223	1.255	1.279	1.305	1.334	1.363	1.391	1.418	1.447	1.476
Annual Inflation %		2.60%	1.90%	2.10%	2.20%	2.20%	2.00%	2.00%	2.00%	2.00%

Assumed Annual Demand Transmission Service (DTS) Load Volumes (Reference: AESO FC2008 Load Forecast)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
DTS Energy (GWh)	55,708	57,357	59,561	62,562	66,322	69,830	73,052	76,692	80,261	82,912

Assumed Transmission Charge Amount (\$/month)

FortisAlberta 2009 Residential Customer Class Transmission Charges	\$8.96 (Reference: FortisAlberta 2010/2011 Distribution Tariff Application. Page 519) (Assumes average monthly consumption of 600 KWh)
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AESO 2009 Revenue Requirement

\$/MWh Value of the Current AESO Revenue Requirement Recovered from Distribution Facility Owners and Direct Connect Customers

2009 AESO Revenue Requirement (\$million)	\$856 (Reference: AESO 2009 Rate Application)
Forecast 2009 DTS Load (GWh)	57,357
\$/MWh Revenue Requirement Amount (\$/MWh)	\$14.92

Impact of Critical Transmission Infrastructure Capital Costs

Capital Cost Estimates - Critical Transmission Infrastructure (2008 \$ millions)										
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Edm to Calgary Transmission Reinforcement (West)						\$1,485				
Edm to Calgary Transmission Reinforcement (East)						\$1,650				
Heartland Development						\$360				
Heartland Development - 240 kV Upgrade						\$23				
Heartland Development - Upgrade Conductor								\$4		
Fort McMurray System Reinforcements (Genesee)							\$1,225			
Fort McMurray System Reinforcements (Heartland)									\$820	
South System Reinforcement for Wind Integration							\$900			
High River Area Upgrades					\$550					
South Transmission System Development					\$371					
South Transmission System Development					\$25					
South Transmission System Development								\$218		
South Transmission System Development										\$390
South Calgary Transmission System Reinforcements					\$100					
	\$0	\$0	\$0	\$0	\$1,046	\$3,518	\$2,125	\$222	\$820	\$390
										\$8,121

Escalation of Capital Cost Estimates from 2008 dollars to nominal "as-spent" dollars										
ISD	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
2012	\$1,046	\$1,073	\$1,094	\$1,117	\$1,141					
2013	\$3,518	\$3,609	\$3,678	\$3,755	\$3,838	\$3,922				
2014	\$2,125	\$2,180	\$2,222	\$2,268	\$2,318	\$2,369	\$2,417			
2015	\$222	\$228	\$232	\$237	\$242	\$248	\$252	\$258		
2016	\$820	\$841	\$857	\$875	\$895	\$914	\$933	\$951	\$970	
2017	\$390	\$400	\$408	\$416	\$425	\$435	\$444	\$452	\$461	\$471
Capital Cost Estimates (Nominal \$ millions)	\$0	\$0	\$0	\$0	\$1,141	\$3,922	\$2,417	\$258	\$970	\$471

Calculation of Estimated Incremental Revenue Requirement																				
Revenue Requirement Calculation (nominal \$ millions)																				
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Operating expense	\$0.00	\$0.00	\$0.00	\$0.00	\$16.62	\$45.19	\$91.12	\$109.51	\$116.83	\$125.66	\$127.20	\$125.22	\$123.24	\$121.26	\$119.27	\$117.29	\$115.31	\$113.33	\$111.34	\$109.36
Depreciation	\$0.00	\$0.00	\$0.00	\$0.00	\$32.86	\$145.83	\$215.43	\$222.84	\$250.78	\$264.34	\$264.34	\$264.34	\$264.34	\$264.34	\$264.34	\$264.34	\$264.34	\$264.34	\$264.34	\$264.34
Income Tax	\$0.00	\$0.00	\$0.00	\$0.00	\$13.08	\$35.55	\$71.68	\$86.14	\$91.90	\$98.84	\$100.06	\$98.50	\$96.94	\$95.38	\$93.82	\$92.26	\$90.70	\$89.15	\$87.59	\$86.03
Debt Costs	\$0.00	\$0.00	\$0.00	\$0.00	\$37.50	\$101.94	\$205.54	\$247.01	\$263.53	\$283.44	\$286.93	\$282.46	\$277.99	\$273.51	\$269.04	\$264.57	\$260.10	\$255.63	\$251.15	\$246.68
Equity Return	\$0.00	\$0.00	\$0.00	\$0.00	\$32.02	\$87.04	\$175.49	\$210.89	\$225.00	\$242.00	\$244.98	\$241.16	\$237.34	\$233.52	\$229.71	\$225.89	\$222.07	\$218.25	\$214.43	\$210.62
TOTAL	\$0.00	\$0.00	\$0.00	\$0.00	\$132.08	\$415.55	\$759.25	\$876.39	\$948.06	\$1,014.28	\$1,023.51	\$1,011.68	\$999.85	\$988.02	\$976.18	\$964.35	\$952.52	\$940.69	\$928.86	\$917.02
Amount in Rate Base (nominal \$ millions)																				
Rate Base Amount (Opening)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,108.25	\$4,884.76	\$7,085.95	\$7,120.63	\$7,840.05	\$8,046.38	\$7,782.04	\$7,517.70	\$7,253.36	\$6,989.02	\$6,724.68	\$6,460.34	\$6,196.00	\$5,931.66	\$5,667.32
Rate Base Amount (Ending)	\$0.00	\$0.00	\$0.00	\$0.00	\$1,108.25	\$4,917.63	\$7,264.65	\$7,514.74	\$8,457.01	\$8,914.12	\$8,914.12	\$8,914.12	\$8,914.12	\$8,914.12	\$8,914.12	\$8,914.12	\$8,914.12	\$8,914.12	\$8,914.12	\$8,914.12
Rate Base Amount - Average for Year	\$0.00	\$0.00	\$0.00	\$0.00	\$1,108.25	\$3,012.94	\$6,074.70	\$7,300.35	\$7,788.82	\$8,377.08	\$8,480.25	\$8,348.08	\$8,215.91	\$8,083.74	\$7,951.57	\$7,819.40	\$7,687.23	\$7,555.06	\$7,422.89	\$7,290.72
Cumulative Capital Costs (nominal \$ millions)																				
Beginning Capital Costs	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,141.12	\$5,063.45	\$7,480.07	\$7,737.59	\$8,707.79	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46
Ending Capital Costs	\$0.00	\$0.00	\$0.00	\$0.00	\$1,141.12	\$5,063.45	\$7,480.07	\$7,737.59	\$8,707.79	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46	\$9,178.46
Depreciation Calculations (nominal \$ millions)																				
Accumulated Depreciation - Opening	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$32.86	\$178.69	\$394.12	\$616.96	\$867.74	\$1,132.08	\$1,396.42	\$1,660.76	\$1,925.10	\$2,189.44	\$2,453.78	\$2,718.12	\$2,982.46	\$3,246.80	\$3,511.14

Annual Depreciation	\$0.00	\$0.00	\$0.00	\$0.00	\$32.86	\$145.83	\$215.43	\$222.84	\$250.78	\$264.34	\$264.34	\$264.34	\$264.34	\$264.34	\$264.34	\$264.34	\$264.34	\$264.34	\$264.34	\$264.34
Accumulated Depreciation - Ending	\$0.00	\$0.00	\$0.00	\$0.00	\$32.86	\$178.69	\$394.12	\$616.96	\$867.74	\$1,132.08	\$1,396.42	\$1,660.76	\$1,925.10	\$2,189.44	\$2,453.78	\$2,718.12	\$2,982.46	\$3,246.80	\$3,511.14	\$3,775.48

\$/MWh Value of the Incremental Revenue Requirement Resulting From Capital Spending

	2009	2010	2011	2012	2013	2014	2015	2016	2017
\$/MWh Incremental Revenue Requirement Amount	\$0.00	\$0.00	\$0.00	\$1.99	\$5.95	\$10.39	\$11.43	\$11.81	\$12.23

(Note: Numbers are cumulative. That is, they show the change relative to 2009 values)

Ratio of Incremental Revenue Requirement Amount to 2009 AESO Revenue Requirement Amount - Derives the Percent Increase to 2009 Rates

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Increase to 2009 AESO Revenue Requirement Amount (Increase to rates)	0%	0%	0%	13%	40%	70%	77%	79%	82%

(Note: Numbers are cumulative. That is, they show the change relative to 2009 values)

Calculation of the impact to industrial customer transmission charges

Apply Rate Increase Amount Calculated Above to the \$8.96 FortisAlberta Transmission Charge

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Forecast Customer (600KWh) Transmission Charge (\$/month)	\$8.96	\$8.96	\$8.96	\$10.16	\$12.53	\$15.20	\$15.82	\$16.05	\$16.30

Scenarios - \$ Change in Transmission Charges

	KWh	2009	2010	2011	2012	2013	2014	2015	2016	2017
Basecase - 600 KWh consumption	600		\$0.00	\$0.00	\$1.20	\$3.57	\$6.24	\$6.86	\$7.09	\$7.34
Lower consumption - 550 KWh	550		\$0.00	\$0.00	\$1.10	\$3.28	\$5.72	\$6.29	\$6.50	\$6.73
Higher consumption - 650 KWh	650		\$0.00	\$0.00	\$1.30	\$3.87	\$6.76	\$7.43	\$7.68	\$7.96

Calculation of the impact to industrial customer transmission charges

Calculation of industrial customer transmission charges using current AESO rate for Direct Connect Customers as the starting point

- Please refer to the AESO Bill Calculator located on the AESO website as follows: www.aeso.ca, Tariff, Current Tariff, Tariff effective August 1, 2008, AESO Bill Estimator
- Enter inputs in column F to obtain monthly bill estimate (Nnote: For 2009, an \$89/MWh pool price is assumed)

Load Factor (%)	Capacity (MW)	2009	2010	2011	2012	2013	2014	2015	2016	2017
60%	20	\$128,000	\$128,000	\$128,000	\$145,080	\$179,040	\$217,140	\$226,011	\$229,311	\$232,922
60%	50	\$272,000	\$272,000	\$272,000	\$308,296	\$380,459	\$461,423	\$480,273	\$487,286	\$494,959
60%	100	\$501,000	\$501,000	\$501,000	\$567,854	\$700,772	\$849,901	\$884,620	\$897,539	\$911,670
70%	20	\$135,000	\$135,000	\$135,000	\$153,014	\$188,831	\$229,015	\$238,371	\$241,852	\$245,660
70%	50	\$290,000	\$290,000	\$290,000	\$328,698	\$405,637	\$491,959	\$512,056	\$519,533	\$527,713
70%	100	\$536,000	\$536,000	\$536,000	\$607,524	\$749,728	\$909,275	\$946,420	\$960,241	\$975,360
80%	20	\$142,000	\$142,000	\$142,000	\$160,949	\$198,622	\$240,890	\$250,731	\$254,392	\$258,398
80%	50	\$307,000	\$307,000	\$307,000	\$347,966	\$429,415	\$520,798	\$542,073	\$549,989	\$558,648
80%	100	\$571,500	\$571,500	\$571,500	\$647,761	\$799,384	\$969,498	\$1,009,103	\$1,023,839	\$1,039,959
90%	20	\$149,000	\$149,000	\$149,000	\$168,883	\$208,413	\$252,765	\$263,091	\$266,933	\$271,135
90%	50	\$325,000	\$325,000	\$325,000	\$368,368	\$454,593	\$551,333	\$573,856	\$582,236	\$591,403
90%	100	\$607,000	\$607,000	\$607,000	\$687,998	\$849,039	\$1,029,720	\$1,071,786	\$1,087,437	\$1,104,559

Calculation of the \$/MWh transmission charge

Load Factor (%)	Capacity (MW)	Consumption (MWh)	2009	2010	2011	2012	2013	2014	2015	2016	2017	Difference 2017-2009	Average
60%	20	8,760,000	\$15	\$15	\$15	\$17	\$20	\$25	\$26	\$26	\$27	\$12	
60%	50	21,900,000	\$12	\$12	\$12	\$14	\$17	\$21	\$22	\$22	\$23	\$10	\$11
60%	100	43,800,000	\$11	\$11	\$11	\$13	\$16	\$19	\$20	\$20	\$21	\$9	
70%	20	10,220,000	\$13	\$13	\$13	\$15	\$18	\$22	\$23	\$24	\$24	\$11	
70%	50	25,550,000	\$11	\$11	\$11	\$13	\$16	\$19	\$20	\$20	\$21	\$9	\$10
70%	100	51,100,000	\$10	\$10	\$10	\$12	\$15	\$18	\$19	\$19	\$19	\$9	
80%	20	11,680,000	\$12	\$12	\$12	\$14	\$17	\$21	\$21	\$22	\$22	\$10	
80%	50	29,200,000	\$11	\$11	\$11	\$12	\$15	\$18	\$19	\$19	\$19	\$9	\$9
80%	100	58,400,000	\$10	\$10	\$10	\$11	\$14	\$17	\$17	\$18	\$18	\$8	
90%	20	13,140,000	\$11	\$11	\$11	\$13	\$16	\$19	\$20	\$20	\$21	\$9	
90%	50	32,850,000	\$10	\$10	\$10	\$11	\$14	\$17	\$17	\$18	\$18	\$8	\$8
90%	100	65,700,000	\$9	\$9	\$9	\$10	\$13	\$16	\$16	\$17	\$17	\$8	

Impact of Critical Transmission Infrastructure Capital Costs

Capital Cost Estimates - Bill 50 Projects (2008 \$ millions)

Note: Bill Projects include all Critical Infrastructure Projects except South System Transmission Development Projects with capital costs totaling \$2,454 (2008 \$ millions)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
Edm to Calgary Transmission Reinforcement (West)						\$1,485					
Edm to Calgary Transmission Reinforcement (East)						\$1,650					
Heartland Development						\$360					
Heartland Development - 240 kV Upgrade						\$23					
Heartland Development - Upgrade Conductor								\$4			
Fort McMurray System Reinforcements (Genesee)							\$1,225				
Fort McMurray System Reinforcements (Heartland)									\$820		
South System Reinforcement for Wind Integration											
High River Area Upgrades											
South Transmission System Development											
South Transmission System Development											
South Transmission System Development											
South Transmission System Development											
South Calgary Transmission System Reinforcements					\$100						
	\$0	\$0	\$0	\$0	\$100	\$3,518	\$1,225	\$4	\$820	\$0	\$5,667

Escalation of Capital Cost Estimates from 2008 dollars to nominal "as-spent" dollars

ISD	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
2012	\$100	\$103	\$105	\$107	\$109					
2013	\$3,518	\$3,609	\$3,678	\$3,755	\$3,838	\$3,922				
2014	\$1,225	\$1,257	\$1,281	\$1,308	\$1,336	\$1,366	\$1,393			
2015	\$4	\$4	\$4	\$4	\$4	\$4	\$5	\$5		
2016	\$820	\$841	\$857	\$875	\$895	\$914	\$933	\$951	\$970	
2017	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Capital Cost Estimates (Nominal \$ millions)	\$0	\$0	\$0	\$0	\$109	\$3,922	\$1,393	\$5	\$970	\$0

Calculation of Estimated Incremental Revenue Requirement

Revenue Requirement Calculation (nominal \$ millions)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Operating expense	\$0.00	\$0.00	\$0.00	\$0.00	\$0.82	\$31.05	\$70.92	\$81.40	\$88.71	\$95.99	\$95.99	\$95.99	\$95.99	\$95.99	\$95.99	\$95.99	\$95.99	\$95.99	\$95.99	\$95.99
Depreciation	\$0.00	\$0.00	\$0.00	\$0.00	\$3.14	\$116.11	\$156.23	\$156.36	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30
Income Tax	\$0.00	\$0.00	\$0.00	\$0.00	\$1.25	\$23.72	\$54.16	\$61.49	\$66.15	\$70.79	\$69.70	\$68.61	\$67.52	\$66.44	\$65.35	\$64.26	\$63.18	\$62.09	\$61.00	\$59.91
Debt Costs	\$0.00	\$0.00	\$0.00	\$0.00	\$3.58	\$68.03	\$155.31	\$176.31	\$189.69	\$202.98	\$199.86	\$196.75	\$193.63	\$190.51	\$187.39	\$184.27	\$181.16	\$178.04	\$174.92	\$171.80
Equity Return	\$0.00	\$0.00	\$0.00	\$0.00	\$3.06	\$58.08	\$132.60	\$150.53	\$161.95	\$173.31	\$170.64	\$167.98	\$165.32	\$162.66	\$159.99	\$157.33	\$154.67	\$152.01	\$149.35	\$146.68
TOTAL	\$0.00	\$0.00	\$0.00	\$0.00	\$11.86	\$297.00	\$569.22	\$626.10	\$690.81	\$727.37	\$720.50	\$713.63	\$706.76	\$699.90	\$693.03	\$686.16	\$679.30	\$672.43	\$665.56	\$658.69

Amount in Rate Base (nominal \$ millions)

Rate Base Amount (Opening)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$105.95	\$3,912.18	\$5,149.07	\$4,997.35	\$5,783.25	\$5,598.95	\$5,414.64	\$5,230.34	\$5,046.04	\$4,861.74	\$4,677.43	\$4,493.13	\$4,308.83	\$4,124.53	\$3,940.23
Rate Base Amount (Ending)	\$0.00	\$0.00	\$0.00	\$0.00	\$105.95	\$3,915.33	\$5,268.31	\$5,272.82	\$6,215.08	\$6,215.08	\$6,215.08	\$6,215.08	\$6,215.08	\$6,215.08	\$6,215.08	\$6,215.08	\$6,215.08	\$6,215.08	\$6,215.08	\$6,215.08
Rate Base Amount - Average for Year	\$0.00	\$0.00	\$0.00	\$0.00	\$105.95	\$2,010.64	\$4,590.25	\$5,210.94	\$5,606.21	\$5,999.17	\$5,907.01	\$5,814.86	\$5,722.71	\$5,630.56	\$5,538.41	\$5,446.26	\$5,354.11	\$5,261.96	\$5,169.81	\$5,077.65

Cumulative Capital Costs (nominal \$ millions)

Beginning Capital Costs	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$109.09	\$4,031.43	\$5,424.54	\$5,429.18	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38
Ending Capital Costs	\$0.00	\$0.00	\$0.00	\$0.00	\$109.09	\$4,031.43	\$5,424.54	\$5,429.18	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38	\$6,399.38

Depreciation Calculations (nominal \$ millions)

Accumulated Depreciation - Opening	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3.14	\$119.25	\$275.47	\$431.83	\$616.14	\$800.44	\$984.74	\$1,169.04	\$1,353.35	\$1,537.65	\$1,721.95	\$1,906.25	\$2,090.55	\$2,274.86	\$2,459.16	
Annual Depreciation	\$0.00	\$0.00	\$0.00	\$0.00	\$3.14	\$116.11	\$156.23	\$156.36	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30	\$184.30
Accumulated Depreciation - Ending	\$0.00	\$0.00	\$0.00	\$0.00	\$3.14	\$119.25	\$275.47	\$431.83	\$616.14	\$800.44	\$984.74	\$1,169.04	\$1,353.35	\$1,537.65	\$1,721.95	\$1,906.25	\$2,090.55	\$2,274.86	\$2,459.16	\$2,643.46	

\$/MWh Value of the Incremental Revenue Requirement Resulting From Capital Spending

	2009	2010	2011	2012	2013	2014	2015	2016	2017
\$/MWh Incremental Revenue Requirement Amount	\$0.00	\$0.00	\$0.00	\$0.18	\$4.25	\$7.79	\$8.16	\$8.61	\$8.77

(Note: Numbers are cumulative. That is, they show the change relative to 2009 values)

Ratio of Incremental Revenue Requirement Amount to 2009 AESO Revenue Requirement Amount - Derives the Percent Increase to 2009 Rates

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Increase to 2009 AESO Revenue Requirement Amount (Increase to rates)	0%	0%	0%	1%	28%	52%	55%	58%	59%

(Note: Numbers are cumulative. That is, they show the change relative to 2009 values)

Calculation of the impact to industrial customer transmission charges

Apply Rate Increase Amount Calculated Above to the \$8.96 FortisAlberta Transmission Charge

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Forecast Customer (600KWh) Transmission Charge (\$/month)	\$8.96	\$8.96	\$8.96	\$9.07	\$11.51	\$13.64	\$13.86	\$14.13	\$14.23

Scenarios - \$ Change in Transmission Charges

	KWh	2009	2010	2011	2012	2013	2014	2015	2016	2017
Basecase - 600 KWh consumption	600	\$0.00	\$0.00	\$0.11	\$2.55	\$4.68	\$4.90	\$5.17	\$5.27	
Lower consumption - 550 KWh	550	\$0.00	\$0.00	\$0.10	\$2.34	\$4.29	\$4.49	\$4.74	\$4.83	
Higher consumption - 650 KWh	650	\$0.00	\$0.00	\$0.12	\$2.77	\$5.07	\$5.31	\$5.60	\$5.71	

Calculation of the impact to industrial customer transmission charges

Calculation of industrial customer transmission charges using current AESO rate for Direct Connect Customers as the starting point

- ◆ Please refer to the AESO Bill Calculator located on the AESO website as follows: www.aeso.ca, Tariff, Current Tariff, Tariff effective August 1, 2008, AESO Bill Estimator
- ◆ Enter inputs in column F to obtain monthly bill estimate (Nnote: For 2009, an \$89/MWh pool price is assumed)

Load Factor (%)	Capacity (MW)	2009	2010	2011	2012	2013	2014	2015	2016	2017
60%	20	\$128,000	\$128,000	\$128,000	\$129,533	\$164,478	\$194,830	\$198,019	\$201,821	\$203,242
60%	50	\$272,000	\$272,000	\$272,000	\$275,258	\$349,516	\$414,014	\$420,791	\$428,869	\$431,890
60%	100	\$501,000	\$501,000	\$501,000	\$507,001	\$643,778	\$762,578	\$775,060	\$789,939	\$795,503
70%	20	\$135,000	\$135,000	\$135,000	\$136,617	\$173,473	\$205,485	\$208,849	\$212,858	\$214,357
70%	50	\$290,000	\$290,000	\$290,000	\$293,474	\$372,646	\$441,412	\$448,638	\$457,250	\$460,471
70%	100	\$536,000	\$536,000	\$536,000	\$542,420	\$688,752	\$815,852	\$829,206	\$845,124	\$851,077
80%	20	\$142,000	\$142,000	\$142,000	\$143,701	\$182,468	\$216,140	\$219,678	\$223,895	\$225,472
80%	50	\$307,000	\$307,000	\$307,000	\$310,677	\$394,490	\$467,288	\$474,937	\$484,054	\$487,464
80%	100	\$571,500	\$571,500	\$571,500	\$578,346	\$734,369	\$869,887	\$884,126	\$901,098	\$907,445
90%	20	\$149,000	\$149,000	\$149,000	\$150,785	\$191,463	\$226,795	\$230,507	\$234,932	\$236,587
90%	50	\$325,000	\$325,000	\$325,000	\$328,893	\$417,620	\$494,686	\$502,784	\$512,435	\$516,045
90%	100	\$607,000	\$607,000	\$607,000	\$614,271	\$779,986	\$923,922	\$939,045	\$957,072	\$963,813

Calculation of the \$/MWh transmission charge

Load Factor (%)	Capacity (MW)	Consumption (MWh)	2009	2010	2011	2012	2013	2014	2015	2016	2017	Difference 2017-2	Average
60%	20	8,760,000	\$15	\$15	\$15	\$15	\$19	\$22	\$23	\$23	\$23	\$9	
60%	50	21,900,000	\$12	\$12	\$12	\$13	\$16	\$19	\$19	\$20	\$20	\$7	\$8
60%	100	43,800,000	\$11	\$11	\$11	\$12	\$15	\$17	\$18	\$18	\$18	\$7	
70%	20	10,220,000	\$13	\$13	\$13	\$13	\$17	\$20	\$20	\$21	\$21	\$8	
70%	50	25,550,000	\$11	\$11	\$11	\$11	\$15	\$17	\$18	\$18	\$18	\$7	\$7
70%	100	51,100,000	\$10	\$10	\$10	\$11	\$13	\$16	\$16	\$17	\$17	\$6	
80%	20	11,680,000	\$12	\$12	\$12	\$12	\$16	\$19	\$19	\$19	\$19	\$7	
80%	50	29,200,000	\$11	\$11	\$11	\$11	\$14	\$16	\$16	\$17	\$17	\$6	\$6
80%	100	58,400,000	\$10	\$10	\$10	\$10	\$13	\$15	\$15	\$15	\$16	\$6	
90%	20	13,140,000	\$11	\$11	\$11	\$11	\$15	\$17	\$18	\$18	\$18	\$7	
90%	50	32,850,000	\$10	\$10	\$10	\$10	\$13	\$15	\$15	\$16	\$16	\$6	\$6
90%	100	65,700,000	\$9	\$9	\$9	\$9	\$12	\$14	\$14	\$15	\$15	\$5	

Impact of Critical Transmission Infrastructure Capital Costs

Capital Cost Estimates - Critical Transmission Infrastructure (2008 \$ millions)										
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Critical Transmission Infrastructure										
Edm to Calgary Transmission Reinforcement (West)						\$1,485				
Edm to Calgary Transmission Reinforcement (East)						\$1,650				
Heartland Development						\$360				
Heartland Development - 240 KV Upgrade						\$23				
Heartland Development - Upgrade Conductor								\$4		
Fort McMurray System Reinforcements (Genesee)							\$1,225			
Fort McMurray System Reinforcements (Heartland)									\$820	
South System Reinforcement for Wind Integration							\$900			
High River Area Upgrades					\$550					
South Transmission System Development					\$371					
South Transmission System Development					\$25					
South Transmission System Development								\$218		
South Transmission System Development										\$390
South Calgary Transmission System Reinforcements					\$100					
Transmission to renewable and low-emission energy zones										
Northwest transmission system reinforcements								\$500		
Northeast transmission system reinforcements										\$1,400
Bulk transmission projects currently underway										
Various			\$448	\$122						
Long-term regional transmission plan										
South region				\$205						
Calgary region		\$42	\$20	\$20	\$73	\$31	\$17			\$45
Central region		\$203				\$125				\$636
Edmonton region	\$3	\$21	\$42					\$130		\$655
Northeast region		\$35		\$50		\$105	\$30			\$683
Northwest region				\$479	\$50		\$172			
	\$3	\$301	\$510	\$876	\$1,169	\$3,779	\$2,344	\$852	\$820	\$3,809
										\$14,463

Escalation of Capital Cost Estimates from 2008 dollars to nominal "as-spent" dollars										
ISD	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
2008	\$3									
2009	\$301	\$309								
2010	\$510	\$523	\$533							
2011	\$876	\$899	\$916	\$935						
2012	\$1,169	\$1,199	\$1,222	\$1,248	\$1,275					
2013	\$3,779	\$3,877	\$3,951	\$4,034	\$4,123	\$4,213				
2014	\$2,344	\$2,405	\$2,451	\$2,502	\$2,557	\$2,613	\$2,666			
2015	\$852	\$874	\$891	\$909	\$929	\$950	\$969	\$988		
2016	\$820	\$841	\$857	\$875	\$895	\$914	\$933	\$951	\$970	
2017	\$3,809	\$3,908	\$3,982	\$4,066	\$4,155	\$4,247	\$4,332	\$4,418	\$4,507	\$4,597
Capital Cost Estimates (Nominal \$ millions)	\$3	\$309	\$533	\$935	\$1,275	\$4,213	\$2,666	\$988	\$970	\$4,597

Calculation of Estimated Incremental Revenue Requirement

Revenue Requirement Calculation (nominal \$ millions)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027		
Operating expense	\$0.02	\$2.36	\$8.68	\$19.69	\$36.27	\$77.43	\$129.02	\$156.43	\$171.12	\$212.87	\$247.35	\$247.35	\$247.35	\$247.35	\$247.35	\$247.35	\$247.35	\$247.35	\$247.35	\$247.35	\$247.35	
Depreciation	\$0.09	\$8.98	\$24.34	\$51.27	\$88.00	\$209.34	\$286.11	\$314.57	\$342.52	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91
Income Tax	\$0.03	\$1.80	\$6.63	\$14.99	\$27.51	\$58.66	\$97.55	\$117.25	\$126.79	\$156.83	\$181.15	\$178.35	\$175.54	\$172.74	\$169.94	\$167.14	\$164.34	\$161.54	\$158.73	\$155.93		
Debt Costs	\$0.10	\$5.17	\$19.01	\$42.98	\$78.88	\$168.20	\$279.73	\$336.23	\$363.56	\$449.71	\$519.44	\$511.41	\$503.38	\$495.34	\$487.31	\$479.27	\$471.24	\$463.20	\$455.17	\$447.14		
Equity Return	\$0.08	\$4.42	\$16.23	\$36.69	\$67.35	\$143.61	\$238.83	\$287.07	\$310.41	\$383.96	\$443.50	\$436.64	\$429.78	\$422.92	\$416.06	\$409.20	\$402.34	\$395.48	\$388.62	\$381.76		
TOTAL	\$0.33	\$22.73	\$74.87	\$165.62	\$298.01	\$657.23	\$1,031.25	\$1,211.55	\$1,314.40	\$1,678.28	\$1,866.34	\$1,848.65	\$1,830.95	\$1,813.26	\$1,795.56	\$1,777.87	\$1,760.17	\$1,742.47	\$1,724.78	\$1,707.08		

Amount in Rate Base (nominal \$ millions)

Rate Base Amount (Opening)	\$0.00	\$2.91	\$302.76	\$811.62	\$1,695.44	\$2,882.75	\$6,886.74	\$9,266.30	\$9,940.03	\$10,567.72	\$14,689.67	\$14,214.76	\$13,739.86	\$13,264.95	\$12,790.04	\$12,315.14	\$11,840.23	\$11,365.33	\$10,890.42	\$10,415.52
Rate Base Amount (Ending)	\$2.91	\$302.85	\$820.69	\$1,728.85	\$2,967.42	\$7,059.41	\$9,648.31	\$10,608.15	\$11,550.41	\$16,014.88	\$16,014.88	\$16,014.88	\$16,014.88	\$16,014.88	\$16,014.88	\$16,014.88	\$16,014.88	\$16,014.88	\$16,014.88	\$16,014.88
Rate Base (Average of beginning and ending)	\$2.91	\$152.88	\$561.73	\$1,270.24	\$2,331.43	\$4,971.08	\$8,267.53	\$9,937.23	\$10,745.22	\$13,291.30	\$15,352.27	\$15,114.82	\$14,877.37	\$14,639.91	\$14,402.46	\$14,165.01	\$13,927.55	\$13,690.10	\$13,452.65	\$13,215.20

Cumulative Capital Costs (nominal \$ millions)

Beginning Capital Costs	\$0.00	\$3.00	\$311.83	\$845.03	\$1,780.11	\$3,055.41	\$7,268.75	\$9,934.42	\$10,922.72	\$11,892.93	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78
Ending Capital Costs	\$3.00	\$311.83	\$845.03	\$1,780.11	\$3,055.41	\$7,268.75	\$9,934.42	\$10,922.72	\$11,892.93	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78	\$16,489.78

Depreciation Calculations (nominal \$ millions)

Accumulated Depreciation - Opening	\$0.00	\$0.09	\$9.07	\$33.40	\$84.67	\$172.67	\$382.01	\$668.12	\$982.69	\$1,325.21	\$1,800.11	\$2,275.02	\$2,749.93	\$3,224.83	\$3,699.74	\$4,174.64	\$4,649.55	\$5,124.45	\$5,599.36	\$6,074.27
Annual Depreciation	\$0.09	\$8.98	\$24.34	\$51.27	\$88.00	\$209.34	\$286.11	\$314.57	\$342.52	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91	\$474.91
Accumulated Depreciation - Ending	\$0.09	\$9.07	\$33.40	\$84.67	\$172.67	\$382.01	\$668.12	\$982.69	\$1,325.21	\$1,800.11	\$2,275.02	\$2,749.93	\$3,224.83	\$3,699.74	\$4,174.64	\$4,649.55	\$5,124.45	\$5,599.36	\$6,074.27	\$6,549.17

\$/MWh Value of the Incremental Revenue Requirement Resulting From Capital Spending

	2009	2010	2011	2012	2013	2014	2015	2016	2017
\$/MWh Incremental Revenue Requirement Amount	\$0.40	\$1.26	\$2.65	\$4.49	\$9.41	\$14.12	\$15.80	\$16.38	\$20.24

(Note: Numbers are cumulative. That is, they show the change relative to 2009 values)

Ratio of Incremental Revenue Requirement Amount to 2009 AESO Revenue Requirement Amount - Derives the Percent Increase to 2009 Rates

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Increase to 2009 AESO Revenue Requirement Amount (Increase to rates)	3%	8%	18%	30%	63%	95%	106%	110%	136%

(Note: Numbers are cumulative. That is, they show the change relative to 2009 values)

Calculation of the impact to residential customer transmission charges

Apply Rate Increase Amount Calculated Above to the \$8.96 FortisAlberta Transmission Charge

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Forecast Customer (600KWh) Transmission Charge (\$/month)	\$9.20	\$9.71	\$10.55	\$11.66	\$14.61	\$17.44	\$18.44	\$18.79	\$21.11

Scenarios - \$ Change in Transmission Charges

	KWh	2009	2010	2011	2012	2013	2014	2015	2016	2017
Basecase - 600 KWh consumption	600		\$0.52	\$1.35	\$2.46	\$5.41	\$8.24	\$9.25	\$9.59	\$11.91
Lower consumption - 550 KWh	550		\$0.47	\$1.24	\$2.25	\$4.96	\$7.55	\$8.48	\$8.79	\$10.92
Higher consumption - 650 KWh	650		\$0.56	\$1.46	\$2.66	\$5.86	\$8.92	\$10.02	\$10.39	\$12.91

Calculation of the impact to industrial customer transmission charges

Calculation of industrial customer transmission charges using current AESO rate for Direct Connect Customers as the starting point

- Please refer to the AESO Bill Calculator located on the AESO website as follows: www.aeso.ca, Tariff, Current Tariff, Tariff effective August 1, 2008, AESO Bill Estimator
- Enter inputs in column F to obtain monthly bill estimate (Nnote: For 2009, an \$89/MWh pool price is assumed)

Load Factor (%)	Capacity (MW)	2009	2010	2011	2012	2013	2014	2015	2016	2017
60%	20	\$128,000	\$138,782	\$150,705	\$166,538	\$208,723	\$249,075	\$263,494	\$268,459	\$301,609
60%	50	\$272,000	\$294,912	\$320,248	\$353,894	\$443,536	\$529,285	\$559,924	\$570,474	\$640,919
60%	100	\$501,000	\$543,201	\$589,869	\$651,841	\$816,954	\$974,896	\$1,031,330	\$1,050,764	\$1,180,517
70%	20	\$135,000	\$146,372	\$158,947	\$175,646	\$220,137	\$262,696	\$277,903	\$283,140	\$318,103
70%	50	\$290,000	\$314,428	\$341,441	\$377,313	\$472,888	\$564,311	\$596,978	\$608,226	\$683,333
70%	100	\$536,000	\$581,149	\$631,077	\$697,379	\$874,027	\$1,043,002	\$1,103,380	\$1,124,170	\$1,262,988
80%	20	\$142,000	\$153,961	\$167,188	\$184,753	\$231,552	\$276,318	\$292,313	\$297,821	\$334,598
80%	50	\$307,000	\$332,860	\$361,456	\$399,432	\$500,609	\$597,391	\$631,973	\$643,881	\$723,390
80%	100	\$571,500	\$619,640	\$672,874	\$743,568	\$931,915	\$1,112,082	\$1,176,458	\$1,198,626	\$1,346,637
90%	20	\$149,000	\$161,551	\$175,430	\$193,861	\$242,966	\$289,939	\$306,723	\$312,503	\$351,092
90%	50	\$325,000	\$352,376	\$382,649	\$422,851	\$529,960	\$632,417	\$669,027	\$681,633	\$765,804
90%	100	\$607,000	\$658,130	\$714,671	\$789,756	\$989,803	\$1,181,161	\$1,249,536	\$1,273,081	\$1,430,287

Calculation of the \$/MWh transmission charge

Load Factor (%)	Capacity (MW)	Consumption (MWh)	2009	2010	2011	2012	2013	2014	2015	2016	2017	Difference 2017-20C	Average
60%	20	8,760,000	\$15	\$16	\$17	\$19	\$24	\$28	\$30	\$31	\$34	\$20	
60%	50	21,900,000	\$12	\$13	\$15	\$16	\$20	\$24	\$26	\$26	\$29	\$17	\$17
60%	100	43,800,000	\$11	\$12	\$13	\$15	\$19	\$22	\$24	\$24	\$27	\$16	
70%	20	10,220,000	\$13	\$14	\$16	\$17	\$22	\$26	\$27	\$28	\$31	\$18	
70%	50	25,550,000	\$11	\$12	\$13	\$15	\$19	\$22	\$23	\$24	\$27	\$15	\$16
70%	100	51,100,000	\$10	\$11	\$12	\$14	\$17	\$20	\$22	\$22	\$25	\$14	
80%	20	11,680,000	\$12.16	\$13.18	\$14.31	\$15.82	\$19.82	\$23.66	\$25.03	\$25.50	\$28.65	\$16.49	
80%	50	29,200,000	\$11	\$11	\$12	\$14	\$17	\$20	\$22	\$22	\$25	\$14	\$15
80%	100	58,400,000	\$10	\$11	\$12	\$13	\$16	\$19	\$20	\$21	\$23	\$13	
90%	20	13,140,000	\$11	\$12	\$13	\$15	\$18	\$22	\$23	\$24	\$27	\$15	
90%	50	32,850,000	\$10	\$11	\$12	\$13	\$16	\$19	\$20	\$21	\$23	\$13	\$14
90%	100	65,700,000	\$9	\$10	\$11	\$12	\$15	\$18	\$19	\$19	\$22	\$13	