Generator System Contribution Policy

System Contribution Values For 2008 and 2009

July 31, 2007

Contents

Introduction

In August 2004, the Transmission Regulation (AR 174/2004) outlined a number of provisions regarding transmission development for Alberta including details on contributions to be paid by new generators interconnecting to the Alberta Interconnected Electric System (AIES). The Transmission Regulation was revised in April 2007 (AR 86/2007), and minimal changes were introduced to Part 5 which identifies the continued provision of a generating unit owner's contribution. The System Contribution Policy described in this document incorporates changes required by the 2007 Transmission Regulation.

The contribution comprises the following:

1. "Local Contribution" being the local connection costs as defined by the ISO, plus
2. "System Contribution" being the sum of the following:
   (a) $10,000/MW for upgrades to existing transmission facilities;
   (b) $0 to $40,000/MW payable by generators that locate in an area of the transmission system where generation exceeds load. The amount of the charge is to be determined based on the location of the generating unit relative to load.
3. The System Contribution, 2 (a) and (b), are refunded over not more than 10 years from the date the generating unit begins to generate electric energy for commercial purposes, subject to satisfactory operation of the generating unit determined under ISO Rules.

The contribution policy framework provided by the regulation does not apply to generators connected to the transmission system before January 1, 2006, or to a generating unit that has a capacity of 1 MW or less.

In compliance with the 2004 Transmission Regulation, the Alberta Electric System Operator (AESO) filed in its 2005/2006 GTA the necessary terms and conditions regarding the application and refund of the System Contribution, and initiated the development of an ISO Rule regarding the generator annual performance criteria through the ISO Rules process.

The Alberta Energy and Utilities Board (EUB) issued Decision 2005-096 on August 28, 2005 in relation to the AESO's 2005/2006 General Tariff Application. This decision approved the necessary terms and conditions for the application of the Customer and System Contribution Policy for new generation projects, in Article 9 of the AESO's 2006 terms and conditions of System Access Service. ISO Rule 9.5 relating to the generator annual performance criteria for refund of System Contributions was approved through the ISO Rule process, and became effective on September 29, 2005.

The AESO is issuing updated System Contribution values for the years 2008 and 2009 to reflect changes to the Alberta Interconnected Electric System (AIES). The zonal and inter-zonal calculations, the principles used to define the contribution zones, data requirements, and application provisions continue to adhere to the methodology discussed during the AESO's 2005/2006 GTA. To ensure the System Contribution observes the previously discussed principles, the AESO has changed the current number of System Contribution zones from seven to five. The following sections outline the rationale for the change, along with the new System Contribution values for 2008 and 2009.

System Contribution Zones

In preparing the 2008 and 2009 System Contribution values, the AESO reviewed the principles used to define the original System Contribution zones to ensure consistency with those principles and the intent stated in the Regulation.

The “Area Definition” principles that assisted in the development of the original System Contribution “area” boundaries stated that zones should:

1. reflect current and emerging generation basins;
2. reflect current and emerging load centres;
3. reflect, as much as possible, how the AESO will study and plan for transmission system development; and
4. be geographically broad.

The AESO also noted that along with these principles the AESO relied on the AESO’s 10-Year Transmission System Plan along with the planning practices outlined in the AESO’s Southwest and Edmonton-Calgary system reinforcement applications in the development of the seven System Contribution zones utilized for the 2006-2007 values. The seven zones *were* as follows:

- Northwest;
- Northeast;
- Edmonton;
- Central;
- East;
- Calgary; and
- Southwest.

On March 8, 2007, the AESO published its 10-year Transmission System Plan for 2007-2016. Of note is that some of the principles and planning considerations discussed in the earlier 10-Year Transmission System Plan for 2005–2014, which were used in the original System Contribution zone definition have changed in the new 2007-2016 plan. To ensure the System Contribution policy adheres to the principle of reflecting how the AESO will study and plan for transmission system development, revisions to the System Contribution zones established in 2006 were required.

The information and forecasts from the 10-Year Transmission System Plan for 2007-2016 support the Generator System Contribution zone determination and related contribution calculation. For further information please refer to the AESO’s “10-Year Transmission System Plan 2007-2016” which can be found on the AESO’s website at www.aeso.ca by following the path Transmission ► Planning ►10-Year Plan.

2007-2016 10-Year Plan Cut-Plane Summary

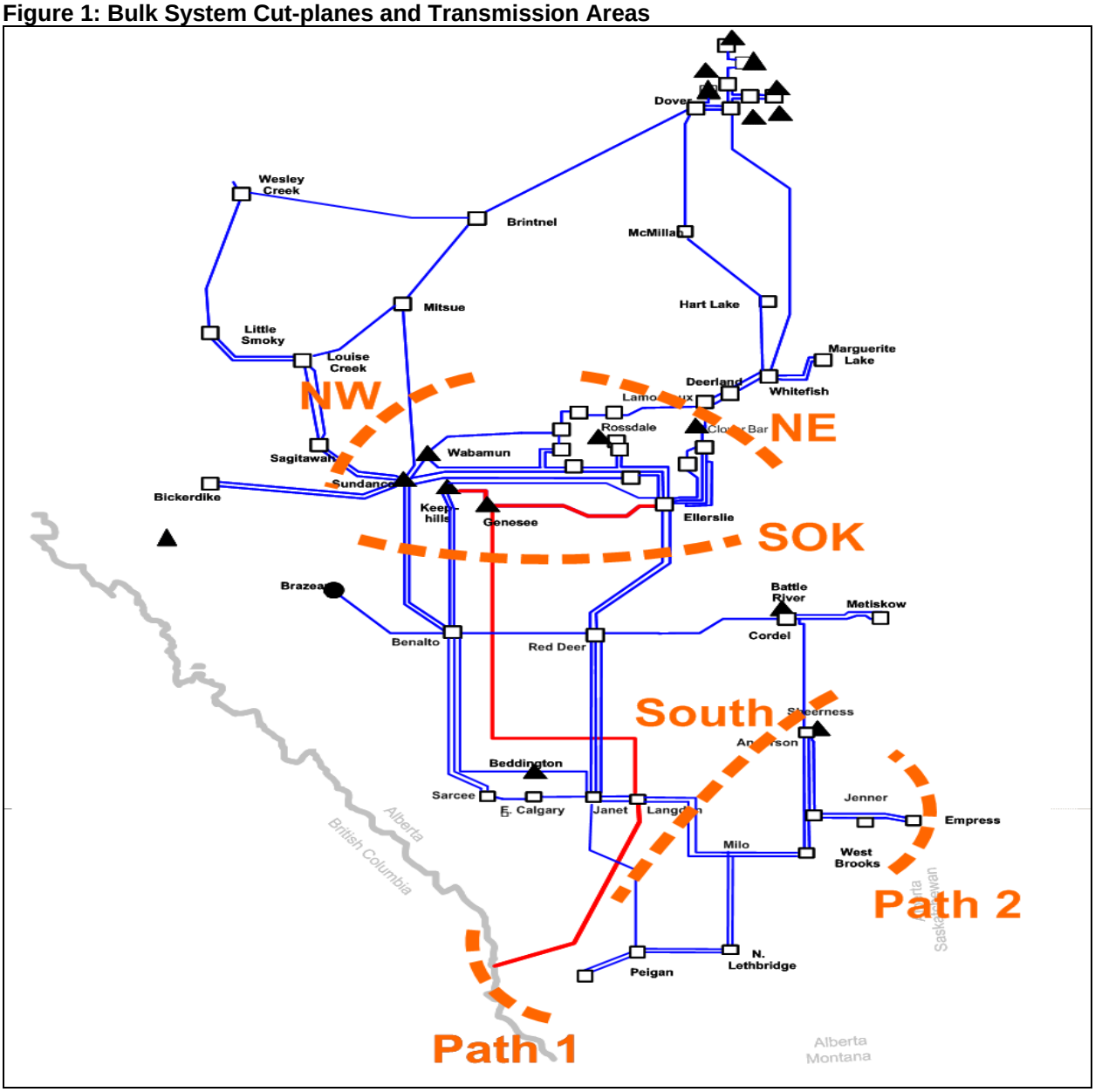
The 10-Year Plan outlines proposed transmission developments for the AIES along with the supporting rationale. The 2007-2016 10-Year Plan also discusses planning considerations from both a bulk system and a regional perspective. The bulk system is the integrated system of transmission lines and substations that delivers electric power from major generating stations to load centres. The bulk transmission system may be thought of as moving power from

generation surplus regions in Alberta to load regions. The bulk system also provides support between the regions during various contingencies and special operating conditions.

The bulk system is studied using several transmission “cut-planes”. These cut-planes combine the loading on groups of transmission lines that connect two areas within the bulk system. Transmission system adequacy is tested by evaluating the impact of various system conditions and contingencies on these cut-planes. This adequacy is then evaluated based on these cut-planes under the loading conditions which most stress these circuits.

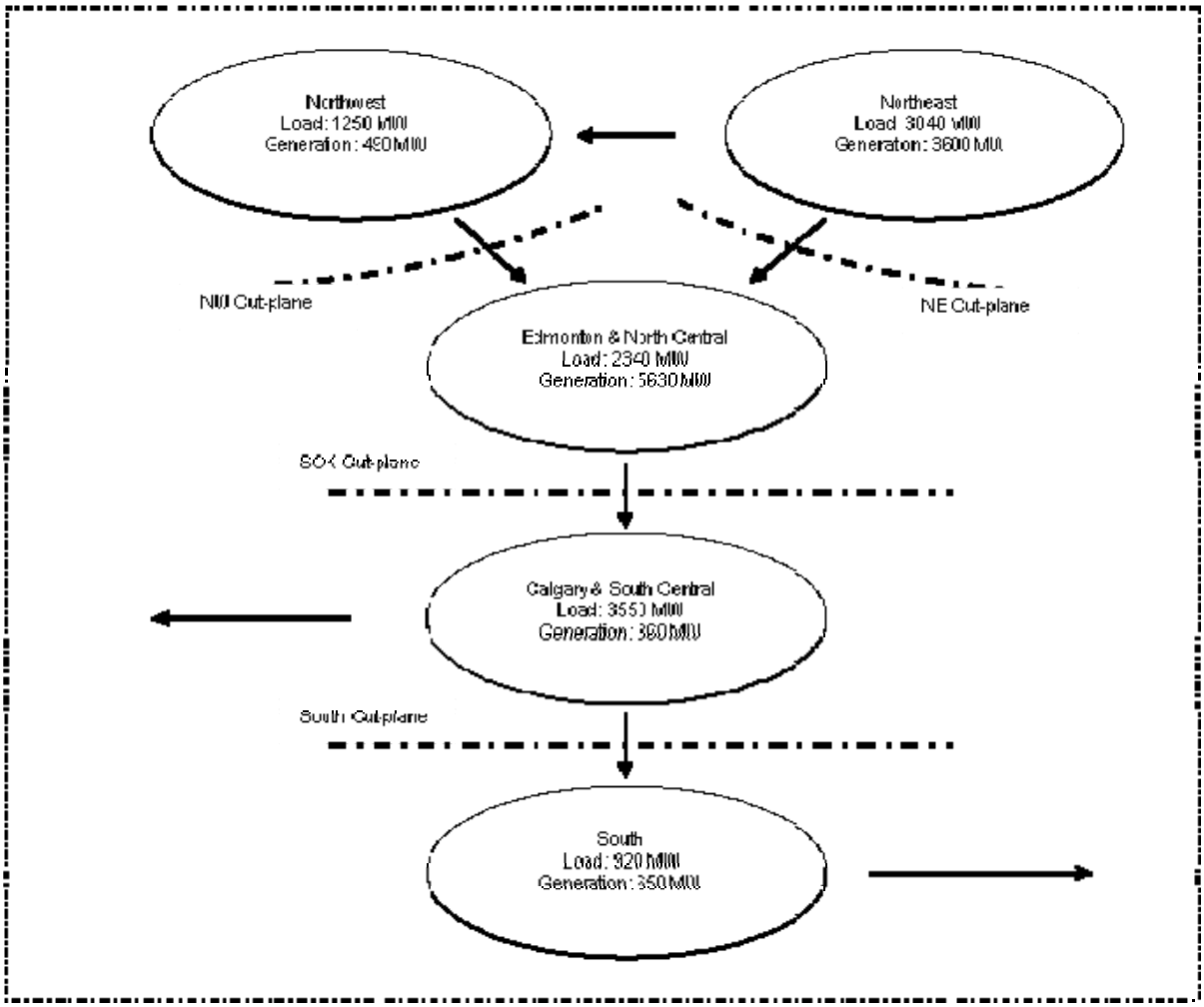
Figure 1 identifies the transmission areas and four Alberta cut-planes associated with the bulk transmission system.

Figure 1: Bulk System Cut-planes and Transmission Areas



In studying the bulk transmission system and its internal cut-planes, AESO planners divide the AIES into five major areas. Figure 2 identifies the five bulk system areas used in the 2007-2016 10-Year Plan and for the 2008 and 2009 System Contribution values. In Figure 2, the load and generation dispatched within each area are shown in the “bubbles”. The difference between the generation and the load will flow into or out of the area on the main transmission paths, indicated by the arrows.

Figure 2 - The Five Bulk System Areas



A description of the areas associated with the bulk system plan and corresponding Alberta map are provided in Appendices A and B.

The 2007-2016 10-Year Plan also discusses six planning “regions” where each regional transmission system collects power from the bulk transmission system and delivers it to local loads. The regional systems include lines and substations operating at 240 kV, 144/138 kV, and 72/69 kV. These regions are roughly defined by the cut planes used in the Bulk system analysis with the addition of Calgary as a separate region in order to adequately assess requirements local to that region.

The five areas defined by the cut-planes discussed above reflect the transfer of power between generating stations and load centres, while the six planning regions represent geographical areas that are convenient for analyzing the physical transmission system in Alberta. For determination of System Contribution values, the five areas defined by the cut-planes were considered more relevant to the consideration of "the location of the generating unit relative to load" as required by the Transmission Regulation.

Areas Where Generation Exceeds Load

The Area Contribution applies to a given area where "owners of generating units…locate in an area of the transmission system where generation exceeds load."[1] The determination of whether generation exceeds load should be based on the following principles.

It should:

1. be calculated in a simple and transparent manner;
2. be stable and predictable;
3. be based on the generation installed and committed to be installed (net to grid) in the area and the forecast load developments (net from grid) in an area over a reasonable timeframe;
4. reasonably account for a range of operational patterns; and
5. reasonably account for the transition of an area from net import to net export.

Given these principles, the AESO included generation capacity based on current STS contracts, with adjustments for capacity additions, generator upgrades, and retirements through to 2011. Where these values are greater than the coincident area peak load forecasts (non-coincident with system peak) within each planning area, the area is defined as demonstrating generation in excess of load.

Zonal and Inter-Zonal Calculation

In order to recognize that an area may evolve from being a net importer of electricity to a net exporter, the AESO applies a zonal factor as part of the derivation of the area contribution. Additionally, an inter-zonal factor was developed to approximate the relative magnitude of transporting energy from the generation area to the net load areas.

The area contributions are meant to vary based on location in Alberta. The sum of the specific zonal and inter-zonal factors is multiplied by the $40,000/MW threshold (specified in the Transmission Regulation) to arrive at each area contribution. The following information was used to derive the zonal and inter-zonal factors.

The calculation of zonal and inter-zonal factors is consistent with the methodology discussed in the "Generator System Contribution Policy Recommendations" included in the AESO's 2006 General Tariff Application (which can be found on the AESO's website at www.aeso.ca by following the path Tariff ► Previous Applications ► 2006 Tariff Application ►2005-01-31 Appendix D – Generator Contribution Policy),

[1] 2007 Transmission Regulation, Section 29(2)(b).

Zonal factor

Zonal factors are calculated by dividing the committed generation in each zone, by the forecast peak load for each zone. A zonal factor of zero is applied where generation is less than or equal to load in an area, a factor of zero to 0.33, on a linear basis, where generation is greater than load in an area up to twice the load, and a factor of 0.33 where generation is greater than twice the load in an area. These factors recognize that an area once intended to serve load can generally absorb enough generation in the area to match the load up to 100% before improvements may be required to the transmission system to accommodate exporting energy out of the area.

Zone	Peak Load*	Committed Generation	Generation ÷ Load	Zonal Factor
South	943 MW	1,986 MW	2.11	0.3333
Calgary	3,580 MW	2,615 MW	0.73	-
Edmonton	2,176 MW	5,229 MW	2.40	0.3333
Northeast	1,384 MW	3,469 MW	2.51	0.3333
Northwest	1,206 MW	635 MW	0.53	-
TOTAL	**9,289 MW**	**13,934 MW**		

* Forecast 2011 Peak Load

Inter-zonal factor

The inter-zonal factor is determined using a number of variables. The calculation considers load growth in an area, distance between areas, and path adjustments.

Significant load centres

The AESO acknowledges the capability of the existing transmission system by using forecast load growth in establishing “generation location relative to load”. Similar to the Transmission Development Policy Paper of November 2003, the AESO uses physical distance from a central point in each area to determine the relative impact in respect of load growth in net load areas. The central point in each area is a location nearest the major load centres in the area. The proposed central points are identified in the table below:

Contribution Area	Load Centre	Explanation
South	Lethbridge	Lethbridge is the most significant load centre in the area
Calgary	Calgary	Calgary is the most significant load centre in the area
Edmonton	East Edmonton	Edmonton is the most significant load centre in the area.
Northeast	Fort McMurray	Fort McMurray is the most significant load centre in the area
Northwest	Valleyview	Valleyview is roughly equidistant between the major load centres in Swan Hills

Physical distances

The physical distance is the distance in kilometers between each of the central points identified above.

Forecast load growth

The forecast average for the 5-year period beginning in the first year the inter-zonal factors are in effect is used to determine net load growth in each area.

Dominant Path Adjustments

Dominant path adjustments are applied, in order to broadly account for the impact that generation development in an area has on system flows. Dominant path flows are recognized in the distance component of the contribution calculation.

A qualitative assessment was performed to recognize dominant path flows in the distance component of the System Contribution calculation. The rules in making adjustments to dominant path flows are:

1. Load growth in net load areas will be considered in distance calculations.
2. Net load areas adjacent to a specific net generation area will be considered in distance calculations.
3. Net load areas not adjacent to specific net generation areas will be considered in distance calculations where the flow from the area is concurrent with a dominant path flow.

Load growth in net generation areas has not been considered in the distance calculations in order to simplify the calculations and avoid the need for a more sophisticated analysis.

Each load area in respect of each generation area is assigned a “Dominant Path Adjustment” value of one (“1”) where all three rules have been met and zero (“0”) where one or more are not met. A dominant path adjustment table is provided in Appendix C.

Inter-zonal factor calculation

The inter-zonal factor for each area is calculated considering each of these variables. It is determined by multiplying the physical distance of each area by the forecast peak load growth, and then multiplied by the dominant path adjustment. The calculations for the inter-zonal factors are provided in Appendix C.

System Contribution Values

The values calculated for the zonal and inter-zonal factors for each area are used to determine System Contribution values for each area. The System Contribution is the sum of $10,000/MW (base contribution amount) for upgrades to existing transmission facilities and $0/MW to $40,000/MW (area contribution amount) payable in areas where generation exceeds load. The detailed calculations of the factors and System Contribution values are provided in Appendix C.

The System Contribution factors will be in effect for two-year periods. The System Contribution factors provided below apply for 2008 and 2009.

System Contribution Amounts for 2008-2009

Area	System Contribution Factor	Area Contribution $/MW	Base Contribution $/MW	Total System Contribution $/MW
Northwest	0.0000	$ 0	$10,000	**$10,000**
Northeast	1.0000	40,000	10,000	**50,000**
Edmonton	0.5619	22,500	10,000	**32,500**
Calgary	0.0000	0	10,000	**10,000**
South	0.4522	18,100	10,000	**28,100**

For comparison, the System Contribution Amounts for 2006-2007 are provided in Appendix D.

The area contribution — the first component of the System Contribution — is simply $40,000/MW multiplied by the System Contribution factor, which is greater than zero only in areas where generation exceeds load and which varies based on the location of generation with respect to load. The base contribution — the second component of the System Contribution — is the $10,000/MW amount specified by section 29(2)(a) of the 2007 Transmission Regulation.

The following table demonstrates the resulting System Contributions for two generators with different capacities, for each area:

	System Contribution	180 MW generator	400 MW generator
South	$ 28,100/MW	$ 5.06 m	$ 11.24 m
Calgary	$ 10,000/MW	$ 1.80 m	$ 4.00 m
Edmonton	$ 32,500/MW	$ 5.85 m	$ 13.00 m
Northeast	$ 50,000/MW	$ 9.00 m	$ 20.00 m
Northwest	$ 10,000/MW	$ 1.80 m	$ 4.00 m

Payment of Contribution

In Decision 005-096, the EUB indicated that:

> *"…all costs, either customer contribution or System Contribution, should be paid prior to the start of the commencement of activities related to the construction of any new transmission facilities necessary to provide the requested service."*

The System Contribution payment will be due once the EUB has issued the permit and license for the local interconnection facilities to the Transmission Facility Owner (TFO) in respect of the generator. Where no local facilities are required to serve a new generating unit, the System Contribution payment will be due upon execution of the System Access Service Agreement

(SASA). The SASA will only be executed once it has been determined by the AESO that there is sufficient transmission capacity to accommodate the request, as per Article 13 of the AESO terms and conditions of System Access Service.

The System Contribution must be paid within 90 days of issue of the permit and license for the local interconnection (or within 90 days of SASA execution where no local facilities are required). In situations where the System Contribution is not paid within the 90-day period, the AESO may deem it appropriate to terminate the customer's SASA, or allow other customer projects to proceed ahead of the customer that has not met its System Contribution obligation.

Where local facilities are required, construction will not commence until the System Contribution has been paid. In the event a construction delay due to non-payment of a System Contribution results in a delay to the Commercial Operation date of the generating unit, such delay shall not be considered attributable to matters for which the AESO or the TFO is reasonable accountable for the purposes of paragraph 9.12(b) of the AESO terms and conditions.

Where an interconnection project involves sub-projects (that is, multiple phases of capacity are being considered), the generator System Contribution associated with facilitating the primary interconnection is due prior to construction. Where a customer wishes to add supply capacity at a second or subsequent phase, an additional generator System Contribution amount will be incurred for each phase based on the increased capacity of the phase. Each sub-project will be metered separately, to facilitate the monitoring of performance and subsequent refund eligibility.

Other Considerations

Section 29(4) of the 2007 Transmission Regulation provides for the refund of the System Contribution over a period of not more than 10 years from the date the generating unit begins to generate electric energy for the purpose of exchange but not for the purpose of testing or commissioning the unit, subject to satisfactory operation of the generating unit.

(4) The ISO tariff must include terms and conditions providing for the following:
- *(a) the refund of money paid under this section, to the owner who paid it, over a period of not more than 10 years from the date the generating unit begins to generate electric energy for the purpose of exchange but not for the purpose of testing or commissioning the unit, subject to satisfactory operation of the generating unit determined under rules made under subsection (5), where satisfactory operation may vary by generation type;*
- *(b) forfeiture to the ISO of money paid under this section, or suspension of the refunds, if the generating unit is not operated satisfactorily;*
- *(c) the means and times at which the refunds are to be made;*
- *(d) the prudent administration, management and investment of money held by the ISO under this section and for the accounting for those funds;*
- *(e) the disbursement of money earned on investments.*

The AESO will administer the refund of System Contributions on a calendar year basis and will prorate the refund and satisfactory performance criteria if commercial operation does not take place on January 1.

The 2004 Transmission Regulation provided for the refund of money over a period of not more than 10 years from the date *it was paid* (rather than the date the generating unit begins to generate commercially), and this period is reflected in the AESO terms and conditions of System Access Service approved effective January 1, 2006. The AESO notes that 10 years from the date the System Contribution was paid will always be within 10 years from the date the generating unit begins operating, and therefore does not contravene the 2007 Transmission Regulation. However, the AESO plans to consult with stakeholders and file for an appropriate revision of its terms and conditions to reflect the revised regulation, as part of a future tariff application or as a separate amendment application.

Based on the approved 2006 terms and conditions of System Access Service, and subject to satisfactory annual performance, the System Contribution will be refunded in annual amounts within a maximum of 10 calendar years following the date it was paid, but not before the planned commercial operation date of the generating unit.

A base annual amount is determined for the calendar years in the refund period, and then adjusted such that 25% of the total refund is paid out over the first half of the refund period and 75% is paid out over the last half of the refund period. If the refund period constitutes an odd number of years, the mid-point year amount is the average of the first-half and second-half annual amounts.

The following table illustrates the refund structure of a $1,000,000 System Contribution to three different generators. Note that a status of “on” indicates the generator met the ISO Rules regarding satisfactory annual performance, and a status of “off” indicates the generator did not meet the ISO Rules.

Illustrative Examples of Refunds of $1,000,000 System Contributions

	Generator A		**Generator B**		**Generator C**	
Contribution	Jan 1, 2008		Jan 1, 2008		Jan 1, 2008	
Planned COD	Jan 1, 2009		Jan 1, 2009		Jan 1, 2009	
Actual COD	Jan 1, 2009		**Jan 1, 2010**		**Jan 1, 2010**	
Year	Status	Refund	Status	Refund	Status	Refund
2008	pre-COD	NA	pre-COD	NA	pre-COD	NA
2009	On	$55,556	**pre-COD**	**NA**	**pre-COD**	**NA**
2010	On	$55,556	On	$55,556	On	$55,556
2011	On	$55,556	On	$55,556	On	$55,556
2012	On	$55,556	On	$55,556	On	$55,556
2013	On	$111,111	On	$111,111	**Off**	**$0**
2014	On	$166,667	On	$166,667	**Off**	**$0**
2015	On	$166,667	On	$166,667	On	$166,667
2016	On	$166,667	On	$166,667	On	$166,667
2017	On	$166,667	On	$166,667	On	$166,667
Total		$1,000,000		$944,444		$666,667

The AESO will include any forfeited System Contribution amounts in a deferral account to be considered as an offset to revenue in a subsequent GTA.

The AESO terms and conditions of System Access Service do not provide for the payment of interest on any refund amounts.

Performance Measures

Section 29(5) of the 2007 Transmission Regulation requires the AESO to make rules to be used to assess satisfactory performance of a generating unit.

> *(5) The ISO must make rules to be used to assess the satisfactory performance of a generating unit by generating unit type.*

A summary of the three components of ISO Rule 9.5, "Annual Performance Criteria for Refund of System Contribution" is provided below. The complete rule is included in the ISO Rules on the AESO's website at www.aeso.ca, available by following the path Rules & Procedures ▶ ISO Rules ▶ Current Rules.

1. Commercial operation date

The first performance measure is for the generator to reach its commercial operation date (COD). No refunds will be provided unless the generator reaches COD. If the generator fails to reach COD within 10 years of the payment date the entire System Contribution is forfeited.

2. Annual capacity factor for generating units based on resource type

The second performance measure is for the generator to use the STS Contract Capacity provided by the AESO each year following commercial operation. The annual capacity factors are:

Performance Standard for System Contribution Refunds

Resource Type	Annual Capacity Factor
Coal	**75%**
Natural Gas — Base Load	**50%**
Natural Gas — Peaking	**10%**
Hydro	**20%**
Wind	**20%**
Biomass & Waste	**75%**

3. Under contracting penalty

To ensure that a customer does not have an incentive to under contract for their STS requirements to reduce their System Contribution, the AESO will apply an Under Contracting Penalty to the annual refund amount. The Under Contracting Penalty will reduce the annual refund on a straight-line basis from 100% refund at 110% or less of STS Capacity, to 0% refund at 125% or more of STS Capacity.

There may be circumstances where a generator is able to operate beyond its normal STS Contract Capacity (e.g. on-site load is lower than normal, on-site heat balance allows for more steam for electricity production, or lower than normal ambient temperatures allow for increased output). To facilitate these circumstances and optimal establishment of STS Contract levels,

hours where STS Contract Capacity exceeds 110% will be excluded from the Under-Contracting Penalty calculation where the generator has requested and received authorization from the AESO in accordance with Article 13.5 of the AESO's Tariff.

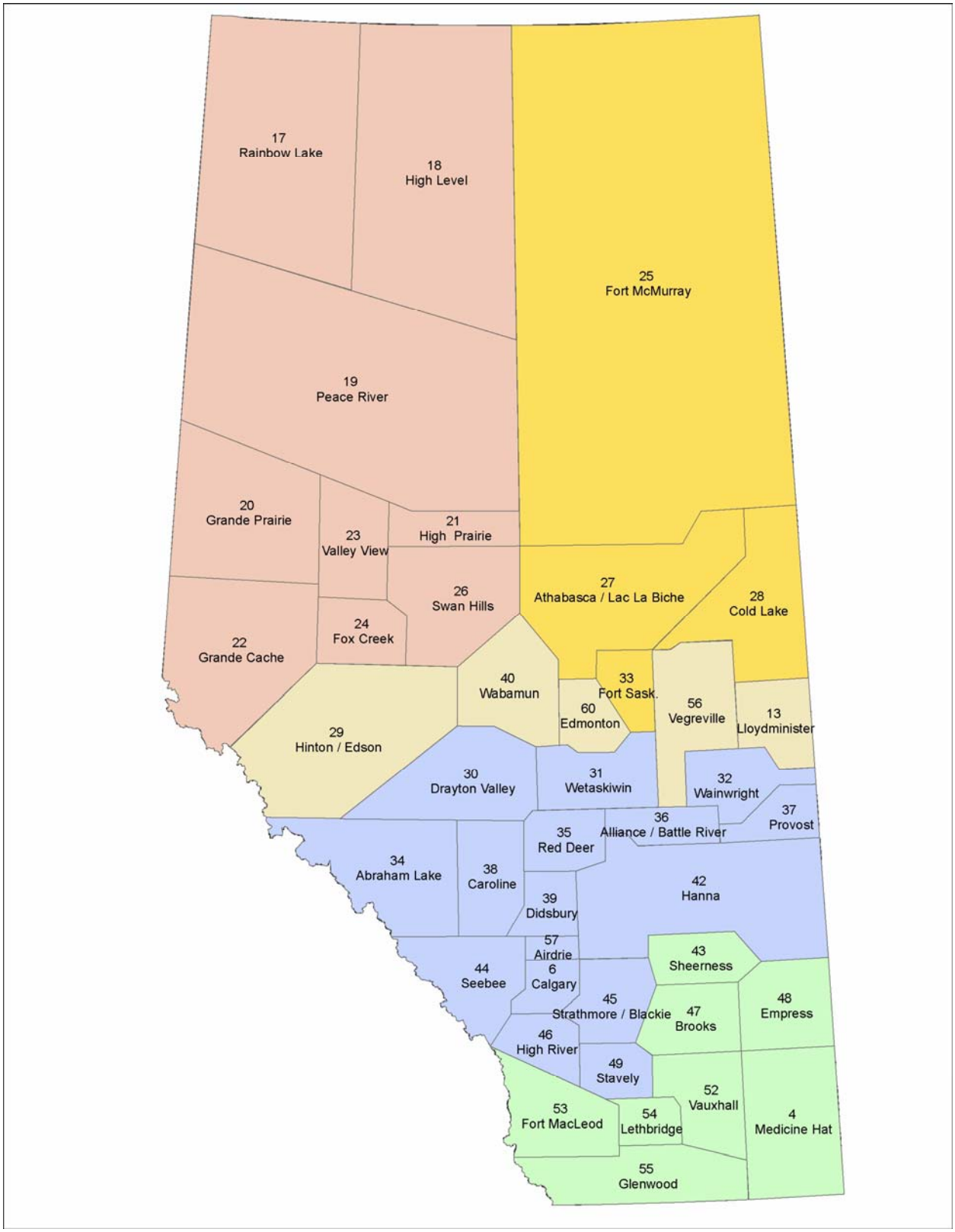
The generator must provide the AESO an annual performance report by January 31 of each year outlining its compliance with the above mentioned criteria. Upon further review by the AESO and compliance with the performance measures, refunds will be issued by February 28.

Appendix A – System Contribution Area Definitions

Area	Area Description	Planning Area #	Planning Area
Northwest	This region borders Fort McMurray and Athabasca to the east, Wabamun and Hinton to the south, British Columbia to the west and the Northwest Territories to the north. The Northwest Area continues to be generation deficient and relies heavily on imports from the Edmonton–Northwest and Ft. McMurray–Northwest paths.	17	Rainbow Lake
		18	High Level
		19	Peace River
		20	Grande Prairie
		21	High Prairie
		22	Grande Cache
		23	Valleyview
		24	Fox Creek
		26	Swan Hills
Northeast	This region borders High Level, Peace River, High Prairie, Swan Hills and Wabamun areas to the west, Edmonton, Wetaskiwin, Vegreville and Lloydminster areas to the south, Northwest Territories to the north and Saskatchewan to the east. The continued development of the oils sands in this region will create high demand from the system through the Edmonton-Northeast path.	25	Fort McMurray
		27	Athabasca/Lac La Biche
		28	Cold Lake
		33	Fort Saskatchewan
Edmonton & North Central	This region borders Grand Cache, Fox Creek, Swan Hills, Athabasca, Fort Saskatchewan and Cold Lake areas to the south, British Columbia to the west and Saskatchewan to the east. This region is the generation center and it sends a significant amount of power to the rest of the regions of the province.	13	Lloydminster
		29	Hinton/Edson
		40	Lake Wabamun Generation
		56	Vegreville
		60	Edmonton

Area	Area Description	Planning Area #	Planning Area
Calgary & South Central	This region borders Hinton, Wabamun, Edmonton, Fort Saskatchewan, Vegreville and Lloydminster to the north, Fort McLeod, Lethbridge, Vauxhall, Brooks, Sheerness and Empress to the south, British Columbia to the west and Saskatchewan to the east. This region is highly dependent on its connections to the grid to meet current demand.	6	Calgary
		30	Drayton Valley
		31	Wetaskiwin
		32	Wainwright
		34	Abraham Lake
		35	Red Deer
		36	Alliance/Battle River
		37	Provost
		38	Caroline
		39	Didsbury
		42	Hanna
		44	Seebe
		45	Strathmore/Blackie
		46	High River
		49	Stavely
		57	Airdrie
South	This region borders High River, Stavely, Strathmore and Hanna to the north, Montana to the south, British Columbia to the west and Saskatchewan to the east. This region is dependent on the output of wind generation and imports.	4	Medicine Hat
		43	Sheerness
		47	Brooks
		48	Empress
		52	Vauxhall
		53	Fort MacLeod
		54	Lethbridge
		55	Glenwood

Appendix B – Bulk System Planning Areas



Appendix C – 2008-2009 System Contribution Calculations

Zonal Factor

	Peak Load*	Committed Generation	Generation ÷ Load	Zonal Factor (ZF)
South	943	1,986	2.11	0.3333
Calgary	3,580	2,615	0.73	-
Edmonton	2,176	5,229	2.40	0.3333
Northeast	1,384	3,469	2.51	0.3333
Northwest	1,206	635	0.53	-
	9,289	13,934		

* Forecast 2011 Peak Load

Interzonal Factor

Forecast Peak Load Growth 2007 to 2012

	South	Calgary	Edmonton	Northeast	Northwest	Total
Average growth by Area	31	212	134	475	29	882
Net Load Distribution	3.5%	24.1%	15.2%	53.9%	3.3%	

Physical Distances between Areas

	To Load				
From Generation	South	Calgary	Edmonton	Northeast	Northwest
South (Lethbridge)	-	166	428	772	640
Calgary (Calgary)	166	-	280	643	474
Edmonton (East Edmonton)	428	280	-	366	283
Northeast (Fort McMurray)	772	643	366	-	406
Northwest (Valleyview)	640	474	283	406	-

Dominant Path Adjustment

	To Load				
From Generation	South	Calgary	Edmonton	Northeast	Northwest
South	-	1	-	-	-
Calgary	-	-	-	-	-
Edmonton	-	1	-	-	1
Northeast	-	1	1	-	1
Northwest	-	-	-	-	-

Interzonal Factor (Physical Distance x Forecast Peak Load Growth x Dominant Path Adjustment)

	To Load						
From Generation	South	Calgary	Edmonton	Northeast	Northwest	Total	IZF
South	-	35,205	-	-	-	35,205	0.1189
Calgary	-	-	-	-	-	-	0.0000
Edmonton	-	59,382	-	-	8,321	67,702	0.2286
Northeast	-	136,366	49,166	-	11,937	197,469	0.6667
Northwest	-	-	-	-	-	-	0.0000
						Maximum	**197,469**

System Contribution Calculation

Generation Area	Zonal Factor	Interzonal Factor	ZF + IZF	Area Contribution	Base Contribution	Total System Contribution
South	0.3333	0.1189	0.4522	$ 18,100/MW	$ 10,000/MW	**$ 28,100/MW**
Calgary	-	-	-	-	$ 10,000/MW	**$ 10,000/MW**
Edmonton	0.3333	0.2286	0.5619	$ 22,500/MW	$ 10,000/MW	**$ 32,500/MW**
Northeast	0.3333	0.6667	1.0000	$ 40,000/MW	$ 10,000/MW	**$ 50,000/MW**
Northwest	-	-	-	-	$ 10,000/MW	**$ 10,000/MW**

Appendix D – 2006-2007 Generator System Contribution Values

System Contribution Amounts for 2006-2007

Area	System Contribution Factor	Area Contribution $/MW	Base Contribution $/MW	Total System Contribution $/MW
Northwest	0.0000	$ 0	$10,000	**$10,000**
Northeast	1.0000	40,000	10,000	**50,000**
Edmonton	0.5333	21,300	10,000	**31,300**
Central	0.0000	0	10,000	**10,000**
East	0.2558	10,200	10,000	**20,200**
Calgary	0.0000	0	10,000	**10,000**
Southwest	0.2517	10,100	10,000	**20,100**

2006-2007 Regional Planning Map