

Information documents are not authoritative. Information documents are for information purposes only and are intended to provide guidance. If there is a discrepancy between an information document and any authoritative document¹ in effect, the authoritative document governs.

1 Purpose

This information document relates to the following authoritative documents:

- Rate DTS of the ISO tariff, *Demand Transmission Service* and its predecessor documents² (“Rate DTS”);
- Rate PSC of the ISO tariff, *Primary Service Credit* and its predecessor documents (“Rate PSC”);
- Rate STS of the ISO tariff, *Supply Transmission Service* and its predecessor documents (“Rate STS”);
- Rider C of the ISO tariff, *Deferral Account Adjustment Rider* and its predecessor documents (“Rider C”);
- Rider E of the ISO tariff, *Losses Calibration Factor Rider* and its predecessor documents (“Rider E”);
- Rider F of the ISO tariff, *Balancing Pool Consumer Allocation Rider* and its predecessor documents (“Rider F”); and
- Rider J of the ISO tariff, *Wind Forecasting Service Cost Recovery Rider* and its predecessor documents (“Rider J”).

The purpose of this information document is to provide market participants with a tool to estimate monthly charges for system access service pursuant to the ISO tariff rates and riders listed above.

2 Completing the Bill Estimator Calculator

2.1 General Information

The bill estimator calculator provided in Appendix 1 is an optional tool that a market participant may use to estimate monthly charges for its system access service. This section of the information document outlines instructions for market participants that choose to use this tool and, where applicable, information to assist the market participant in determining appropriate values to enter.

In Appendix 1, enter values in the cells highlighted in yellow only in the *A - Inputs and Summary* worksheet (“*A - Inputs and Summary*” sheet) and, if applicable, in the *B - Rate DTS and Riders* worksheet (“*B - Rate DTS and Riders*” sheet). The calculator uses these values to estimate the market participant’s monthly charges for system access service.

The AESO has provided messages related to the market participant and calculation preparation in the cells where values are entered. When the market participant enters values into these cells, those values will replace the default text.

When the market participant selects options from the dropdown menus in rows (a) to (h) of the *A - Inputs and Summary* sheet, its selection may cause hatched cells to open for entry in rows (i) to (aa) of the *A - Inputs and Summary* sheet and cells “F51” to “F55” of the *B - Rate and Riders* sheet.

¹ “Authoritative document” is the general name given by the AESO to categories of documents made by the AESO under the authority of the *Electric Utilities Act* and associated regulations, and that contain binding legal requirements for either market participants or the AESO, or both. Authoritative documents include: the ISO rules, the reliability standards, and the ISO tariff.

² ISO tariff section names and numbers provided are based on the 2021 ISO tariff and may differ from previous ISO tariffs.

2.2 Applicable ISO Tariff

The Rate DTS, Rate STS, and Rate PSC rates and related riders used to estimate the monthly charges for system access service are set out in the respective rate and rider sections of the ISO tariff, which are outlined in section 1 of this Appendix.

Each market participant is billed in accordance with the ISO tariff in effect at time of billing. For information purposes, the *Bill Estimator Calculator* provides the market participant with the option to estimate its bill based on previous ISO tariffs.³

In the calculator, the market participant selects the ISO tariff version from the dropdown menu of cell “K10” of *A – Inputs and Summary* sheet, which is shown in cell “K11”. The *Bill Estimator Calculator* values change based on this input, including the rates and riders used to calculate the estimated monthly charges for system access service. By default, the calculator selects the most recent ISO tariff in effect.

2.3 Estimate Details

The market participant provides details of its bill by selecting applicable choices from the dropdown menus in rows (a) to (h) of the *A – Inputs and Summary* sheet. The bill estimator calculator input cells on the *A - Inputs and Summary* sheet, as well as calculations on other Appendix 1 worksheets, change based on the market participants selections.

2.4 Billing Determinants and Riders

The market participant enters all amounts related to their billing determinants in rows (i), (k), (l), (n), (p), (q), and (u) of the *A – Inputs and Summary* sheet.

To assist the market participant in estimating its monthly charges for system access service, the average annual pool price is provided in row (s). The market participant may override the value in row (s) and input a pool price if it would like the calculator to use an alternative pool price. The AESO’s average annual pool price is also available in the AESO’s *Business Plan and Budget Proposal*⁴ for the applicable year.

If applicable, the market participant enters its location-specific loss factor in row (v) and Rider E in row (y). The annual location-specific loss factors are available in the AESO’s annual *Loss Factors* document for the applicable year.⁵ The quarterly location-specific Rider E calibration factor estimate can be found in the AESO’s quarterly *Rider E Estimate* document for the applicable quarter.⁶ Refer to subsection 4.3 in this information document below for further information about the calculation of the loss factor and calibration factor charges.

Under Rate STS of the ISO tariffs from 2014 to 2020, a regulated generating unit connection charge was included on applicable market participant bills. As a result, when the market participant selects the ISO tariff for the years 2015 to 2020, in cell “K11”, the market participant may enter the regulated generating unit portion of its Rate STS contract capacity, in MW, in row (w). These provisions are no longer needed and were removed from Rate STS in the 2021 ISO tariff. In addition, the regulated generating unit entry is not included in the bill estimate calculation for the 2021 ISO tariff.⁷

The market participant may enter amounts for Rider C in cells “F51” to “F55” of the *B – Rate and Riders* sheet. The calculator sets all the amounts for Rider C as zero by default. The quarterly Rider C charge or credit values are available in the AESO’s quarterly *Rider C Charge or Credit Calculations* document.⁸

³ Calculations for previous ISO tariffs provided include ISO tariffs from the years 2015 to 2020.

⁴ The AESO’s annual *Business Plan and Budget Proposal* documents for the years 2017 to 2022 are available on the AESO website.

⁵ The AESO’s annual *Loss Factor* documents for the years 2006 to 2022 are available on the AESO website.

⁶ The AESO’s quarterly Rider E calibration factors are found for the years 2007 to 2021 on the AESO website.

⁷ Regulated generating units can be found in Appendix A of the ISO tariffs from 2014 to 2020.

⁸ The AESO’s quarterly *Rider C Charge or Credit Calculations* documents for the years 2004 to 2022 are available on the AESO website.

3 Bill Estimate Results

After the market participant enters or selects all relevant values on the *A – Inputs and Summary* and *B – Rate and Riders* sheets, the calculator calculates and summarizes the monthly estimate of charges for system access service. The summary of the monthly estimate of charges for system access service is presented on the *A – Inputs and Summary* sheet. More detailed results of Rate DTS and associated riders, Rate PSC and associated riders, and Rate STS and associated riders can be found on the *B – Rate DTS and Riders* sheet, the Appendix 1 worksheet *C – Rate PSC and Rider* (“*C – Rate PSC and Rider*”), and Appendix 1 worksheet *D – Rate and Riders* (“*D – Rate STS and Riders*” sheet), respectively.

4 Calculator Limitations

The *Bill Estimator Calculator* estimates market participant charges differently than is calculated on a market participant’s actual monthly bill for the following 3 of the monthly charges: Rate DTS operating reserve charge; Rate DTS transmission constraint rebalancing charge, and Rate STS loss charge. For these charges, the calculator is limited in that it uses the average monthly values, or approximations, to calculate some bill charges whereas, prior to billing, the AESO calculates the charges using actual hourly values once that information is available. The difference between the *Bill Estimator Calculator* estimation and the AESO’s calculation of these charges are further described in the subsections below.

4.1 Rate DTS, Operating Reserve Charge

For each market participant with a Rate DTS contract capacity, the *Bill Estimator Calculator* approximates the operating reserve charge by using a percentage of the average annual pool price multiplied by the metered energy consumed by the market participant over the settlement period, in \$/MWh. This is different than the AESO’s determination of each market participant’s operating reserve charge which, pursuant to subsection 4(1) of Rate DTS, the AESO calculates for each hour of the settlement period.

Refer to information document #2011-004T, *Operating Reserve Charge Calculation*,⁹ for more information.

4.2 Rate DTS, Transmission Constraint Rebalancing Charge

For each market participant with a Rate DTS contract capacity, the *Bill Estimator Calculator* approximates the transmission constraint rebalancing charge by assuming a constant total transmission constraint rebalancing payment over the total metered energy for all Rate DTS and Rate FTS market participants over a settlement period, in \$/MWh. This is different than the AESO’s determination of each market participant’s transmission constraint rebalancing charge which, pursuant to subsection 5 of Rate DTS, the AESO calculates for each hour of the settlement period.

Refer to information document ID #2016-017T, *Transmission Constraint Rebalancing Charge*,¹⁰ for more information.

4.3 Rate STS, Loss Charge

For each market participant with a Rate STS contract capacity, the *Bill Estimator Calculator* approximates the losses charge by assuming a constant metered energy produced multiplied by the average pool price multiplied by a loss factor for the facility. This is different than the AESO’s determination of each market participant’s loss charge which, pursuant to subsection 2(1) of Rate STS, the AESO calculates on an hourly basis.

⁹ Available on the AESO website.

¹⁰ Available on the AESO website.

Appendix

[Appendix 1 – Bill Estimator Calculator Excel Workbook](#)

Revision History

Posting Date	Description of Change
2022-01-12	Updated Appendix 1 with 2022 rates.
2021-12-21	Administrative updates including updates and additions to ISO tariff references; moved main body of the information document out of the Excel format; and revised to information document content to align content to current AESO drafting principles.
2021-01-01	Initial release.

Information Document

ISO Tariff - Bill Estimator Calculator

ID #2022-015T



Attachment A: Inputs and Summary

Market Participant: **Name of Market Participant** Tariff: AESO 2022
 Account: **Account ID** Effective: Jan 01, 2022
 Date: **Date Prepared** To: Current

ESTIMATE DETAILS

	Choice	Relates to
(a) Is estimate for Rate DTS, Rate STS or both?	DTS Only	—
(b) Any other market participant at substation?	No	—
(c) Does Primary Service Credit apply to service?	No	Rate DTS
(d) Is this a regulated generating unit within its base life?	No	Rate STS
(e) Include Deferral Account Adjustment Rider C?	No	Rates DTS and PSC
(f) Include Losses Calibration Factor Rider E?	No	Rate STS
(g) Include Balancing Pool Consumer Allocation Rider F?	No	Rate DTS
(h) Include Wind Forecasting Service Cost Recovery Rider J?	No	Rate STS

BILLING DETERMINANTS

	Units	This Market Participant		Other
		Rate DTS	Rate STS	Participant
(i) Contract capacity:	MW	20.0	0.0	0.0
(j) Substation fraction (SF):	—	1.00000	NA	NA
(k) Highest metered demand in settlement period:	MW	20.0	0.0	
(l) Coincidence factor with 15-minute system peak:	%	75%		
(m) Coincident metered demand:	MW	15.0		
(n) Highest metered demand in previous 24 months:	MW	20.0		
(o) Billing cap'y (highest of 90%×(i), (k) or 90%×(n)):	MW	20.0		
(p) Load or capacity factor:	%	65%	50%	
(q) Hours in month:	hours	730	730	
(r) Metered energy:	MWh	9,490	0	
(s) Pool price:	\$/MWh	\$74.01	\$74.01	
(t) % of pool price for OR charge estimate:	%	4.53%		
(u) Apparent power difference (when PF < 90%):	MVA	0		
(v) Loss factor:	%	NA	3.61%	
(w) Regulated generating unit MW:	MW		0.0	
(x) Quarterly Rider C charge (credit):	%	Attachm't B		
(y) Quarterly Rider E calibrat'n factor charge (credit):	%		(0.50%)	
(z) Balancing Pool Rider F charge (credit):	\$/MWh	\$2.20		
(aa) Wind Forecasting Cost Recovery Rider J charge:	\$/MWh		\$0.08	

BILL ESTIMATES: MONTHLY

	Rate DTS	Rate PSC	Rate STS	Total
(1) Transmission service charge (credit):	\$347,302	NA	NA	\$347,302
(2) Deferral Account Adjustment Rider C:	NA	NA	—	NA
(3) Losses Calibration Factor Rider E:	—	—	NA	NA
(4) Balancing Pool Consumer Allocation Rider F:	NA	—	—	NA
(5) Wind Forecasting Service Cost Recovery Rider J:	—	—	NA	NA
(6) Total monthly charges:	\$347,302	\$0	NA	\$347,302

BILL ESTIMATES: ANNUAL (Monthly × 12)

	Rate DTS	Rate PSC	Rate STS	Total
(7) Transmission service charge (credit):	\$4,167,624	NA	NA	\$4,167,624
(8) Deferral Account Adjustment Rider C:	NA	NA	—	NA
(9) Losses Calibration Factor Rider E:	—	—	NA	NA
(10) Balancing Pool Consumer Allocation Rider F:	NA	—	—	NA
(11) Wind Forecasting Service Cost Recovery Rider J:	—	—	NA	NA
(12) Total annual charges:	\$4,167,624	\$0	NA	\$4,167,624

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 ISO Tariff - Bill Estimator Calculator
 ID #2022-015T



Attachment B: Rate DTS Bill Estimate Under 2022 ISO Tariff

Market Participant:	Name of Market Participant	Tariff:	AESO 2022
Account:	Account ID	Effective:	Jan 01, 2022
Date:	Date Prepared	To:	Current

	Billing Quantity	Reference	Volume
(j)	Substation fraction (SF)	Glossary	1.00000
(k)	Highest metered demand	Glossary	20.0 MW
(m)	Coincident metered demand	DTS:3(2)	15.0 MW
(o)	Billing capacity	Glossary	20.0 MW
(r)	Metered energy	Glossary	9,490 MWh
(s)	Pool price	Glossary	\$74.01 /MWh
(t)	% of pool price for operating reserve charge	DTS:4(2)	4.53%
(u)	Apparent power difference	DTS:7(b)	0.0 MVA

	Rate or Rider Component	Charge	Volume	Amount
Rate DTS: Demand Transmission Service				
Connection Charge				
<i>Bulk System Charge</i>				
3(1)(a)	Coincident metered demand	\$10,501.00 /MW/month	15.0 MW	\$157,515
3(1)(b)	Metered energy	\$1.15 /MWh	9,490 MWh	\$10,914
<i>Regional System Charge</i>				
3(1)(c)	Billing capacity	\$2,775.00 /MW/month	20.0 MW	\$55,500
3(1)(d)	Metered energy	\$0.87 /MWh	9,490 MWh	\$8,256
<i>Point of Delivery Charge</i>				
3(1)(e)	Substation fraction	\$14,332.00 /month	1.00000	\$14,332
3(1)(f)	First (7.5 × SF) MW of billing capacity	\$4,717.00 /MW/month	7.5 MW	\$35,378
3(1)(g)	Next (9.5 × SF) MW of billing capacity	\$2,797.00 /MW/month	9.5 MW	\$26,572
3(1)(h)	Next (23 × SF) MW of billing capacity	\$1,873.00 /MW/month	3.0 MW	\$5,619
3(1)(i)	All remaining MW of billing capacity	\$1,153.00 /MW/month	0.0 MW	\$0
Operating Reserve Charge Estimate				
4	Metered energy pool price × 4.53% =	\$3.35 /MWh	9,490 MWh	\$31,817
Transmission Constraint Rebalancing Charge Estimate				
5	Metered energy	\$0.017 /MWh	9,490 MW	\$161
Voltage Control Charge				
6	Metered energy	\$0.08 /MWh	9,490 MWh	\$759
Other System Support Services Charge				
7(a)	Highest metered demand	\$24.00 /MW/month	20.0 MW	\$480
7(b)	Apparent power difference	\$400.00 /MVA/month	0.0 MVA	\$0
Total Rate DTS charge				\$347,302
Rider C: Deferral Account Adjustment Rider				
2(4)(a)	Connection charge	0.00%	NA	NA
2(4)(b)	Operating reserve charge	0.00%	NA	NA
2(4)(c)	Transmission constraint rebalancing	0.00%	NA	NA
2(4)(d)	Voltage control charge	0.00%	NA	NA
2(4)(e)	Other system support services	0.00%	NA	NA
Total Rider C charge or credit				NA
Rider F: Balancing Pool Consumer Allocation Rider				
2	Rider F credit	NA /MWh	NA	NA

Total estimated charge in settlement period under Rate DTS: \$347,302

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ISO Tariff - Bill Estimator Calculator

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Attachment C: Rate PSC Bill Estimate Under 2022 ISO Tariff

Market Participant: **Name of Market Participant**
 Account: **Account ID**
 Date: **Date Prepared**

Tariff: AESO 2022
 Effective: Jan 01, 2022
 To: Current

	Billing Quantity	Reference	Volume
(j)	Substation fraction (SF)	Glossary	1.00000
(o)	Billing capacity	Glossary	20.0 MW

Rate or Rider Component	Credit	Volume	Amount
Rate PSC: Primary Service Credit			
2(2)(a) Substation fraction	\$11,322.00 /month	NA	NA
2(2)(b) First (7.5 × SF) MW of billing capacity	\$3,726.00 /MW/month	NA MW	NA
2(2)(c) Next (9.5 × SF) MW of billing capacity	\$2,210.00 /MW/month	NA MW	NA
2(2)(d) Next (23 × SF) MW of billing capacity	\$1,480.00 /MW/month	NA MW	NA
2(2)(e) All remaining MW of billing capacity	\$1,153.00 /MW/month	NA MW	NA
Total Rate PSC credit			NA

Rider C: Deferral Account Adjustment Rider			
2(4)(a) Primary service credit	0.00%	NA	NA
Total Rider C charge (credit)			NA

Total estimated credit in settlement period under Rate PSC: NA

Information Document

ISO Tariff - Bill Estimator Calculator

ID #2022-015T



Attachment D: Rate STS Bill Estimate Under 2022 ISO Tariff

Market Participant: **Name of Market Participant**
 Account: **Account ID**
 Date: **Date Prepared**

Tariff: AESO 2022
 Effective: Jan 01, 2022
 To: Current

	Billing Quantity	Reference	Volume
(r)	Metered energy	Glossary	NA
(s)	Pool price	Glossary	NA
(v)	Loss factor	Glossary	NA
(w)	Regulated generating unit MW	Appendix A	NA

Rate or Rider Component	Charge	Volume	Amount
Rate STS: Supply Transmission Service			
Losses Charge			
2(1) Metered energy pool price × NA =	NA /MWh	NA	NA
Regulated Generating Unit Connection Cost			
3(1) Regulated generating unit MW	\$0.00 /MW	NA	NA
Total Rate STS charge			NA
Rider E: Losses Calibration Factor Rider			
2(2) Metered energy pool price × NA =	NA /MWh	NA	NA
Rider J: Wind Forecasting Service Cost Recovery Rider			
2(2) Rider J charge	NA /MWh	NA	NA

Total estimated charge in settlement period under Rate STS: NA