

**2021 Loss Factors Effective 1 Jan 2021 (2021-05-28)**

Document: Workbook Showing Calculations From Hourly Raw Loss Factors to Final Loss Factors for 2021, in Accordance With Subsection 3(2)(f) of Section 501.10 of ISO Rules, Transmission Loss Factors  
 Effective: January 1, 2021 – December 31, 2021  
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Location (MPID)	Facility Name	Area Name	Number	PSS/E Bus	Final Loss Factor
0000001511	FortisAlberta Reversing POD - Fort Macleod (15S)	Fort Macleod	53	4237	12.00%
0000006511	FortisAlberta Reversing POD - High River (65S)	High River	46	4242	2.84%
0000006711	FortisAlberta Reversing POD - Stirling (67S)	Glenwood	55	4280	12.00%
0000012111	FortisAlberta Reversing POD - Brooks (121S)	Brooks	47	3256	2.84%
0000013711	FortisAlberta Reversing POD - Sedgewick (137S)	Wainwright	32	4078	2.84%
0000015811	FortisAlberta Reversing POD - Vauxhall (158S)	Vauxhall	52	553274	(0.63%)
0000016301	FortisAlberta DOS - Plains Midstream Canada (163S)	Empress	48	262	8.54%
0000019811	FortisAlberta Reversing POD - Blackfalds (198S)	Red Deer	35	3113	2.84%
0000021411	FortisAlberta Reversing POD - Innisfail (214S)	Didsbury	39	557120	(12.00%)
0000022911	FortisAlberta Reversing POD - Glenwood (229S)	Glenwood	55	4245	12.00%
0000025411	FortisAlberta Reversing POD - Coaldale (254S)	Lethbridge	54	4690	(12.00%)
0000025611	FortisAlberta Reversing POD - Harmattan (256S)	Didsbury	39	124	1.07%
0000025711	FortisAlberta Reversing POD - Hull (257S)	Vauxhall	52	2401, 552402	(1.17%)
0000027711	FortisAlberta Reversing POD - Hayter (277S)	Provost	37	220	(1.43%)
0000033111	FortisAlberta Reversing POD - Ponoka (331S)	Wetaskiwin	31	4090	(5.55%)
0000034911	FortisAlberta Reversing POD - Stavely (349S)	Stavely	49	4235	(2.57%)
0000038511	FortisAlberta Reversing POD - Spring Coulee (385S)	Glenwood	55	4246	12.00%
0000039611	FortisAlberta Reversing POD - Pincher Creek (396S)	Fort Macleod	53	4224	12.00%
0000042111	FortisAlberta Reversing POD - Hays (421S) *	Vauxhall	52	4401	2.84%
0000045411	FortisAlberta Reversing POD - Buck Lake (454S)	Drayton Valley	30	4080	2.84%
0000052611	FortisAlberta Reversing POD - Buffalo Creek (526S) *	Wainwright	32	4079	2.84%
0000065911	FortisAlberta Reversing POD - Pegasus (659S)	Swan Hills	26	325	(1.22%)
0000079301	FortisAlberta DOS - Cochrane EV Partnership (793S)	Seebe	44	191	2.84%
0000089511	FortisAlberta Reversing POD - Suffield (895S)	Medicine Hat	4	3270	1.83%
311S033N	ATCO Electric Reversing POD - Elmsworth (731S)	Grande Prairie	20	19134	(11.98%)
312S008N	ATCO Electric Reversing POD - Rycroft (730S)	Grande Prairie	20	19100	(12.00%)
312S025N	ATCO Electric Reversing POD - Mowat (2033S)	Grande Prairie	20	19116	(4.22%)
321S009N	ATCO Electric Reversing POD - Carmon (830S)	Peace River	19	19083	(2.89%)
321S033	ATCO Electric DOS - Daishowa-Marubeni (839S)	Peace River	19	1088	12.00%
325S009N	ATCO Electric Reversing POD - Hotchkiss (788S)	Peace River	19	19050	1.01%
372S025N	ATCO Electric Reversing POD - Lindbergh (969S)	Cold Lake	28	1444	(0.40%)
AFG1TX	APF Athabasca	Athabasca	27	392	(4.31%)
AKE1	McBride Lake Wind Facility	Fort Macleod	53	901	7.12%
ANC1	Alberta Newsprint	Swan Hills	26	298	(1.22%)
ARD1	Ardenville Wind Facility	Fort Macleod	53	739	5.88%
BAR	Barrier Hydro Facility	Seebe	44	216	(0.12%)
BCR2	Bear Creek #2	Grande Prairie	20	1142	(8.94%)
BCRK	Bear Creek #1	Grande Prairie	20	1142	(10.48%)
BIG	Bighorn Hydro Facility	Abraham Lake	34	103	2.06%
BPW	Bearspaw Hydro Facility	Seebe	44	184	0.08%
BR4	Battle River #4	Alliance	36	1491	2.66%
BR5	Battle River #5	Alliance	36	1469	2.94%
BRA	Brazeau Hydro Facility	Drayton Valley	30	153	1.66%
BSR1	Blackspring Ridge Wind Facility	Stavely	49	736	5.10%
BTR1	Blue Trail Wind Facility	Fort Macleod	53	328	5.85%
CAS	Cascade Hydro Facility	Seebe	44	175	(3.11%)
CES1/CES2	Calgary Energy Centre	Calgary	6	187	1.63%
CHIN	Chin Chute Hydro Facility	Lethbridge	54	406	3.33%
CL01	Cenovus Christina Lake Industrial System	Fort McMurray	25	879	4.17%
CMH1	City of Medicine Hat	Medicine Hat	4	976	4.13%
CNR5	CNRL Horizon Industrial System	Fort McMurray	25	1263	5.52%
CR1	Castle River #1 Wind Facility	Fort Macleod	53	234	6.20%
CRE3	Cowley Ridge Wind Facility	Fort Macleod	53	264	9.12%
CRR1	Castle Rock Ridge Wind Facility	Fort Macleod	53	221	6.25%
CRR2	Castle Rock Ridge Phase 2 Wind Facility	Fort Macleod	53	221	6.89%
CRS1	Crossfield Energy Centre #1	Airdrie	57	503	2.88%
CRS2	Crossfield Energy Centre #2	Airdrie	57	503	2.56%
CRS3	Crossfield Energy Centre #3	Airdrie	57	503	2.83%

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DAI1	Daishowa-Marubeni	Peace River	19	1089	(4.96%)
DOWGEN15M	Dow Hydrocarbon Industrial Complex	Fort Saskatchewan	33	61	4.06%
DRW1	Drywood #1	Glenwood	55	4226	4.94%
EAGL	Whitcourt Power	Swan Hills	26	410	(2.26%)
EC01	Cavalier	Strathmore	45	340	0.82%
EC04	Foster Creek Industrial System	Cold Lake	28	1301	5.47%
EGC1	Shepard	Calgary	6	772	2.38%
ENC1	Clover Bar #1	Edmonton	60	516	3.21%
ENC2	Clover Bar #2	Edmonton	60	516	3.19%
ENC3	Clover Bar #3	Edmonton	60	516	3.15%
FH1	Fort Hills Industrial System	Fort McMurray	25	1612	4.17%
FNG1	Fort Nelson	Rainbow Lake	17	20000	5.63%
GHO	Ghost Hydro Facility	Seebe	44	180	(0.60%)
GN1	Genesee #1	Lake Wabamun	40	525	4.02%
GN2	Genesee #2	Lake Wabamun	40	525	3.97%
GN3	Genesee #3	Lake Wabamun	40	525	3.89%
GPEC	Grande Prairie EcoPower	Grande Prairie	20	1101	(9.25%)
GWW1	Soderglen Wind Facility	Fort Macleod	53	358	5.96%
HAL1	Halkirk Wind Facility	Hanna	42	1435	2.73%
HRM	H. R. Milner	Grande Cache	22	1147	(6.91%)
HSH	Horseshoe Hydro Facility	Seebe	44	171	(0.36%)
IEW1	Summerview 1 Wind Facility	Fort Macleod	53	336	6.79%
IEW2	Summerview 2 Wind Facility	Fort Macleod	53	336	7.16%
INT	Interlakes Hydro Facility	Seebe	44	376	3.18%
IOR1	Cold Lake Industrial System	Cold Lake	28	1303	1.57%
IOR3	Kearl Oil Sands Industrial System	Fort McMurray	25	1610	2.84%
IOR4	Strathcona Refinery Industrial System	Edmonton	60	3069, 4066	2.84%
KAN	Kananaskis Hydro Facility	Seebe	44	193	(0.29%)
KH1	Keephills #1	Lake Wabamun	40	420	4.72%
KH2	Keephills #2	Lake Wabamun	40	420	4.74%
KH3	Keephills #3	Lake Wabamun	40	510	3.86%
KHW1	Kettles Hill Wind Facility	Fort Macleod	53	402	6.34%
MEG1	MEG Christina Lake Industrial System	Fort McMurray	25	405	3.31%
MKR1	Muskeg River Industrial System	Fort McMurray	25	1236	5.02%
MKRC	MacKay River Industrial System	Fort McMurray	25	1274	4.32%
NEP1	Ghost Pine Wind Facility	Hanna	42	603	1.33%
NOVAGEN15M	Joffre Industrial System	Red Deer	35	383	1.02%
NPP1	Northern Prairie Power Project	Grande Prairie	20	1118	(12.00%)
NRG3	NRGreen	Swan Hills	26	1674	(4.69%)
NX01	Nexen Balzac	Calgary	6	198	1.00%
NX02	Nexen Long Lake Industrial System	Fort McMurray	25	1241	4.68%
OMRH	Oldman River Hydro Facility	Fort Macleod	53	230	4.27%
OWF1	Oldman 2 Wind Facility	Fort Macleod	53	543	6.69%
PH1	Poplar Hill #1	Grande Prairie	20	1118	(11.42%)
PMB1	West Pembina	Drayton Valley	30	4215	(12.00%)
POC	Pocaterra Hydro Facility	Seebe	44	329	1.30%
PR1	Primrose Industrial System	Cold Lake	28	800	8.50%
Proj_1647	Heartland Petrochemical Complex Industrial System	Fort Saskatchewan	33	—	3.40%
Proj_1812	Forty Mile Granlea Wind Facility	Medicine Hat	4	—	4.52%
Proj_1837	FortisAlberta Reversing POD - Tilley (498S)	Brooks	47	3275	2.53%
Proj_1840	FortisAlberta Reversing POD - Jenner (275S)	Empress	48	—	3.61%
Proj_1849	FortisAlberta Reversing POD - Burdett (368S) **	Vauxhall	52	2269	2.49%
Proj_1879-1	Claresholm Solar A Facility	Stavelly	49	99004	5.22%
Proj_1879-2	Claresholm Solar B Facility ***	Stavelly	49	99004	5.22%
Proj_2009	Travers Solar Facility	Stavelly	49	—	3.11%
Proj_2041	Windrise Wind Facility	Fort Macleod	53	—	5.23%
Proj_2086	FortisAlberta Reversing POD - Brooks (121S-83L)	Brooks	47	3256	2.27%
Proj_2092	FortisAlberta Reversing POD - Brooks (121S-257LE)	Brooks	47	4256	2.26%

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Proj_2171	FortisAlberta Reversing POD - Westfield (107S)	Vauxhall	52	4277	2.13%
Proj_2216	FortisAlberta Reversing POD - Chappice Lake (649S)	Medicine Hat	4	4320	4.33%
Proj_2241	FortisAlberta Reversing POD - Burdett (368S) **	Vauxhall	52	2269	2.49%
RB5	Rainbow #5	Rainbow Lake	17	83	2.29%
RIV1	Riverview Wind Facility	Fort Macleod	53	69221	6.19%
RUN	Rundle Hydro Facility	Seebe	44	195	(1.43%)
RYMD	Raymond Reservoir Hydro Facility	Glenwood	55	413	5.52%
SCL1	Syncrude Industrial System	Fort McMurray	25	1200	5.38%
SCR1	Suncor Industrial System	Fort McMurray	25	1200	3.46%
SCR2	Magrath Wind Facility	Glenwood	55	251	5.52%
SCR3	Chin Chute Wind Facility	Lethbridge	54	389	4.32%
SCR4	Wintering Hills Wind Facility	Sheerness	43	759	3.79%
SCTG	Scotford Industrial System	Fort Saskatchewan	33	43	3.40%
SD4	Sundance #4	Lake Wabamun	40	135	0.57%
SD5	Sundance #5	Lake Wabamun	40	135	2.84%
SD6	Sundance #6	Lake Wabamun	40	135	0.33%
SET1	South Edmonton Terminal *	Edmonton	60	3436	2.84%
SH1	Sheerness #1	Sheerness	43	1481	4.72%
SH2	Sheerness #2	Sheerness	43	1486	4.70%
SHCG	Shell Caroline	Caroline	38	370	12.00%
SLP1	Slave Lake Pulp	High Prairie	21	1230	(8.82%)
SPR	Spray Hydro Facility	Seebe	44	310	(1.81%)
SUM1	Summerview Energy Storage Facility	Fort Macleod	53	336	3.76%
TAB1	Taber Wind Facility	Vauxhall	52	343	2.23%
TAY1	Taylor Hydro Facility	Glenwood	55	693	4.75%
TCO1	Carseland Industrial System	Strathmore	45	5251	1.95%
TCO2	Redwater Industrial System	Fort Saskatchewan	33	50	3.34%
THS	Three Sisters Hydro Plant	Seebe	44	379	2.84%
VVW1	Valleyview #1	Valleyview	23	1172	(4.25%)
VVW2	Valleyview #2	Valleyview	23	1172	(4.22%)
WEY1	Weyerhaeuser	Grande Prairie	20	1140	(6.22%)
WHT1	Whitla Wind Facility	Medicine Hat	4	60990	4.25%
WST1	Westlock Power Plant	Athabasca/Lac La Biche	27	14	(0.84%)
BCHEXP	Alberta-BC Interite - Export	WSCC	15	1520	0.87%
BCHIMP	Alberta-BC Interite - Import	WSCC	15	1520	3.56%
MTEXP	Alberta-Montana Intertie - Export	Glenwood	55	80000	—
120SIMP	Alberta-Montana Intertie - Import	Glenwood	55	80000	5.12%
SPCEXP	Alberta-Saskatchewan Intertie - Export	Empress	48	1473	2.26%
SPCIMP	Alberta-Saskatchewan Intertie - Import	Empress	48	1473	4.32%

\* When 2021 loss factors were being determined, this location did not satisfy the project inclusion criteria in subsection 7 of section 501.10 of the ISO rules. The average annual loss factor for the transmission system has therefore been used for this location, in accordance with subsection 9(2) of section 501.10 of the ISO rules.

\*\* When 2021 loss factors were being determined, Projects 1849 and 2241 were configured as separate reversing POD locations. The two projects were subsequently connected downstream of a single system access service, and the loss factor for the single reversing POD location applies to both projects in accordance with subsection 5(3)(b) of section 501.10 of the ISO rules.

\*\*\* When 2021 loss factors were being determined, Project 1879 was configured as a single location. Project 1879 was subsequently configured as two locations, and the same loss factor has been deemed to be calculated for each location in accordance with subsection 8 of section 501.10 of the ISO rules.