

Submission from the Common Voice Northwest Energy Task Force

Re: 2020-21 Scoping Assessment for Northwestern Ontario

January 10, 2021

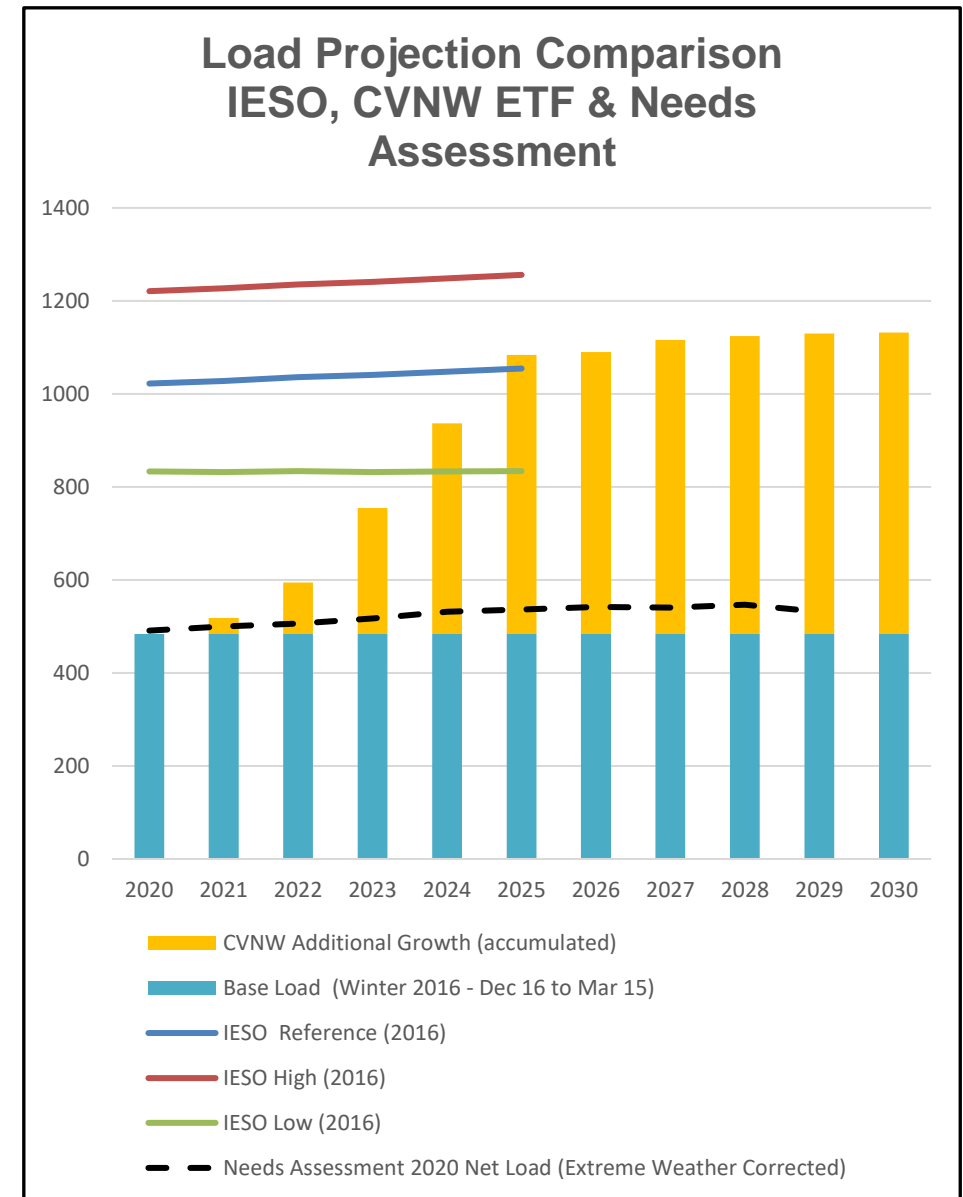
To the IESO

The CVNW Energy Task Force (ETF) once again appreciates the opportunity to provide input into the 2020-21 Scoping Assessment.

The Common Voice Northwest Energy Task Force regularly tracks known and anticipated increases in electrical load in the Northwest. The information is obtained from a variety of official documents prepared by individual mining organizations and usually are part of regulatory requirements for a range of Government agencies. John Mason, Manager of Mining Services with the Thunder Bay Community Economic Development Commission compiles the information on behalf of the CVNW Energy Task Force. Hydro One in its Needs Assessment submission to the IESO indicated that there would only be growth of 55 MW¹ across the region by 2028 (Net Load (Extreme Weather Corrected)).

The Energy Task Force’s data suggests a much higher load forecast: 644.2 MW by 2030 with an additional 8.7 MW post 2030.

An additional 199 MW has been identified as being required but there is no indication as to the in-service requirement.



¹ Appendix A: Northwest Ontario Region Non-Coincident Winter Load Forecast, Northwest Ontario – Needs Assessment

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031 and BEYOND	GRAND TOTAL	Unknown
GRAND TOTAL NEW LOADS	126.0	81.4	72.6	182.4	152.7	8.3	20.2	6.5	5.2	2.6	8.7	666.5	199

Hydro One’s conclusion is a clear indication that the Needs Assessment by Hydro One failed to properly identify “capacity needs” for in the region. This is in spite of being provided with the information compiled by the Energy Task Force.

It is clear from the perspective of the Energy Task Force that the directions to all LDC’s must include a requirement that they contact all known developers within their sphere of supply, identify known future loads and timing along with a statement about the LDC’s opinion on the realization of the loads in the time frame identified. While the Needs Assessment provides significant details on operational issues such as the performance of various elements of the system it is significantly lacking in the type of detail required to project the overall ‘capacity needs’ of the region. In addition, it is inappropriate to include statements such as “No actions required at this time, but it is prudent to continue to monitor the Red Lake Area load and growth-related activities” or “No actions required at this time other than to continue to monitor the Geraldton Area Mining Development “ when what is needed is explicit indications of the future requirements of an area or the region as a whole.

This failure is particularly blatant when one examines the known growth in the Ear-Falls-Red Lake Area, Sioux Lookout and Greenstone.

The IESO projections are from 2016 while the base load shown in the adjacent graph is also from 2016.

The ETF is completing a detailed analysis of the electrical needs of the Northwest and will submit it to the IESO once completed.

Mining Loads

All of the mining data has been compiled by John Mason, Project Manager, Mining Services with the Thunder Bay Community Economic Development Commission. The detailed information for each mining project is found in Appendix A to this submission.

Mine	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031 and BEYOND	GRAND TOTAL	Unknown
Harte Gold-Sugar Zone (1.1 Moz)(N of White River)		4											4	
Evolution (former Newmont Goldcorp Inc. -Cochenour Deposit (Red Lake)		0.67	1.5	1.17	-0.25	0.33	0	13.67					17.09	
Pure Gold -Madsen Mine(2.063 M oz Gold)(Red Lake)		15											15	
Battle North Mine Corp-(Bateman). (979,000 oz M&l Gold) (Red Lake)		5.3											5.3	
Treasury Metals -Goliath Zone (1.14 M. oz Gold)(Dryden)			12										12	
New Gold-INTREPID ZONE (NW of F Frances) Underground development			5										5	
Avalon Advanced Materials-Separation Rapids(8.4 Mt @ 1.41% Li2O (N of Kenora)			10										10	
CROPS Mining-Winston Lk Mine(2.2Mt@13.7% Zn)(N of Schreiber)			10										10	
Rock Tech Lithium (6.57 Mt @1.02% Li2O-5 zones) (S of Beardmore)			10										10	
First Mining Gold Corp-Cameron Lake (997,000 oz. Gold) (SE of Kenora)			15										15	
Greenstone Gold (Equinox and Orion) (5.5 MOz)			0										0	
Premier Gold(Hasaga)(1.1 M oz. gold)			10										10	
Generation Mining -Sibanye Gold (4.3 MOz.Palladium+Platinum) (N of Marathon)				65									65	
Treasury Metals -Goldlund (877,000 oz.gold)(S of S Lookout)					10								10	
First Mining Gold Corp (4.67M oz) (Springpole Lake)					70								70	
Agnico Eagle-(Hammond Reef) (5.13 M. oz Gold) (N of Atikokan)					100								100	
Frontier Lithium-Pakeagama Lake Lithium(5.8Mt @ 2.00% LiO2 (North of Red Lake)						10							10	
Noront Resources -Eagles Nest (11 Mt @ 2.5% Cu-Ni) (Ring of Fire)						20							20	
Ambershaw Metallics-Bending Lake Iron Corp. (245 M. t @ 25% Iron)(SW of Ignace)						50							50	
Wesdome-Moss Lake Gold Project (1.1 Million oz Au @ 1.1g/tonne)(W. of Thunder Bay)						40							40	
Noront Resources (200 Mt Chromite) (Ring of Fire) Blackbird and Black Thor						20							20	
Zen Graphene Solutions 1.5 m/t C measured and infered @4% Carbon(N Hearst)														9
Lithium Energy Products (Griffith Iron Mine) (120 M t iron resource)(Ear Falls)														10
Rockex Mining Corp. (1 Billion t @ 25-30% Fe)(S. of S Lookout)														180
TOTAL	0	24.97	73.5	66.17	179.75	140.33		13.67				0	498.39	199

Industrial, Community and First Nation Loads

Source	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031 and BEYOND	GRAND TOTAL	Unknown
Resolute's FWFN saw mill 3rd shift														
Hudson Mill														
Ear Fall's saw mill										0		0		
Resolute's Ignace Saw Mill										0		0		
Resolute's Atikokan Saw Mill										0		0		
Atikokan Pellet Plant										0		0		
Thunder Bay Pellet Plant										0		0		
Kenora Forest Products										0		0		
Terrace Bay Pulp and Paper Mill										0		0		
Longlac Mill										0		0		
Nakina Sawmill		3.5										3.5		
Resolute's Sapawe Saw Mill additional shift														
Resolute's Ignace Saw Mill additional shift														
Lithium Chem Plant Thunder Bay (2023/24)					10								10	
Sioux Lookout Growth		22.93	1.37	0.98	0.98	2.44	1.43	0.98	0.98	0.98	4.11		37.18	
Geraldton Area Growth (projected based on Sioux Lookout Study)		22.93	1.37	0.98	0.98	2.44	1.43	0.98	0.98	0.98	4.11		37.18	
Current net load for Resolute Pulp Mill 80 MW														
INDUSTRIAL LOADS TOTAL		49.36	2.74	1.96	11.96	4.88	2.86	1.96	1.96	1.96	8.22	3.5	91.36	
FIRST NATION LOADS		2.3	2.4	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	5.2	39.8	
TOTAL NEW INDUSTRIAL, COMMUNITY AND FIRST NATION LOADS	0	101.0	7.9	6.4	2.6	12.4	8.3	6.5	6.5	2.6	2.6	8.7	91.3	

The ETF has been unable at the time of writing to identify any additional requirements from the major pulp and paper operations or from operating and dormant sawmills (with the exception of the dormant Hudson sawmill which is up for sale).

The Sioux Lookout data was extracted from a Sioux Lookout Hydro commissioned CIMA Canada Inc. to prepare a System Capacity-Load Forecast Study in 2019. The report outlined a range of potential outcomes as the community grows. The range of growth over the next 9 years is from a low of 20 MW to a high of 41 MW. There is significant pent-up demand for growth in Sioux Lookout. Many existing workers are forced to commute from Dryden due to the lack of appropriate housing. The increased utilization of Sioux Lookout as the transportation and supply hub for the far north is forcing the community to grow. Additional electrical power is a key input that will facilitate that growth.

The ETF extrapolated the Sioux Lookout Analysis to provide a projection for the community of Geraldton as it will grow at least to the same extent as Sioux Lookout as the new mine develops and begins operation – new housing, businesses etc. And it will not only be Geraldton that will grow, as there is significant pent-up demand in the neighbouring First Nations. However, none of this demand will materialize unless the transmission/distribution lines are upgraded to increase their capacity.

The First Nation information is not current and may be understated.

Regional Projections

Marathon-Greenstone	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031 and BEYOND
Harte Gold-Sugar Zone (1.1 Moz)(N of White River)		4										
CROPS Mining-Winston Lk Mine(2.2Mt@13.7% Zn)(N of Schreiber)			10									
Greenstone Gold (Equinox and Orion) (5.5 M Oz)			0									
Generation Mining -Sibanye Gold (4.3 M Oz.Palladium+Platinum) (N of Marathon)				65								
Rock Tech Lithium (6.57 Mt @1.02% Li2O-5 zones) (S of Beardmore)			10									
Geraldton Community Expansion		22.93	1.37	0.98	0.98	2.44	1.43	0.98	0.98	0.98	4.11	
TOTAL G-M		4	20	65	0.98	2.44	1.43	0.98	0.98	0.98	4.11	
Accumulated Growth		4	24	89	89.98	92.42	93.85	94.83	95.81	96.79	100.9	100.9

Ear Falls-Red Lake- Sioux Lookout	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Evolution (former Newmont Goldcorp Inc. -Cochenour Deposit (Red Lake)		0.67	1.5	1.17	-0.25	0.33	0	13.67			
Pure Gold -Madsen Mine(2.063 M oz Gold)(Red Lake)		15									
Battle North Mine Corp-(Bateman). (979,000 oz M&I Gold) (Red Lake)		5.3									
Premier Gold(Hasaga)(1.1 M oz. gold))			10								
First Mining Gold Corp (4.67M oz) (Springpole Lake)					70						
Frontier Lithium-Pakeagama Lake Lithium(5.8Mt @ 2.00% LiO2 (North of Red Lake)						10					
Lithium Energy Products (Griffith Iron Mine) (120 M t iron resource)(Ear Falls)											
Rockex Mining Corp. (1 Billion t @ 25-30% Fe)(S. of S Lookout)											
Sioux Lookout Community Growth		22.93	1.37	0.98	0.98	2.44	1.43	0.98	0.98	0.98	4.11
TOTAL NoD		20.97	11.5	1.17	69.75	10.33	0	13.67	0.98	0.98	4.11
Accumulated Increase		20.97	32.47	33.64	103.39	113.72	113.72	127.39	128.37	129.35	133.46

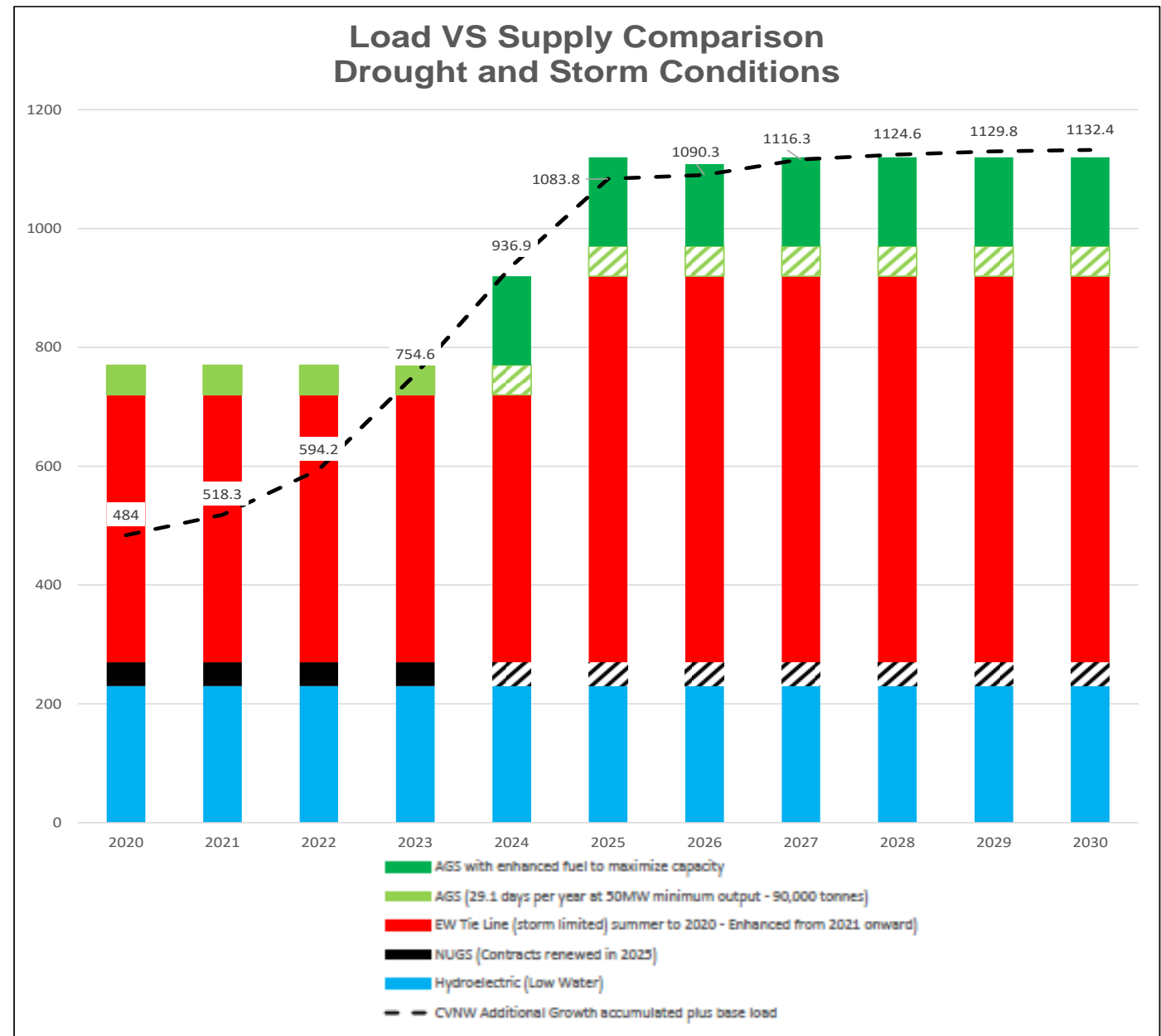
Ring of Fire	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031 and BEYOND
Noront Resources (200 Mt Chromite) (Ring of Fire) Blackbird and Black Thor						20						
Noront Resources -Eagles Nest (11 Mt @ 2.5% Cu-Ni) (Ring of Fire)						20						
TOTAL RoF						40						

West of Thunder Bay	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031 and BEYOND
Treasury Metals -Goldlund (877,000 oz.gold)(S of S Lookout)					10							
Treasury Metals -Goliath Zone (1.14 M. oz Gold)(Dryden)			12									
New Gold-INTREPID ZONE (NW of F Frances) Underground development			61.2									
Avalon Advanced Materials-Separation Rapids(8.4 Mt @ 1.41% Li2O (N of Kenora)			10									
First Mining Gold Corp-Cameron Lake (997,000 oz. Gold) (SE of Kenora)			15									
Agnico Eagle-(Hammond Reef) (5.13 M. oz Gold) (N of Atikokan)					100							
Ambershaw Metallics-Bending Lake Iron Corp. (245 M. t @ 25% Iron)(SW of Ignace)						50						
Wesdome-Moss Lake Gold Project (1.1 Million oz Au @ 1.1g/tonne)(W. of Thunder Bay)						40						
TOTAL WoTB			98.2		110	90						
Accumulated Load Growth			98.2	98.2	208.2	298.2	298.2	298.2	298.2	298.2	298.2	298.2

Load VS Supply

The Chart to the right compares the Energy Task Force projections (black dashed line) with the supply in the Northwest. The chart assumes the following:

- 1) Drought conditions exist with the hydraulic output severely constrained and will continue to exist for weeks if not months
- 2) Storm conditions until the end of 2024 will limit the ability of the existing East West Tie to transfer energy from the North East into the Northwest.
- 3) The contracts with the NUGS, including the Atikokan Generating Station are renewed (see black hashed bar for extension of Resolute NUG, light green hashed bar for Atikokan continuation and dark green for Atikokan fuel and output expansion)
- 4) The fuel contract with the Atikokan Generating Station is increased to enable the station to produce to its licenced capacity of 200 MW
- 5) That there is sufficient energy available from or through the North East to utilize the East-West Tie to its maximum 650 MW capacity on a sustainable basis.



APPENDIX A

MAJOR EXPLORATION PROGRAMS IN N.W.O. 2021																		
Company (Deposit)	Planning Area	Prod Start Year	Portion of Year	Mine Life	Mill Size	Capital Cost	Cost /Production	Road Required	Rail Required	Powerline Transmission Required	At Start			Future Power			Positions Rqd C= construction O= operating	Economics PEA, Pre-Feas, Feas
											Power Required Minimum (MW)	Power Required Maximum (MW)	ETF Power Projection (MW)	Year	Power Required (MW)	Power (Notes)		
Harte Gold-Sugar Zone (1.1 Moz)(N of White River)	G-M	2018		11	800 t/day	\$118.7M	\$708/oz - 80,700 oz gold/yr	20 km from Highway 11	No	44 km	10	14	4	2021	4		100 - O	20,000 -24,000 oz prod'n guidance 2020-mill expansion planned to 1200t/d.
Evolution (former Newmont Goldcorp Inc. Cochenour Deposit (Red Lake)	NoD	2019		20		\$420M	\$350/oz -- 250,000-275,000 oz/yr	0	U/G 5 KM tramway		34	44	10	2026	10		100 - C 100 - O	rationalizing mill requirements
Pure Gold -Madsen Mine(2.063 Moz Gold)(Red Lake)	NoD	2021		13	800 tonne per day mill on site	\$125 M	\$787/oz--AIS 100,000 oz/yr	road upgrade potentially	No		9	15	15	2023			285 - C, 340 - O	mill construction complete. Gold pour Dec 2020
Battle North Mine Corp-(Bateman). (979,000 oz M&I Gold) (Red Lake)	NoD	2021		8.2	1800 t/day (expand to 2500/day)	\$109.3M	\$882/oz AIS	\$2 M in upgrades	No	20 KM 44 KV Line	5.3	Diesel generator backup					285 - C 456 - O	Raised \$40M Dec/20 -headframe and mill in place
Treasury Metals - Goliath Zone (1.14 M. oz Gold)(Dryden)	WoTB	2022		13	2500 t/day	\$133.2M	\$611/oz-- 87,850 oz gold/yr	2 KM	No	200 metres	12		12				150 - C 200 - O	PFS underway-drill program-Fed EA submitted
New Gold-INTREPID ZONE (NW of F Frances) Underground development	WoTB	2022		8	21,000 t/day		\$710/oz--Mill- 325,000 oz gold/yr	15 KM (\$2M)	No	17 KM 230 KV Line	5					2022	675 - C 618 - O	New ramp being driven to access Intrepid Zone
Avalon Advanced Materials-Separation Rapids(8.4 Mt @ 1.41% Li2O (N of Kenora)	WoTB	2022		20						30-40 km	10		10					partnership with Rock Tech to construct a lithium chemical plant in
CROPS Mining-Winston Lk Mine(2.2Mt@13.7% Zn)(N of Schreiber)	G-M	2022		9	1000t/day		\$0.51/lb	upgrade	No	existing trans line maintenance required-	10		10				120-140-O	CROPS purchased property from Sup Lk in Sept/20-- Regional

Company (Deposit)	Planning Area	Prod Start Year	Portion of Year	Mine Life	Mill Size	Capital Cost	Cost Production /Production	Road Required	Rail Required	Powerline Transmission Required	At Start			Future Power			Positions Rqd C= construction O= operating	Economics PEA, Pre-Feas, Feas
											Power Required Minimum (MW)	Power Required Maximum (MW)	ETF Power Projection (MW)	Year	Power Required (MW)	Power (Notes)		
Rock Tech Lithium (6.57 Mt @1.02% Li2O-5 zones) (S of Beardmore)	TB	2022		11	1500 t/day recover 1.1 Mt @6.2% Li2O	\$65.3M	\$397/t	\$2 M in upgrades	No	20 KM 44 KV Line installed	10		10					Rocktech-Ardiden JV signed Oct.-PEA 2018-62% IRR-engineering, LIDAR
Greenstone Gold (Equinox and Orion) (5.5 M.Oz)	G-M	2022		15	27,000 t/Day	\$1.265B (Can)	\$600/oz(US)--288,000 oz gold/yr	Hwy # 11 realignment 20 km	No	10 KM (approx.)		power transm. into region deficient			65MW--gas turbine required	975-C 450-O		New ownership-permitting, design, engineering being completed
Premier Gold(Hasaga)(1.1 M oz. gold)	NoD	2023									10							2020 24,000 m DD program complete - assays pending
Generation Mining - Sibanye Gold (4.3 M Oz.Palladium+Platinum) (N of Marathon)	G-M	2023		14	14,000 t/Day	\$431M	\$586 US/oz AISC	4 KM	No	4 KM 115 KV Line	65					400-C 365- O		PEA Q1 2020 @ 30% IRR-FS started April 2020-FS to be completed in 2021-Joint Panel Review EA commenced 2020
Treasury Metals - Goldlund (877,000 oz.gold)(S of S Lookout)	NoD	2024		12							10		10					Treasury acquired from First Mining Gold --June 3/20-Late 2020 10,000 m.
First Mining Gold Corp (4.67M oz) (Springpole Lake)	NoD	2024		12	36,000 t/day	\$586M	\$611/oz AU AIS-410,000 oz gold/yr	Needs road 115km, has winter road access	No	110 km	70							2020-silver streaming Majestic EIS submittal--PFS underway-DD to
Agnico Eagle-(Hammond Reef) (5.13 M. oz Gold) (N of Atikokan)	WoTB	2024		14	50,000 t/day	\$614M	\$382/oz-369,000 oz gold/yr	60 KM (upgrades)	No	32 KM 230 KV Line	100		30		Diesel generator backup 1 x 1500 KW	1000-C 530 -O		EA complete - extensive claim staking in dstrict 2020
Frontier Lithium-Pakeagama Lake Lithium(5.8Mt @ 2.00% LiO2 (North of Red Lake)	NoD	2025		16-18	1500t/day	\$147.5M	\$397/t	upgrade 30 km		30 km (app)	10		10					Positive PEA

Company (Deposit)	Planning Area	Prod Start Year	Portion of Year	Mine Life	Mill Size	Capital Cost	Cost /Production	Road Required	Rail Required	Powerline Transmission Required	At Start			Future Power			Positions Rqd C= construction O= operating	Economics PEA, Pre-Feas, Feas
											Power Required Minimum (MW)	Power Required Maximum (MW)	ETF Power Projection (MW)	Year	Power Required (MW)	Power (Notes)		
Noront Resources - Eagles Nest (11 Mt @ 2.5% Cu-Ni) (Ring of Fire)	G-M	2025		11	2700t/day	\$609M	\$97/t--1 million tons/year	295 KM-East West road preferred + Rail?	No		20		20			No- Gensets initially to service ug mine and mill	800 -C 400 -O	road design& EA underway-Eagles Nest mine const planned for 2023-25; new FS started-
Ambershaw Metallics-Bending Lake Iron Corp. (245 M. t @ 25% Iron)(SW of Ignace)	WoTB	2025		35	19,000 t/Day	\$1B	\$50/t	0	25 KM?	25 KM	50							2019-EA applic. rec. 2020-PEA completed
Wesdome-Moss Lake Gold Project (1.1 Million oz Au @ 1.1g/tonne)(W.	WoTB	2025						30km			40							Drilling 2016/17-PEA 2015-New Resource Nov/15-
Noront Resources (200 Mt Chromite) (Ring of Fire) Blackbird and Black Thor	RoF G-M	2025		30 to 100							20							2020- new PEA underway-EA started-Eagles Nest and Blackbird to be co-
Zen Graphene Solutions 1.5 m/t C measured and inferred @4% Carbon(N Hearst)	NE	?				\$411M		Yes, 30 km but has a winter road in place	No, but rail is 70 km away	30 km away	9						200-C 150-O	Q2 2020--partner with Evercloak- environ baseline underway
Lithium Energy Products (Griffith Iron Mine) (120 Mt iron resource)(Ear	NoD	?			225 t/day mill on site		100,000 oz/yr	20 km upgrade	No	20 km line upgrade	10		10					Drilling 2016-on hold
Rockex Mining Corp. (1 Billion t @ 25-30% Fe)(S. of S Lookout)	NoD	?		30	6 Mt of conc/yr	\$1.56B	\$865/oz Au and 61000 oz/year	Has road to sites	No	230 KV Line 20 KM	180		180					New Resource 2017
Landore Res.-BAM Gold Deposit (1.05 Moz.) (N. Lk Nipigon)	G-M			6.25	2200 t/day	\$93.81M	\$816/oz	upgrade 60 km	No	75 km	15		15					PEA 2019--14,000 m DD on BAM--new tech report/resource
Ardiden Ltd.-Seymour Lake Deposit (4.8Mt@ 1.255 Li20) (N of Lk Nipigon)	G-M							upgrade 75 km	No	75 km	10		10					North and South Aubry Zones- battery grade Li--jv with Rock Tech

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											Power Required Minimum (MW)	Power Required Maximum (MW)	ETF Power Projection (MW)	Year	Power Required (MW)	Power (Notes)		
Impala Canada-Sunday Lake (N of Thunder Bay)	TB																	significant palladium zone-- exploration drilling 2020 and 2021
KWG Resources -Black Horse (78 Mt @ 35.3% Cr2O3)	RoF-G-M								340 km									China Rail--FS completed-Black Horse main asset- 1/3 B Daddy
Auteco-Pickle Crow (1.3 M oz Gold)(Pickle Lake)	NoD	?			225 t/day mill, then expand later		?----- >100,000 oz/yr	20 KM (approx.) upgrade	No	20 KM Line upgrade	10							Auteco optioned in 2020-45,000 m DD program in 2020
Clean Air Metals(TBNorth) (10 Mt @2.2 g/t Platinum &	TB			7		\$164 to \$360 M		20 KM	No	20 KM	30							New tech resource and PEA out early 2021
Great Bear Res. Ltd.- Dixie Project (SE of Red Lake)	NoD																	22 km strike length being drilled-4 gold zones-- resource by 2021?--