EUROPEAN RAW MATERIALS ALLIANCE | ERMA

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RAW MATERIALS SUMMIT

23-25 May 2022, BCC Berlin

GREENLAND RESOURCES

"Greenland molybdenum mining project and its product applications in Europe's high-performance steel industry and Green Deal"

www.greenlandresources.ca

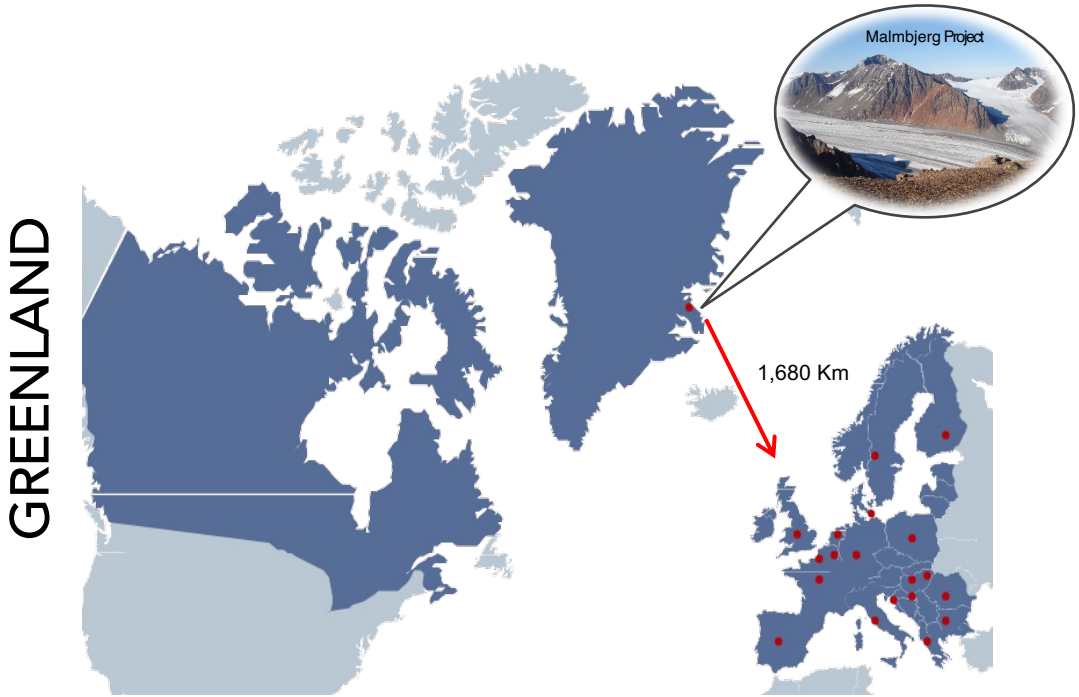
GREENLAND RESOURCES

We know responsible mining can significantly improve peoples' lives

COMPANY HIGHLIGHTS

- **World Class Climax-type 100% owned pure molybdenum** deposit in East Greenland near tide-water
- **Critical Mineral needed in all future green energy technologies,** World Bank (2020); IEA (2021)
- **Environmental mine design** focused on **reduced CO_2** emissions and water usage, **clean tailings**
- **Low disturbance modularized mine** design with **minimum** mine closure **footprint after reclamation**
- **NI 43-101 Feasibility Study with Robust Economics** (2022 Tetra Tech)
- **Strategic Project** capable of supplying twenty years 23% of **European** total **molybdenum demand**
- **Europe consumes 25% of global molybdenum** demand yet has no domestic production
- **Steel needs molybdenum** and **EU steel** dependent **industries** represent **18%** of **EU US$15 trillion GDP**
- **Very clean ore body** ideal for world leading high performance steal industry in Europe
- Project can **significantly reduce country unemployment** and generate taxes in Greenland
- Currently re-permitting project (was fully permitted in 2009)

AN ATTRACTIVE MINING JURISDICTION

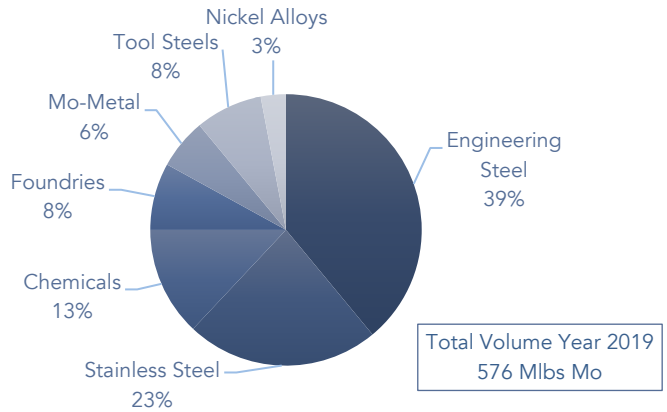


Molybdenum users in the EU (Steel and Chemical)

- ✓ Autonomous country within the Kingdom of Denmark (AAA credit)
- ✓ Ranked Greenland as Global #1 in "Current Mineral Potential Index"
- ✓ Greenland is a member of the European Raw Material Alliance (ERMA)
- ✓ >US$45,000 GDP per capita
- ✓ Over 100 years of geological data
- ✓ State of the art University and School of Mining
- ✓ Malmbjerg Project located in nearest point to the EU

MOLYBDENUM: MARKET STATISTICS

MOLYBDENUM USES



REGIONAL PRODUCTION

Million pounds of Molybdenum Content	2019	
Region	Production	Use
North America	142	64
South America	187	28
Europe *	-	134
China	206	221
Other	40	129
Total	**575**	**576**

Source: IMOA

- EU largest Mo users: Germany ≃ 21 million pounds per year, Italy 18, Finland 16, Sweden 14
- High performance steel (exceptional higher standard steel) is mainly produced in Scandinavia and Germany

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DEFINITIVE FEASIBILITY STUDY HIGHLIGHTS (TETRA TECH, February 23 2022)

- **Robust Economics on a twenty-year** open pit **mine life**[1]
- **Average annual production** in years 1-10 of 32.8 million pounds per year of contained molybdenum metal at an average grade of 0.23% MoS_2 and average annual LOM production of **24.1 million pounds with a cash cost of US$6.38/lb Mo**
- Base **Cash case after-tax IRR of 22.4%, NPV6% of US$1.17 billion (€1.02 billion)**
- **Levered Case pre-tax IRR of 40.4%, after tax IRR of 33.8% and payback of 2.4 years**[2]
- **Mineral Reserves 245 million tonnes at an average grade of 0.176% MoS_2 containing 571 million pounds of molybdenum metal** with very low impurity elements ideal for European high performance steel products
- Potential to generate **LOM corporate taxes** of more than **US$800 million to the Greenland Government**

Notes:

[1] See Appendix for Feasibility Study Key Results and Sensitivity Analysis
[2] Economic parameters were estimated using a price of US$18/lb Mo
[3] Levered Case assumes initial capex is financed as 40% equity and 60 % debt repaid over 15 years at 7% interest rate.

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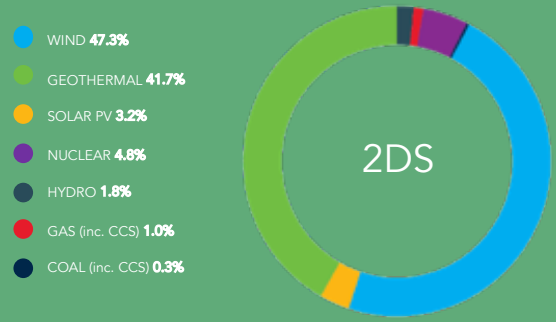
MOLYBDENUM: GREEN ENERGY

- ✓ **Green Energy** transition to increase global demand of molybdenum (i.e., technology, mining equipment)
- ✓ Government infrastructure-projects aiming to promote economic growth will use molybdenum
- ✓ **World Bank (2020)** estimates **119% demand increase for molybdenum through 2050** under IRENA REmap scenario from energy technologies only
- ✓ **International Energy Agency (2021)** estimate **290% demand increase for molybdenum through 2040** under SDS scenario for renewables
- ✓ **Molybdenum** named one of the six cross cutting **critical minerals by the World Bank in 2020** that will be used in all technologies in the green energy transition

TOTAL MOLYBDENUM DEMAND BY ENERGY TECHNOLOGY THROUGH 2050 UNDER 2DS(1)



Note: 2DS = 2-degree scenario, CCS = carbon capture and storage, CSP = concentrated solar power. PV = photovoltaic.

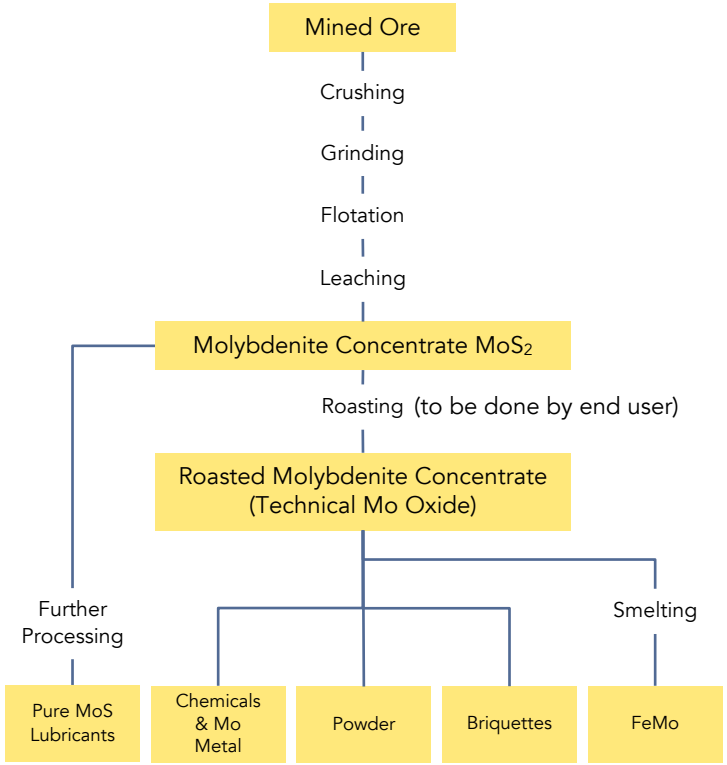
Source: (1) Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition, 2020 World Bank Group, Figure ES.2 Total Molybdenum Demand by Energy Technology Through 2050 Under 2DS

GREENLAND RESOURCES

ENVIRONMENTALLY FRIENDLY OPERATION

- ✓ Malmbjerg has the potential to become the most environmentally friendly source of molybdenum in the world
- ✓ Processing produces nearly no deleterious elements into the water environment and tailings
- ✓ Hauling our ore with an EU built rope conveyor that produces no CO_2, its own electricity and excess 1.3 Mw of electrical energy
- ✓ Designed process plant operation to use recycled salt water as process water, with very low reagent concentrations to mitigate any potential environmental contamination
- ✓ Limited molybdenum and mine-site consumables shipping season; 8-10 months no aquatic wildlife environmental disturbance in Kong Oscar Fjord
- ✓ Low disturbance footprint mine design and minimum mine closure footprint after reclamation because most of the infrastructure is modularized

Processing Flowsheet



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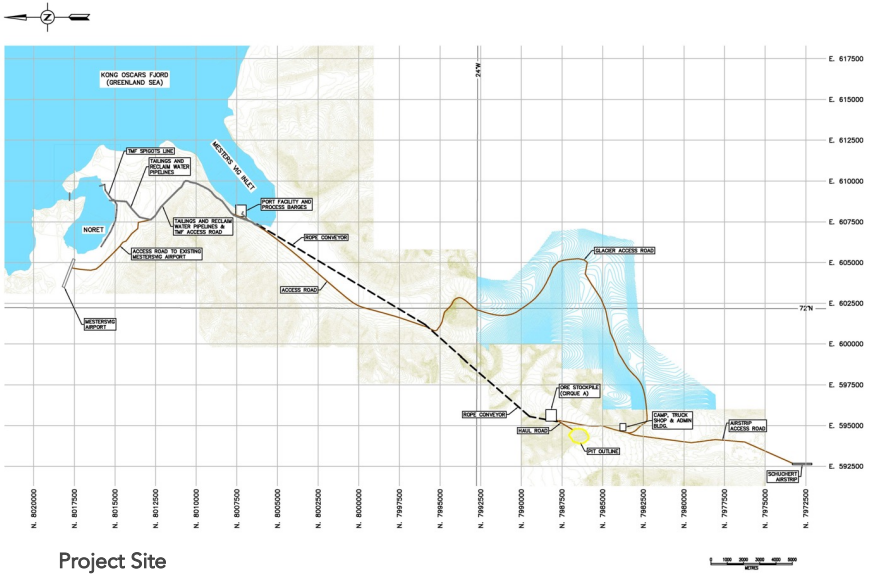
MINE PLAN (NI 43-101 Feasibility Study Malmbjerg, February 2022)

- Open pit mine with the primary crusher onsite; ore transport by 21km aerial rope conveyor with no CO_2 generation comprised of 4 independent blocks where 11.5km will be just above surface; processing on landed barges (no greenfield development) at Mestersvig Inlet, a natural deep draft harbor where process facility and modularized infrastructure is located; world standard design natural tailings management facility.

Aerial Rope Conveyor



Project Site

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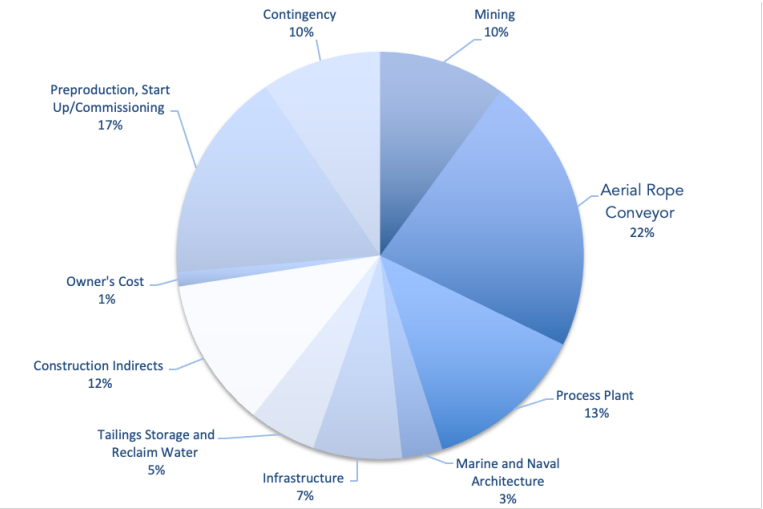
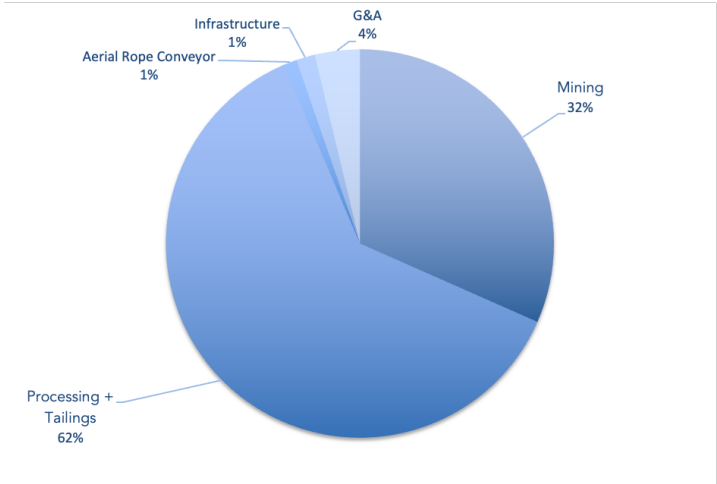
OPEX and CAPEX (NI 43-101 Feasibility Study Malmbjerg, February 2022)

CAPEX US$820 MILLION



AVERAGE LOM OPEX US$6.38/lb Mo



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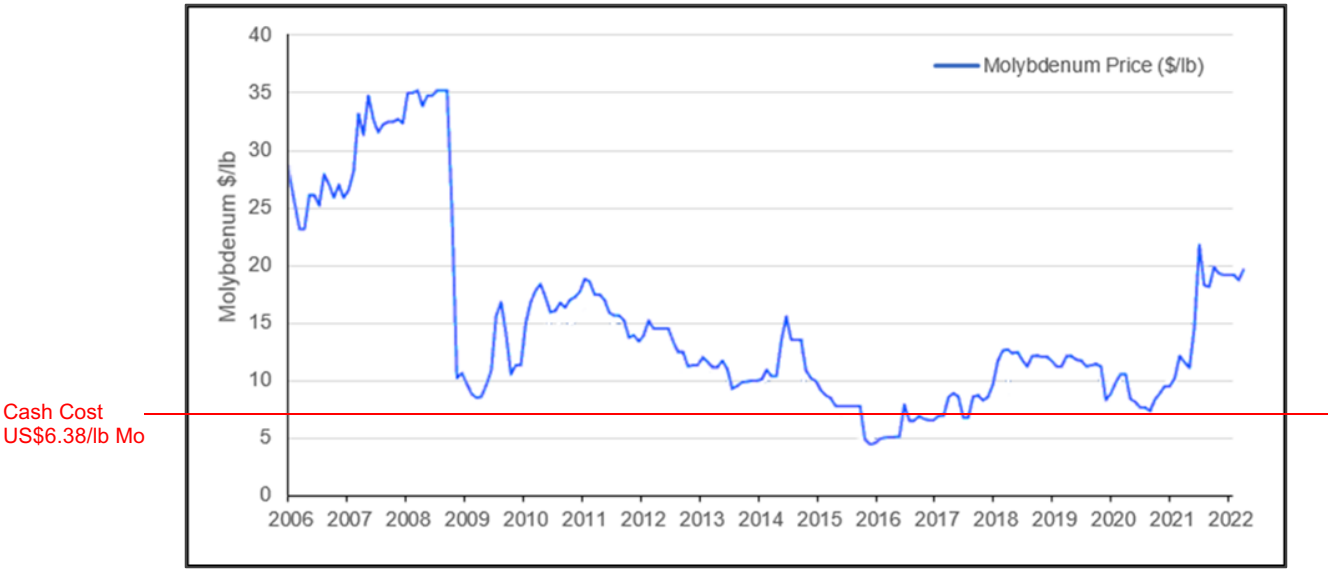
MOLYBDENUM PRICE EVOLUTION

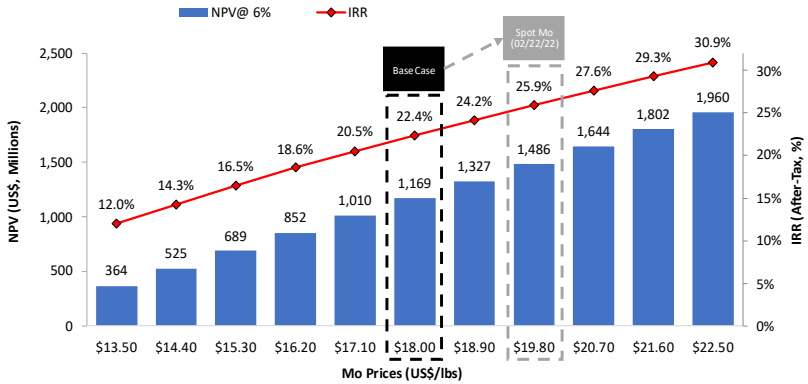


Molybdenum price, 2006 – 2022 (World Bank, 2022)

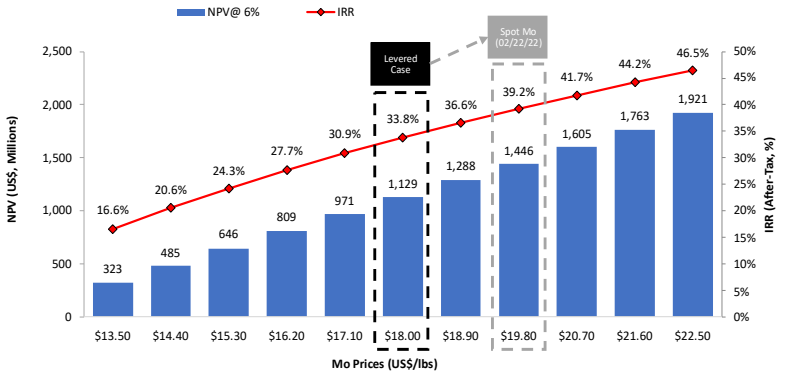
GREENLAND RESOURCES

NPV & IRR SENSITIVITY (NI 43-101 Feasibility Study Malmbjerg, February 2022)

After Tax Sensitivity of Project NPV6% and IRR to changes in US$ Molybdenum Prices for Base Case



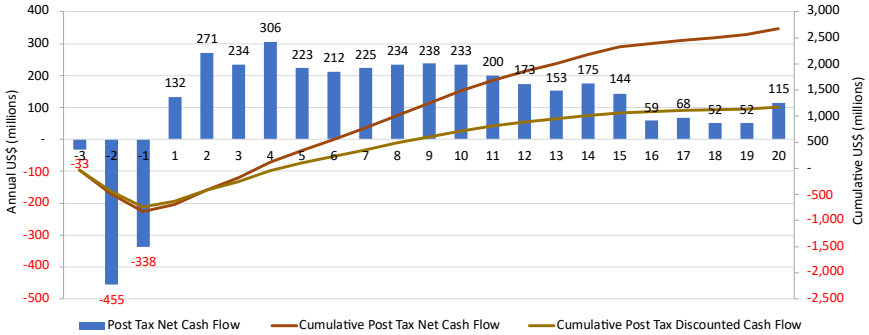
After Tax Sensitivity of Project NPV6% and IRR to changes in US$ Molybdenum Prices for Levered Case



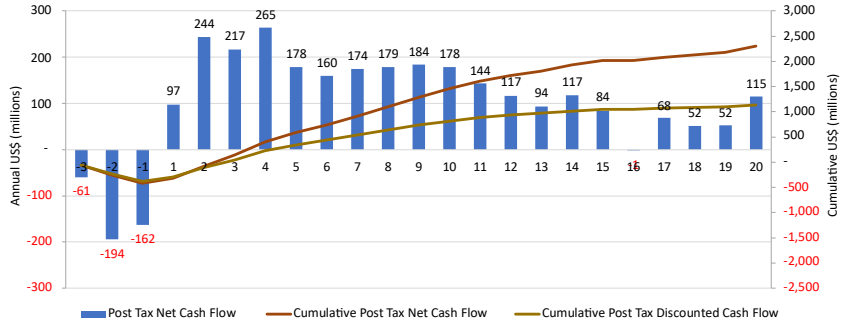
GREENLAND RESOURCES

CASHFLOW (NI 43-101 Feasibility Study Malmbjerg, February 2022)

After Tax Cashflow and Cumulative Cashflow on Base Case



After Tax Cashflow and Cumulative Cashflow on Levered Case



GREENLAND RESOURCES

LIVING IN A MATERIAL WORLD

- The world consumes **100.6 billion tonnes** of materials annually.
  - ✓ The 3.2 billion tonnes of metals produced in 2019 account for just 3% of that.
  - ✓ In comparison the annual production of cement alone is around 4.1 billion tonnes.
- Ores are naturally occurring minerals containing metals and metal compounds.
  - ✓ Metals are extracted by separating and removing the waste rock.
  - ✓ Many operating mines are facing declining ore grades.
  - ✓ The Malmbjerg ore body has a very high Molybdenum concentration with lowest level of impurities.

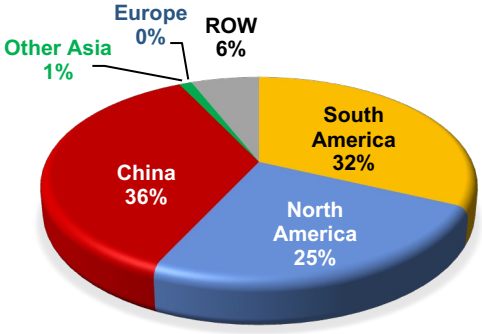
Metal/Ore	Quantity Mined (tonnes)	% of Total
Iron Ore	3,040,000,000	93.57%
Industrial Metals	207,478,486	6.39%
Technology and Precious Metals	1,335,848	0.04%
Total	**3,248,814,334**	**100%**

Sources: Circle Economy, British Geological Survey

GREENLAND RESOURCES

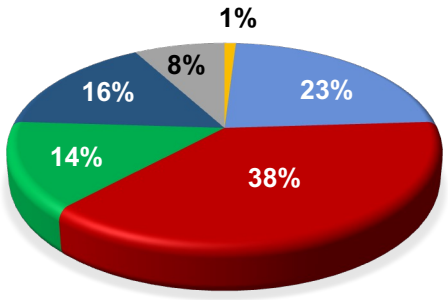
MOLY MARKET & MATH (REF. YEAR 2019)

Mo production
Ore & concentrate



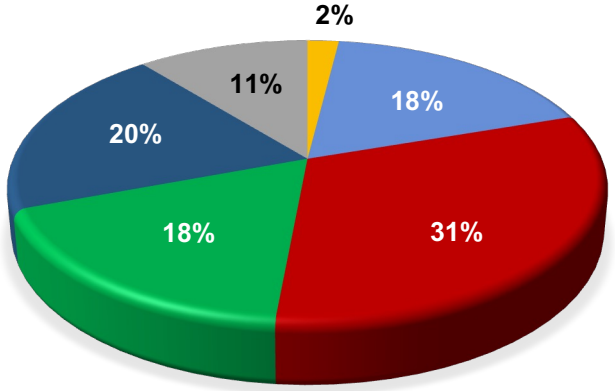
261,000 t Mo contained

Mo first use
Primary Mo consumed by steel, metal & chemical producers



261,000 t

Mo end use
Consumption by OEMs, fabricators & consumers



353,000 t
(incl. 92,000 t via scrap recycling)

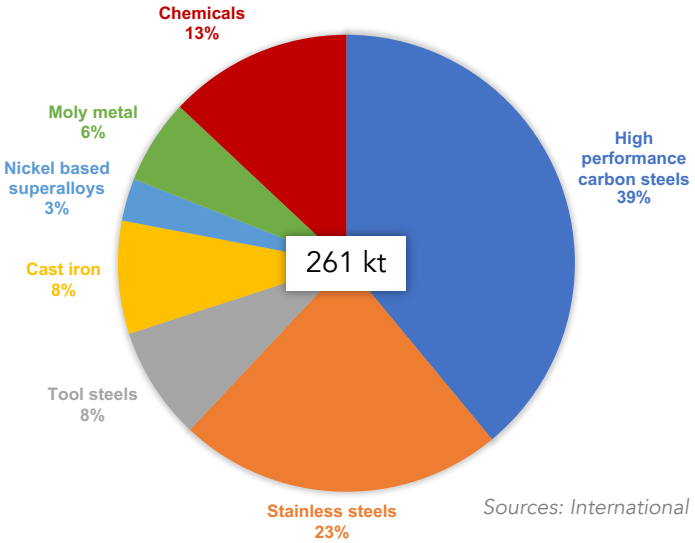
Source: International Molybdenum Association (IMOA)

- ✓ China & North America have balanced supply-demand situation.
- ✓ However, China is expected to become a net Moly importer in the future.
- ✓ Europe, Korea, Japan fully depend on overseas imports.

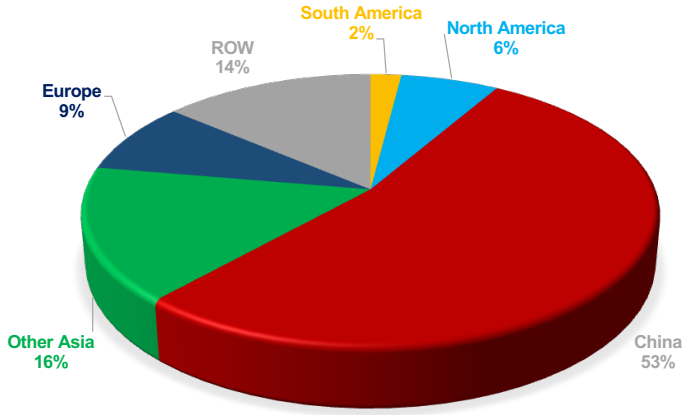
GREENLAND RESOURCES

MOLY MARKET & MATH (REF. YEAR 2019)

Mo first use consumption



World crude steel production: 1.87 billion tonnes



Sources: International Molybdenum Association (IMOA), World Steel Association

- ❑ **Metallurgical industry** stands for ~**85%** of Mo first use
- ❑ Significant Moly recycling rates established in:
- ✓ Stainless steels
- ✓ Tool steels
- ✓ Nickel based superalloys

- ❑ **European steel industry** consumes ~13% of global Mo first use.
- ✓ Focus on high performance and specialty steel products.
- ✓ Driven by local industries manufacturing high-quality capital goods.
- ✓ Historical metallurgical experience and high level of skills.
- ✓ Secure Moly supply is vital to maintain this value chain.

GREENLAND RESOURCES

MEET MOLY IN YOUR DAILY LIFE

Investment goods

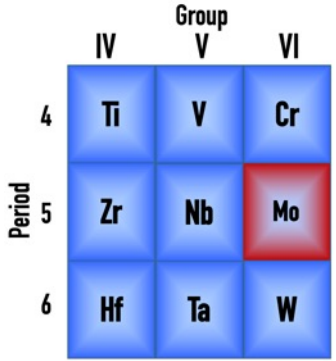
Consumer goods

It's everywhere – you just didn't realize it!

GREENLAND RESOURCES

WHY IS MOLY SO IMPORTANT TO HIGH-PERFORMANCE STEELS?

- ❑ **Commodity steel grades:**
  - ✓ Simple alloying with carbon, manganese, silicon.
  - ✓ Low value addition and large global overcapacity.
- ❑ **High-performance & special steel grades:**
  - ✓ Rely on alloying with group IV-VI metals (↓).
  - ✓ High value addition and strategically important.
  - ✓ Strong production base and know-how in **Europe**.



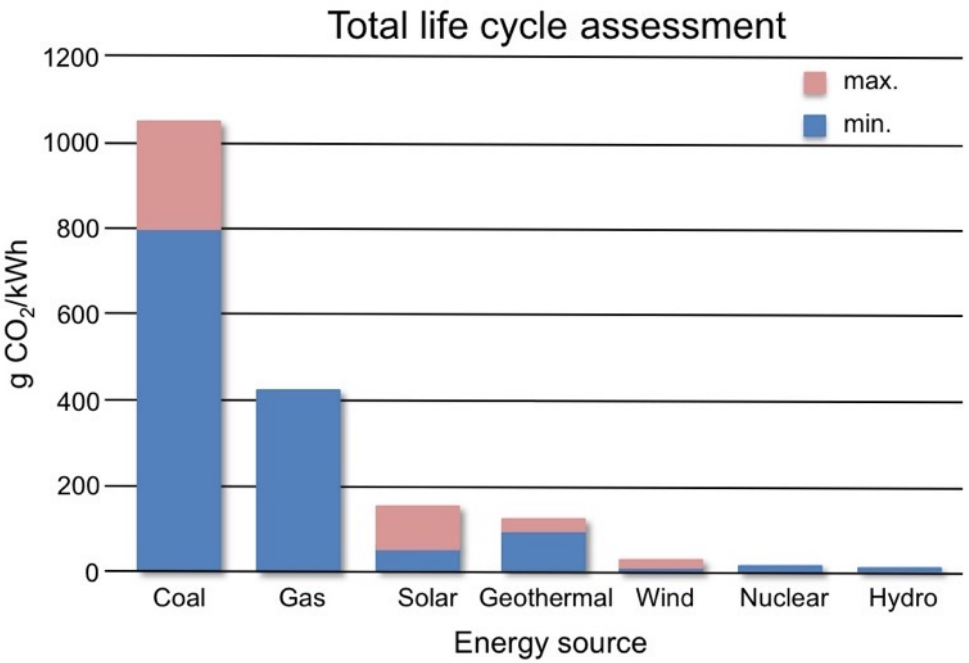
Molybdenum has the largest number of metallurgical effects.

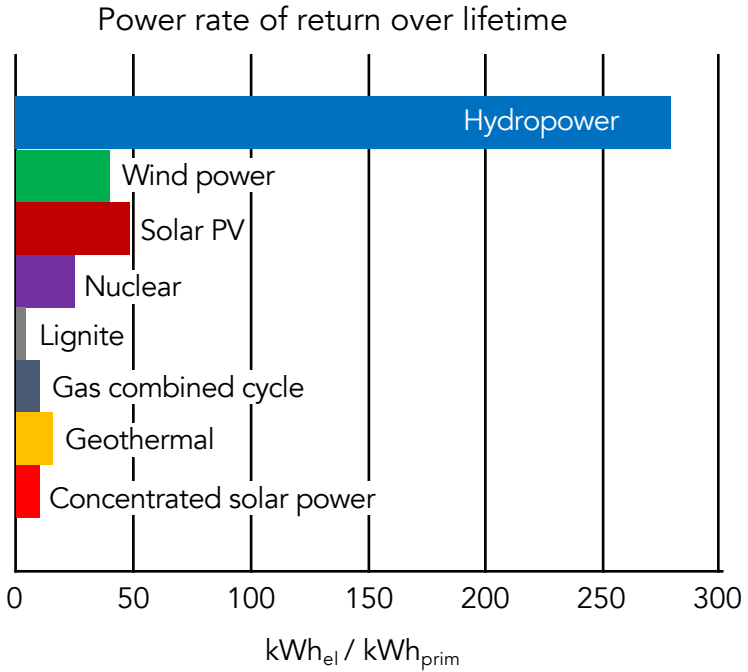
It also enhance the individual effects of the neighboring elements by metallurgical synergies.

- ❑ **Specific Molybdenum benefits in steel:**
  - ✓Increases hardenability.
  - ✓Adds to strength.
  - ✓Enhances toughness.
  - ✓Lowers hydrogen-induced cracking sensitivity.
  - ✓Imparts formability and weldability.
  - ✓Improves corrosion (pitting) resistance.
  - ✓Raises hot-strength and heat resistance.
- ❑ Enables advanced processing techniques
  - ✓ Quench & tempering.
  - ✓ Direct quenching.
  - ✓ Carburizing & gas quenching.
  - ✓ Austempering.

GREENLAND RESOURCES

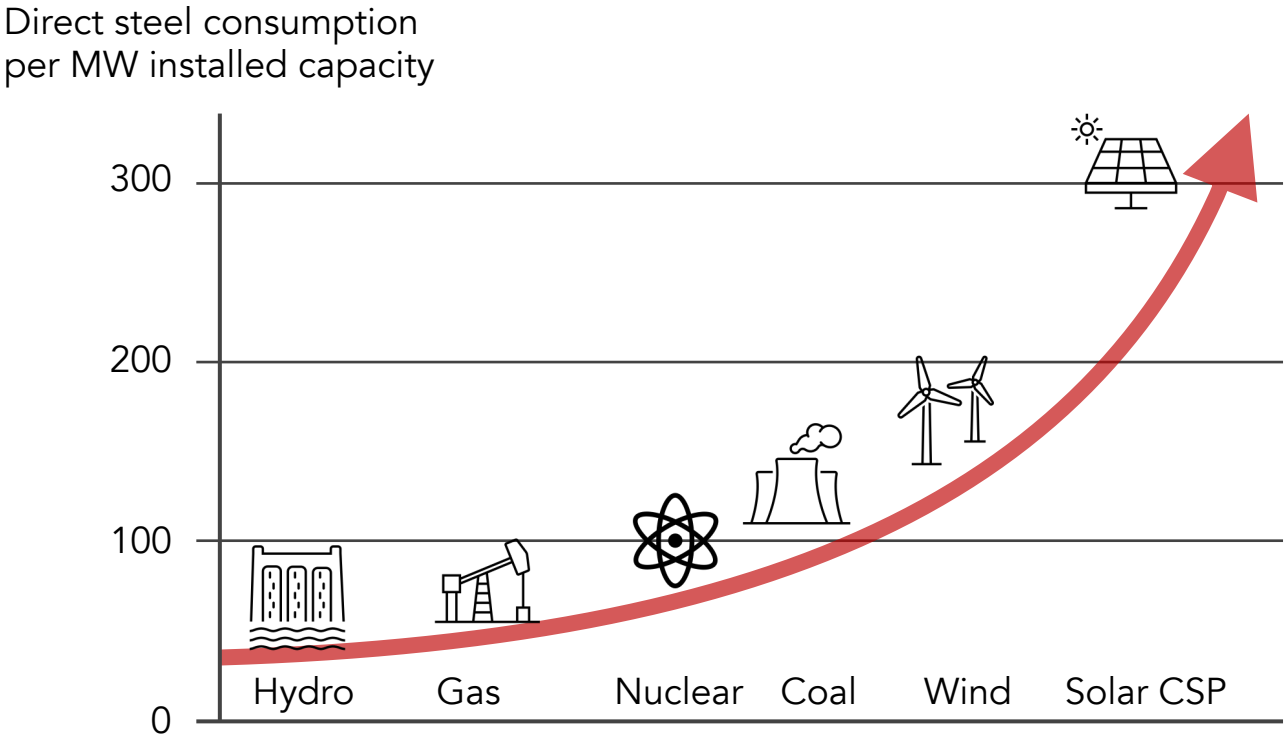
THE CARBON FOOTPRINT OF MAJOR POWER GENERATION TECHNOLOGIES





GREENLAND RESOURCES

THE STEEL INTENSITY OF MAJOR POWER GENERATION TECHNOLOGIES



GREENLAND RESOURCES

MOLY HAS "GONE WITH THE WIND"

Onshore
Installation and maintenance are less complicated and expensive.
Grid integration relatively easy.

Wind power is the most steel-intensive green energy technology (110-140 t/MW$_{installed\ capacity}$)

Direct drive technology
Based on permanent magnets
Strong need of rare earth elements

Geared drive train
Based on carburizing steels
Key alloying elements Mo and Ni

Offshore
Better wind resources.
Less turbulence / low roughness.
No physical limits in terms of size.

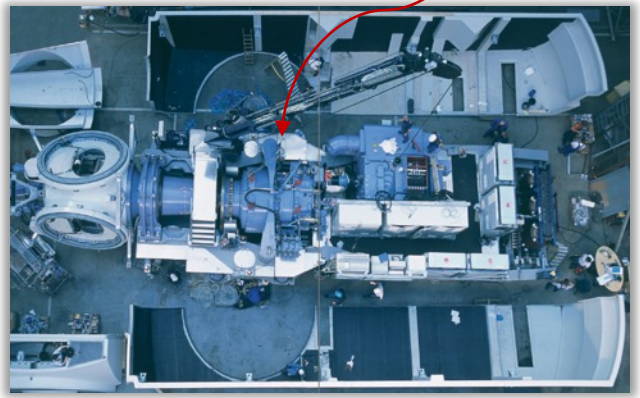
☞ Moly can help leveraging REE supply criticality

GREENLAND RESOURCES

TURNING WIND INTO ELECTRIC POWER – WITH MOLY

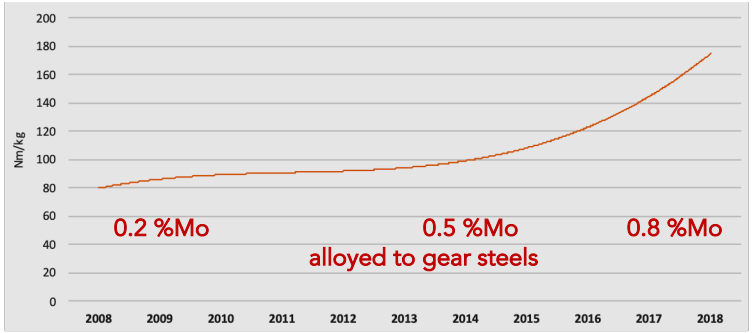
Key component "Gearbox"

Converts low rpm @ high torque
at the blade side (150-300 rpm)…



…into high rpm @ low torque at
the generator side (1200-1800 rpm)

Evolution of torque density in wind power trains



Acc. to ZF Wind power

- ✓ Increased Moly alloying in case-carburizing steels was demonstrated to significantly enhance the performance of gears under high torque density conditions (project IMOA – FZG TU Munich, https://doi.org/10.3390/met7100415).
- ✓ Gear failure due to inferior steel causes high cost for replacement and downtime (200-300 k€ onshore).

GREENLAND RESOURCES

INSTALLATION OF WINDMILLS – ANOTHER DRIVER FOR MOLY

- Mobile hoisting equipment for onshore
  - ✓ Ultra high strength Q&T steels (up to 0.8 %Mo)
- Lifting barges and jack-up platforms for offshore
  - ✓ Heavy gage TMCP or Q&T plate (up to 0.5 %Mo)


Source: multibrid.com

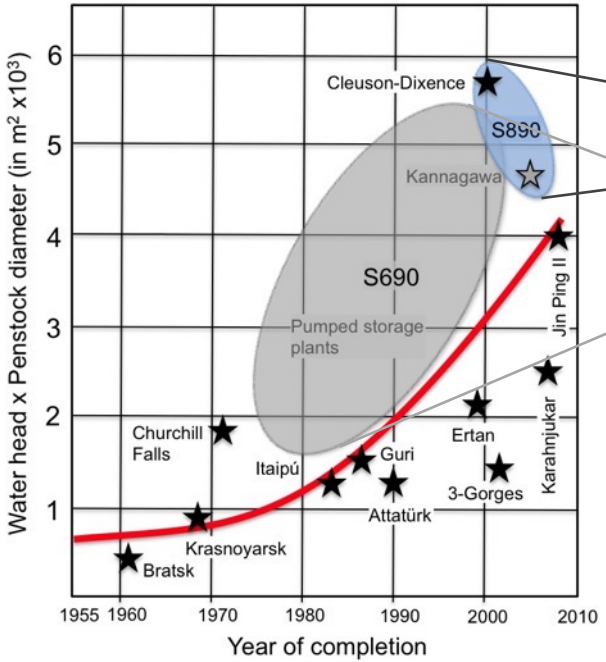

Source: repower.de

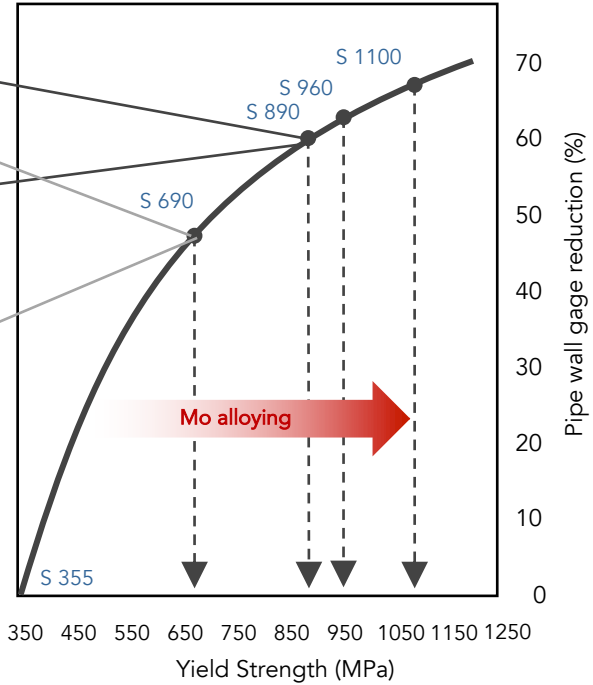
GREENLAND RESOURCES

HYDROPOWER – THE CLASSIC RENEWABLE TECHNOLOGY

Pump-storage facility, Austria

Performance evolution requiring stronger steels

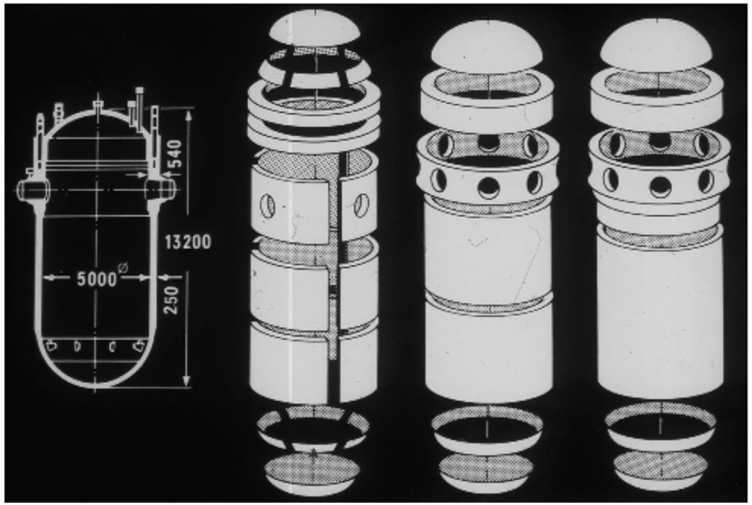




GREENLAND RESOURCES

RENAISSANCE OF NUCLEAR POWER? – MOLY SECURES THE PRESSURE VESSEL

Design evolution of nuclear reactor vessels



Part integration by large-size forgings
(reducing number of weld seams)

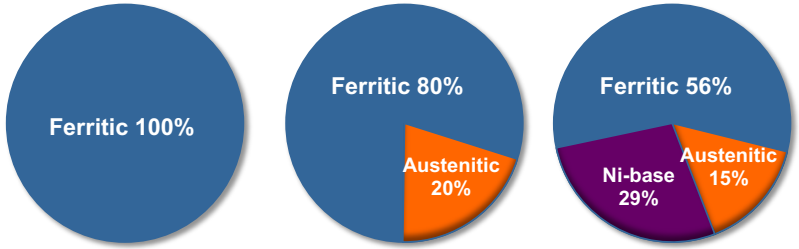
Ingot weight of 670 t.
Forging press force: 14,000 t

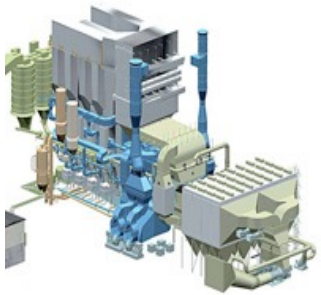
- Molybdenum content in typical reactor pressure vessel steels:
  - ✓ Min.: 0.30 %Mo
  - ✓ Max.: 0.80 %Mo
- Only few types of steels are certified for RPV components.
- Nuclear industry codes require very expensive testing programs to accept new structural material for RPV production.
- Molybdenum provides optimum balance between strength and toughness in all certified RPV steels.

GREENLAND RESOURCES

THERMAL POWER GENERATION: MATERIALS DETERMINE EFFICIENCY OF WATER-STEAM CIRCUIT

Sub-critical	Supercritical	Ultra supercritical
(Steam pressure / temp. / efficiency)		
250 bar / 540°C / <40%	280 bar / 600°C / >42%	365 bar / 700°C / >50%





The world's first super-critical coal-fired boiler was built in Lagisza, Poland with 460 MW power output (operational since 2009).

Material capability

- ❑ **Standard ferrites:**
  - ✓ 260 bar / 560°C / max. efficiency 42%
  - ✓ up to 0.5% Mo
- ❑ **Super ferrites:**
  - ✓ 285 bar / 620°C / max. efficiency 45-47%
  - ✓ up to 1.2% Mo
- ❑ **Power austenites:**
  - ✓ 285 bar / 620°C / max. efficiency 45-47%
  - ✓ up to 3% Mo
- ❑ **Superalloys (Ni-base):**
  - ✓ 365 bar / 720°C / max. efficiency 50%
  - ✓ up to 10% Mo
- ❑ Molybdenum is absolutely essential for reliable high-temperature performance of these alloys.

GREENLAND RESOURCES

MOLY IN CORROSION-RESISTANT ALLOYS

Solar thermal parabolic trough

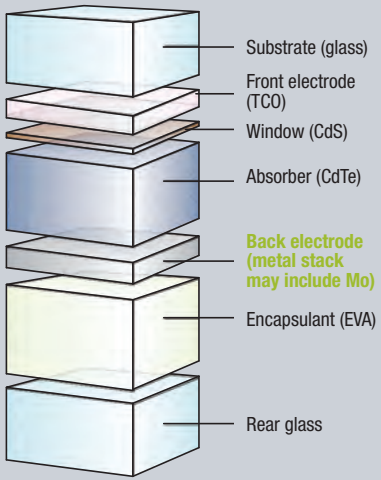
Solar thermal central tower

Geothermal

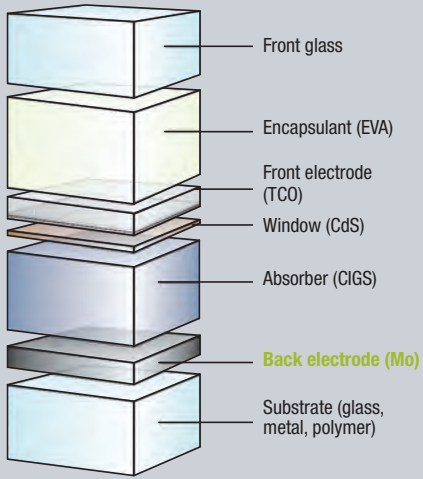
- ❑ Molten salt serves here as heat transfer and storage medium in CSP plants.
- ❑ Steels 316L and 347H (≤2 %Mo) are typically used for piping and storage tanks
- ❑ Alloy 625 (8-10 %Mo) and Alloy C-276 (15-17 %Mo) are most suitable for components involving high-temperature geothermal fluids.
- ❑ Martensitic stainless steels (≤3 %Mo) are used for valve and pump components.

GREENLAND RESOURCES

MOLY METAL IN BACK ELECTRODES OF THIN FILM SOLAR CELLS



Example of a CdTe module structure
(Layers deposited from top to bottom)



Example of a CIGS module structure
(Layers deposited from bottom to top)

Source: IMOA, Prismark Partners

- ❑ Moly metal is sputtered as back electrode having a layer thickness of 500–1000 nm in thin film solar panels.
- ❑ Verified advantages:
  - ✓ Molybdenum withstands processing temperatures of up to 650 °C.
  - ✓ Molybdenum resists high-temperature corrosion by selenium.
  - ✓ Molybdenum improves panel conversion efficiency by about 2%.

GREENLAND RESOURCES

THE RELEVANCE OF MOLY IN POWER GENERATION TECHNOLOGIES

Power generation technology	Mo kg/MW
Hydropower	3
Wind (design dependent)	99-119
Solar thermal parabolic trough	~200
Solar thermal central tower	~50
Solar PV (Si wafer)	0
Solar PV (CdTe)	5
Solar PV (CIGS)	50-100
Geothermal	~7,000
Nuclear	10
Fossil fuel sub-critical (boiler/pipe/turbine)	5
Fossil fuel USC 700 (boiler/pipe/turbine)	66

- Alone the construction of wind turbines required until 2050 acc. to the IEA's B2D scenario involves an estimated molybdenum need of 300,000 metric tons.
- The use of molybdenum in alloys for constructing the necessary transportation and installation equipment, including vessels, cranes and jack-up rigs will appreciably add to this figure.

GREENLAND RESOURCES

FORWARD LOOKING STATEMENT

This presentation contains "forward-looking information" (also referred to as "forward looking statements"), which relate to future events or future performance and reflect management's current expectations and assumptions. Often, but not always, forward-looking statements can be identified by the use of words such as "plans", "hopes", "expects", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates", or "believes" or variations (including negative variations) of such words and phrases, or state that certain actions, events or results "may", "could", "would", "might" or "will" be taken, occur or be achieved. Such forward-looking statements reflect management's current beliefs and are based on assumptions made by and information currently available to the Company. All statements, other than statements of historical fact, are forward-looking statements or information. Forward-looking statements or information in this presentation relate to, among other things: complete the feasibility study in a timely manner, and the anticipated capital and operating costs, sustaining costs, net present value, internal rate of return, payback period, process capacity, average annual metal production, average process recoveries, anticipated mining and processing methods, proposed Feasibility Study production schedule and metal production profile, anticipated construction period, anticipated mine life, expected recoveries and grades, anticipated production rates, infrastructure, social and environmental impact studies, future financial or operating performance of the Company, subsidiaries and its projects, estimation of mineral resources, exploration results, opportunities for exploration, development and expansion of the Malmbjerg Molybdenum Project, its potential mineralization, the future price of metals, the realization of mineral reserve estimates, costs and timing of future exploration, the timing of the development of new deposits, requirements for additional capital, foreign exchange risk, government regulation of mining and exploration operations, environmental risks, reclamation expenses, title disputes or claims, insurance coverage and regulatory matters. In addition, these statements involve assumptions made with regard to the Company's ability to develop the Malmbjerg Molybdenum Project and to achieve the results outlined in the Feasibility Study, and the ability to raise capital to fund construction and development of the Malmbjerg Molybdenum Project.

These forward-looking statements and information reflect the Company's current views with respect to future events and are necessarily based upon a number of assumptions that, while considered reasonable by the Company, are inherently subject to significant operational, business, economic and regulatory uncertainties and contingencies. These assumptions include: our mineral reserve estimates and the assumptions upon which they are based, including geotechnical and metallurgical characteristics of rock confirming to sampled results and metallurgical performance; tonnage of ore to be mined and processed; ore grades and recoveries; assumptions and discount rates being appropriately applied to the technical studies; success of the Company's projects, including the Malmbjerg Molybdenum Project; prices for molybdenum remaining as estimated; currency exchange rates remaining as estimated; availability of funds for the Company's projects; capital decommissioning and reclamation estimates; mineral reserve and resource estimates and the assumptions upon which they are based; prices for energy inputs, labour, materials, supplies and services (including transportation); no labour-related disruptions; no unplanned delays or interruptions in scheduled construction and production; all necessary permits, licenses and regulatory approvals are received in a timely manner; and the ability to comply with environmental, health and safety laws. The foregoing list of assumptions is not exhaustive.

FORWARD LOOKING STATEMENT

The Company cautions the reader that forward-looking statements and information include known and unknown risks, uncertainties and other factors that may cause actual results and developments to differ materially from those expressed or implied by such forward-looking statements or information contained in this presentation and the Company has made assumptions and estimates based on or related to many of these factors. Such factors include, without limitation: the projected and actual effects of the COVID-19 coronavirus on the factors relevant to the business of the Corporation, including the effect on supply chains, labour market, currency and commodity prices and global and Canadian capital markets, fluctuations in molybdenum and commodity prices; fluctuations in prices for energy inputs, labour, materials, supplies and services (including transportation); fluctuations in currency markets (such as the Canadian dollar versus the U.S. dollar versus the Euro); operational risks and hazards inherent with the business of mining (including environmental accidents and hazards, industrial accidents, equipment breakdown, unusual or unexpected geological or structure formations, cave-ins, flooding and severe weather); inadequate insurance, or the inability to obtain insurance, to cover these risks and hazards; our ability to obtain all necessary permits, licenses and regulatory approvals in a timely manner; changes in laws, regulations and government practices in Greenland, including environmental, export and import laws and regulations; legal restrictions relating to mining; risks relating to expropriation; increased competition in the mining industry for equipment and qualified personnel; the availability of additional capital; title matters and the additional risks identified in our filings with Canadian securities regulators on SEDAR in Canada (available at www.sedar.com). Although the Company has attempted to identify important factors that could cause actual results to differ materially, there may be other factors that cause results not to be as anticipated, estimated, described or intended. Investors are cautioned against undue reliance on forward-looking statements or information. These forward-looking statements are made as of the date hereof and, except as required by applicable securities regulations, the Company does not intend, and does not assume any obligation, to update the forward-looking information. Neither the NEO Exchange Inc. nor its regulation services provider accepts responsibility for the adequacy of this presentation. No stock exchange, securities commission or other regulatory authority has approved or disapproved the information contained herein. The presentation has been reviewed and approved by Mr. Jim Steel, P.Geo., M.B.A. a Qualified Person as defined by Canadian Securities Administrators National Instrument 43-101 "Standards of Disclosure for Mineral Projects".

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