

Telsa Unveils 'Masterplan 3' and Ways to Invest in Renewable & Energy Transition Companies

written by Matt Bohlsen | April 17, 2023

[Tesla](#)'s (NASDAQ: TSLA) [Master Plan 3](#) was released in detail on April 5, 2023, and it gives the world a road map on how the world can transition to a clean sustainable energy future. It is arguably one of the most important documents ever released in history.

Key pillars of the plan include re-powering the existing grid with renewables (including solar, wind, geothermal, and hydro), switching to electric vehicles ("EVs"), switching to heat pumps, and some use of green hydrogen for high-temperature applications. Elon Musk also supports smart nuclear as a good base load power option, especially when compared to fossil fuel power, especially coal.

To achieve this, the world needs to build out a new infrastructure and a key part is stationary energy storage, mostly using batteries. Musk's Master Plan 3 suggests we need a massive 240 TWh of energy storage globally to support both energy production and EVs. To get some perspective on this number, in 2022, the world produced only about [700 GWh](#) of lithium-ion batteries. 240 TWh is equal to 240,000 GWh, which is **342x** the current 700 GWh.

Of course, other energy storage apart from lithium-ion can be used, but certainly, the electric transport sector will rely on lithium-ion and it is estimated to need 112 TWh of the total 240

TWh needed. If the world was to steadily grow and reach 20TWh per annum (“pa”) of new energy storage production starting in 2030, then it would take 12 years ($240/20=12$) to reach the end goal sometime around 2042. In terms of costs, the plan suggests it would cost about US\$10 trillion, which is only 10% of the world’s 2022 GDP. Also because electrification for transport and heat pumps are much more efficient, then the world would only need to produce 1/2 as much energy.

Tesla Master Plan 3 – The world needs 240 TWh of energy storage to become clean energy sustainable and avoid using fossil fuels



Figure 2: Estimated Resources & Investments Required for Master Plan 3

Source: [Tesla Master Plan 3 \(April 5, 2023\)](#)

Investing in renewable & energy transition companies

One way to cover many of the areas discussed above is via some or all of the Sprott ETFs shown below:

- [Sprott Energy Transition Materials ETF](#) (NASDAQ: SETM)
- [Sprott Physical Uranium Trust](#) (TSX: U.UN | OTCQX: SRUUF)
- [Sprott Uranium Miners ETF](#) (NYSE: URNM)
- [Sprott Junior Uranium Miners ETF](#) (NASDAQ: URNJ)
- [Sprott Lithium Miners ETF](#) (NASDAQ: LITP)
- [Sprott Nickel Miners ETF](#) (NASDAQ: NIKL)

- [Sprott Junior Copper Miners ETF](#) (NASDAQ: COPJ)

Some other EV, battery, and battery metals ETFs include:

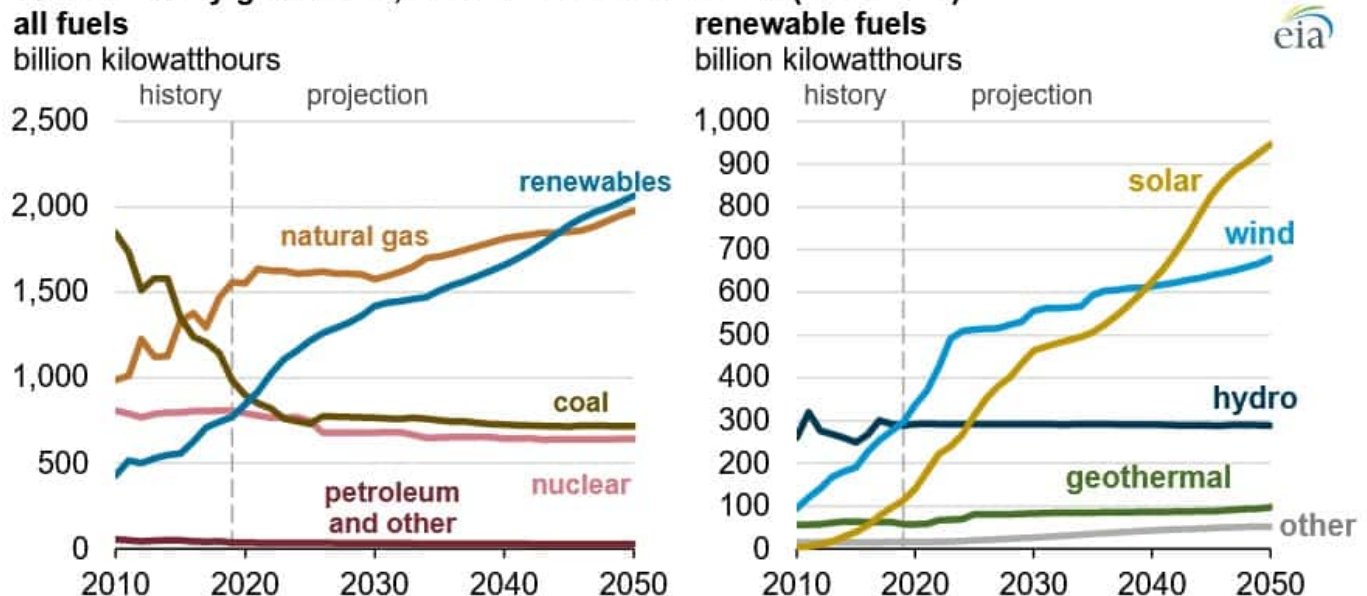
- [Amplify Lithium & Battery Technology ETF](#) (NYSE Arca: BATT)
- [ProShares S&P Global Core Battery Metals ETF](#) (NYSE Arca: ION)
- [Global X Lithium & Battery Tech ETF](#) (NYSE Arca: LIT)

The fact that renowned investor Eric Sprott has recently added several new energy transition ETFs bodes well for the various sectors. It also helps individual and professional investors gain broad access to these markets via a single ticker.

Another way to invest in these themes is via companies covered by [InvestorIntel.com](#). Probably the best place to start is looking under the [Critical Minerals & Rare Earths](#) tab and the [ESG & Cleantech](#) tab.

EIA data and forecasts showing solar and wind to grow the fastest to 2050

U.S. electricity generation, AEO2020 Reference case (2010-2050)



Source: U.S. Energy Information Administration, [Annual Energy Outlook 2020](#)

Closing remarks

Tesla continues to lead the world toward a clean and sustainable energy future. Their Master Plan 3 gives a concise and detailed picture of what needs to be done. It details solar and onshore wind as the two cheapest forms of energy production ([page 19](#)) and lithium-ion batteries as the cheapest energy storage ([page 18](#)) solution.

The clean energy transition has already begun with solar and wind as the fastest-growing new energy generation globally and battery energy storage global growth is [set to double in 2023](#). To meet all the 240 TWh of global energy storage needed, lithium-ion battery capacity would need to grow by several hundred times. The global electric vehicle market share [reached 13%](#) in 2022 and is a key part of this megatrend.

The global energy transition and transport electrification is the biggest trend of our time, at least until the full build-out is completed by approximately 2050. Investors should embrace the change and understand it is inevitable.

Our children, grandchildren, and future generations will also want to enjoy a clean planet one day.

COP26 **focuses** **investor**

interest on the critical materials required for a cleantech global vision

written by InvestorNews | April 17, 2023

COP26 is now completed and the changes will impact the cleantech sector in the years ahead. Some came away disappointed at the lack of commitment from the 197 participating countries at COP26; however, there were many positive steps as outlined below.

The major outcomes from COP26

- The “[Glasgow Climate Pact](#)” was introduced. It aims to limit global warming to 1.5 °C. It calls for a more ambitious climate response on cutting emissions, climate management finance, and pledging to double adaptation finance, and funding for loss and damage already being caused by warming. Countries were asked to “revisit and strengthen” their climate pledges by the end of 2022.
- New transparency rules to ensure countries report sufficient information to determine whether or not they are meeting their pledges.
- The first ever COP decision to explicitly target action against fossil fuels, calling for a “phase-down” of unabated coal and “phase-out” of “inefficient” fossil-fuel subsidies.
- COP26 finalised rules for global carbon trading; however under the rules, the fossil fuel industry [will be allowed to](#) “offset” its carbon emissions and carry on polluting.
- [Record-breaking](#) pledges of US\$365 million to the [Adaptation Fund](#). This was a tripling of the amount raised

last year, with first time contributions from the USA and Canada.

Note: The Adaption Fund is set up to help developing countries build resilience and 'adapt' to climate change.

Sectors and companies to benefit from the COP26 changes

The renewable energy sector will continue to be a beneficiary. In particular, solar, wind, hydro, and geothermal energy. So too will nuclear energy benefit. The push for a global warming increase limited to 1.5 °C, and the focus for countries to revisit and strengthen their climate pledges by the end of 2022, should also be a positive catalyst going forward for renewables and nuclear energy.

Carbon capture and storage ("CC&S") should also continue to benefit. The "phase-down" (not "phase-out") of coal means CC&S can continue to play a role to reduce carbon emissions.

Zero-emission vehicles such as electric vehicles ("EVs") indirectly got a boost with the COP26 decision to phase down "inefficient" fossil-fuel subsidies. If implemented fossil fuels would become relatively more expensive making EVs relatively more attractive.

Those companies working in the cleantech sector will benefit from the renewed COP26 push to reduce emissions.

Many InvestorIntel member companies set to benefit

When you look over the list of [InvestorIntel member companies](#) the standout feature is that many are involved, either directly or indirectly, in the cleantech and green related sectors. For example, [Carbon Streaming Corporation](#) (NEO: NETZ) invests into **carbon credits**, [Cielo Waste Solutions Corp.](#) (TSXV: CMC | OTCQB:

CWSFF) turns polluting **waste into renewable fuel**, [dynaCERT Inc.](#) (TSX: DYA | OTCQX: DYFSF) **reduces emissions** from vehicles, [H2O Innovation Inc.](#) (TSXV: HEO | OTCQX: HE0FF) uses technologies to **create clean water** and treat wastewater, [Ideanomics, Inc.](#) (NASDAQ: IDEX) is investing in and **supporting the EV industry**, [Nano One Materials Corp.](#) (TSX: NANO) works to develop and commercialize **better and cheaper cathodes** for lithium ion batteries, and [NEO Battery Materials Ltd.](#) (TSXV: NBM) is **developing silicon anodes for lithium ion batteries..**

The mining companies that produce or are working to produce the raw materials that go into solar and wind energy, as well as electric vehicles, batteries, and other energy storage products, stand to benefit. This includes the **rare earths** ([Appia Rare Earths & Uranium Corp.](#) (CSE: API | OTCQB: APAAF), [Search Minerals Inc.](#) (TSXV: SMY | OTCQB: SHCMF), [USA Rare Earth, LLC](#), [Vital Metals Limited](#) (ASX: VML); **lithium** ([Avalon Advanced Materials Inc.](#) (TSX: AVL | OTCQB: AVLNF), [Critical Elements Lithium Corporation](#) (TSXV: CRE), [Neo Lithium Corp.](#) (TSXV: NLC); **cobalt** ([CBLT Inc.](#) (TSXV: CBLT), [Global Energy Metals Corporation](#) (TSXV: GEMC); **graphite**; **nickel** ([Nickel 28 Capital Corp.](#) (TSXV: NKL); **manganese**; **copper** ([Kodiak Copper Corp.](#) (TSXV: KDK), [Murchison Minerals Ltd.](#) (TSXV: MUR); **vanadium** and **scandium** ([Imperial Mining Group Ltd.](#) (TSXV: IPG), [Scandium International Mining Corp.](#) (TSX: SCY). Another is the rare earths' **magnet materials** maker [Neo Performance Materials Inc.](#) (TSX: NEO).

Finally, a phase-down of coal is a positive for the smart nuclear sector and hence the **uranium miners** and explorers such as [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR), [Ur-Energy Inc.](#) (NYSE American: URG | TSX: URE), [Western Uranium & Vanadium Corp.](#) (CSE: WUC | OTCQX: WSTRF), [Fission 3.0 Corp.](#) (TSXV: FUU | OTCQB: FISOF), [Appia Rare Earths & Uranium Corp.](#) (CSE: API | OTCQB: APAAF), and [Azincourt Energy Corp.](#) (TSXV: AAZ).

Closing remarks

COP26 was perhaps more successful than what some are reporting. The phase-down of coal is a good achievement, with India joining this for the first time. The new transparency rules are underappreciated, given currently that there are no penalties for not following the climate change targets (only naming and shaming). New rules for global carbon credits trading are also a positive step forward. Also, the tripling of pledges to the Adaptation Fund to help developing countries is welcome.

Investors could look through the list of [InvestorIntel members](#) and select the companies that they think best align with the COP26 changes and the massive trend towards reducing emissions and producing green energy and technology this decade.

See you next time for COP27 in November 2022, this time in Egypt.

US based rare earths processor, Energy Fuels announces a very robust third quarter

written by Tracy Weslosky | April 17, 2023

With COP26 just past its middle mark today, the stock rallies jettison around critical materials such as rare earths, cobalt, and lithium for electric battery materials, we at [InvestorIntel.com](#) are being deluged by interest from investors

due to our editor in chief [Jack Lifton](#)'s reputation as a renowned authority. Add in uranium, which is finally getting some attention it deserves with greater education in place on the value of [nuclear energy](#) as a leading cleantech solution, Obama's speech at COP26 that astutely draws attention to the global pollutant leaders, China coming in at a strong #1, and yes, the USA – we are #2.

In this drive to clean up the planet, however, let us draw attention to a global leader as the world forges ahead to a [Net Zero economy](#) in the next 20-30 years – [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR).

North America's only processor of rare earths, Energy Fuels provided a very robust [third quarter report](#) earlier last week. The company owns the White Mesa Mill in southeast Utah, which is also the US's only commercial licensed processor of radioactive materials.

Energy Fuels has a strong balance sheet and ended the quarter with US\$100.8 million in cash and marketable securities as well as \$29.3 million of inventory, which has a current estimated value of \$46.9 million, made up of 691,000 pounds of uranium and 1,672,000 pounds of high-purity vanadium, both in the form of an immediately marketable product.

Mark Chalmers, Energy Fuels' President and CEO, said it best: "Energy Fuels continues to make rapid progress toward positioning our White Mesa Mill as America's "Critical Minerals Hub," by maintaining the Mill's key uranium and vanadium production capabilities while further diversifying our portfolio to include rare earth elements production – an exciting and strategically important move both domestically and for the Company. We also continue to watch the uranium markets closely in order to best evaluate our opportunities to capitalize on

recent price increases and market improvements.”

The company also has been focusing its asset base on the sale of non-core, conventional uranium projects located in the United States in late October. The sale included cash on closing, shares in the purchasing company, future potential processing revenue as well as future potential payments based on new production from these assets.

The strategic positioning of Energy Fuels should not be underestimated by anyone following this sector. The global drive to Net Zero requires a massive amount of “clean energy”. This clean energy is destined for millions of new electric motors in wind turbines, electric vehicles and the never-ending consumption of small, strong permanent magnets in personal electronic devices. The demand so far outstrips the current supply that it is an almost inconceivable problem as the Western world seeks to eliminate the Chinese supply chain for critical materials.

Energy Fuels currently has the only facility in North America that is on track to start meeting this demand. They successfully [delivered rare earth](#) carbonate to [Neo Performance Materials Inc.](#)’s (TSX: NEO) rare earths separation facility in Estonia. The company has a supply agreement for monazite sand from a United States supplier and is receiving multiple inbound expressions of interest for rare earths processing from potential suppliers around the globe.

The indisputable fact is that the clean energy economy will cost trillions of dollars and require resources that are not even in existence. We pledge as leaders in news and information on the critical materials sector to continue regular coverage of companies in the capital markets that are making a real difference.

Note from the Publisher: Tracy Weslosky is long Energy Fuels and Neo Performance Materials.

With 7 Analysts on board and up almost 140% in the past twelve months this attractive water pure-play is a true ESG

written by InvestorNews | April 17, 2023

On May 13, **H2O Innovations (TSXV: HEO | OTC: HEOFF | FSE: DB: H301)** [announced](#) fiscal third-quarter financial results for the month ending March 31, 2021.

The company started the year off strong with quarterly revenue up 8.6% year-over-year and net earnings hitting C\$2.1 million in the quarter, up from a loss of C\$3.1 million in the same fiscal period last year.

H2O beat analysts' consensus revenue and earnings estimates as revenue hit C\$39.2 million in the quarter, up from C\$36.1 million in the same quarter last year, with revenue increases coming from both organic growth and through acquisitions.

Gross profit margins remained strong at 28%, consistent with the margins last year, and adjusted EBITDA reached C\$4.5 million or 11.5% of revenues, compared to C\$3.8 million, or 10.5 % of revenues, for the same fiscal period last year.

Most importantly, operational cash flows hit a record C\$10.2

million in the quarter up from C\$0.9 million in the comparable quarter of the previous fiscal year.

Understanding H2O

H2O is a Canadian wastewater treatment solutions company that designs, builds, and supports facilities based on membrane filtration technologies for municipal, industrial, energy, and natural resources end-users.

H2O operates through three main business segments:

1. *Water Technologies and Services (WTS)*, which designs and builds custom water, wastewater, and water reuse systems and treatment plants, with more than 750 systems installed in North America;
2. *Specialty Products (SP)*, which develops specialized chemicals and consumables from its subsidiaries, such as **Maple**, **PWT**, **Genesys**, and **Piedmont**, and distributes through a network of over 100 partners; and,
3. *Operation and Maintenance (O&M)*, which operates more than 275 facilities in 12 states in the U.S. and two Canadian provinces.

Figure 1: Three main business segments – Water Technologies and Services (WTS), Specialty Products (SP), and Operation and Maintenance (O&M)



[Source:](#)

Solid Pipeline of New Sales and Renewals

Earlier this month, **H2O** announced winning two new projects and renewed four operation and maintenance contracts in the O&M business segment, with a total value of C\$3.3 million. With

these contracts, the total O&M backlog increased to C\$63.5 million.

The new contracts comprise the operation, maintenance, and management of a Municipal water treatment facility in Texas and the operation and maintenance of an effluent treatment facility at an agriculture-food processing plant in Alberta, Canada.

H2O also renewed four municipal O&M contracts in Vermont with the first contract renewed for over five years, the second and third contracts extended for five years, and the fourth contract was renewed until March 2022.

M&A Driving Growth

As part of its 3-year strategic plan [announced](#) in December 2020, **H2O** commented that it intended to complete between two to four acquisitions within the next 30 months.

In February 2021, the company closed the acquisition of the remaining 76% of [Genesys Membrane Products \(GMP\)](#) in Spain that it originally had taken a 24% ownership stake in through the acquisition of **Genesys** in the United Kingdom in 2019.

GMP reported revenue of approximately €5.00 million (C\$7.75 million) in 2020 of which 24% was already accounted for in H2O financials.

GMP expands the company's specialty chemical products and laboratory services to an international distributor network that focuses on Latin America, primarily within the mining industry.

In July 2020, **H2O** [announced](#) a C\$3.7 million acquisition of [Gulf Utility Service \(GUS\)](#), a U.S. water utilities company. **GUS** booked revenue of approximately US\$5.0 million and EBITDA of US\$0.6 million in 2019.

In the recent quarter, over 95% of the revenue growth was from its recent M&A activity; the **GUS** acquisition contributed C\$1.3 million in additional revenue and the acquisition of **GMP** in February contributed an additional C\$1.5 million in revenue.

Biden's Infrastructure Plan Adding Billions to a Hundred-Billion-Dollar Market

In April, the U.S. legislators passed the "Drinking Water and Wastewater Infrastructure Act of 2021" that authorizes almost US\$35 billion over five years to a variety of programs focused on safe drinking water, wastewater treatment, sewer overflows, and stormwater management.

This Act is only the first part of President Biden's US\$111 billion plan for water infrastructure improvements as a component of the [American Jobs Plan](#).

In H2O's recent quarterly conference call, CEO Frédéric Dugré stated, "we want to reiterate that we welcome very positively the \$30 billion water-related infrastructure plan announced earlier by President Biden at the end of April. We believe many opportunities will emerge from this stimulus plan, notably for new water reuse projects in order to fight back the growing water scarcity mode in Southern states."

Even without these new U.S. government funding initiatives, the global water market is expected to grow from US\$854.0 billion this year to US\$914.9 billion by 2023, according to the latest report published by **Global Water Intelligence (GWI)**.

GWI's Global Water and Wastewater Treatment market consist of both operating and capital expenditures by utilities and industrial water users on water and wastewater.

The Water and Wastewater Treatment market experienced renewed

activity and high growth due to declining water qualities and growing demand for cost-efficient and environmentally friendly water technologies and services.

However, several challenges hinder the Water and Wastewater Treatment market, including high capital costs for equipment, outdated and inefficient water infrastructures. Companies such as **H2O** benefit as governments look to reduce costs by shifting operations to third-party Water and Wastewater Treatment companies.

Final Thoughts

As Environmental, Social, and Governance (ESG) investing causes a shift towards finding long-term financial returns that are aligned with social values, H2O remains an attractive water pure-play with a strong balance sheet, a large sales backlog, and profits.

H2O's stock is currently trading at C\$2.40 per share, up almost 140% in the past twelve months. Seven analysts cover the company, all with a "Buy" rating, and price targets ranging from C\$3.25 to C\$4.00. Currently, H2O has a market cap of C\$197.4 million.

Adding dynaCERT to Your CleanTech Portfolio

written by InvestorNews | April 17, 2023

After spending 16 years and over \$60 million to develop its CleanTech technology, [dynaCERT Inc.](#) (TSX: **DYA** | OTCQX: **DYFSF** |

FSE: DMJ) hit major milestones in 2020, with the potential for an even better 2021.

As part of the growing global hydrogen economy, dynaCERT manufactures and distributes Carbon Emission Reduction Technology (CERT) for use with diesel engines.

Its flagship product, HydraGEN™, uses a patented process to generate hydrogen and oxygen on-demand, through an electrolysis system and supply the gases through the air intake to enhance combustion, reduce pollution emissions (by up to 50%), and improve fuel efficiency (by up to 19%).

dynaCERT estimates that a unit will pay for itself in fuel savings in about a year.

Key 2020 milestones included:

- In May, **dynaCERT** [received](#) **a purchase order for 3,000 HydraGEN™ units** from KarbonKleen Inc. and signed KarbonKleen as a dynaCERT's Preferred Service Provider, covering the trucking market in the United States.
- In August, dynaCERT [signed](#) a Dealer Agreement with Sparta Group's (TSXV: SAY) affiliate TruckSuite Canada Ltd. and **received an order for 150 HydraGEN™ units** from TruckSuite.
- In June, the Company [closed](#) **a C\$8.4 million stock offering** and, as of its latest financials, had \$16.2 million in cash.
- In July, dynaCERT [reopened](#) an updated Assembly Plant in Toronto, Ontario, Canada that was retrofitted with a **new semi-automated assembly system that can assemble up to 6,000 units per month, representing potential sales of almost \$445 million per year at full capacity.**
- The city of Woodstock, Ontario, Canada [signed](#) a deal with dynaCERT to equip Woodstock's diesel-powered vehicles with

HydraGEN™ Technology. Woodstock is the first major North American city to sign an agreement with dynaCERT.

- dynaCERT also [established](#) a 100%-owned subsidiary called dynaCERT International Strategic Holdings Inc. (“DISH”) that will be used to strategically invest in CleanTech companies directly involved with dynaCERT’s solutions, including funding a monthly subscription option to facilitate sales of HydraGEN™ units.
- dynaCERT also [launched](#) its freight management software, HydraLytics™, as a new stand-alone offering into the FreightTech industry. The Company’s PaaS (Platform as a Service) solution aggregates vehicle data to create actionable intelligence and presents the information in an easy to use interface.
- In order to broaden the company’s appeal to a larger shareholder base, including institutional shareholders, dynaCERT [graduated](#) its stock listing to the TSX from the TSX Venture Exchange and, in the United States, graduated to the OTCQX Best Market.

Diesel Engine Market

The diesel engine market is massive – an estimated 1 billion diesel engines operate around the world.

dynaCERT’s technology works with many types of diesel engines used in various industries including construction, forestry, mining, power generation, and transportation (trucks, marine, railroad), to name a few.

dynaCERT has over 45 dealers around the world selling its HydraGEN™ technology to truck owners, commercial fleets, and governments that use diesel engines.

Even with the advent of electronic and hydrogen vehicles, it is

estimated diesel engines will still dominate the commercial vehicle market due to factors such as durability, reliability, and low-cost operation. According to [a report by IHS Markit](#), by 2040, 60% of new medium and heavy commercial vehicles sold in the United States will still be fueled by diesel.

Environmental Pressures

After the coronavirus pandemic passes and with president-elect Biden campaigning on a pro-environment platform, greater air pollution restrictions are likely to be enacted in 2021.

Reductions in carbon dioxide (CO₂), nitrogen oxides (NO_x), and particulate matter (PM) are keys to cleaner diesel engines and dynaCERT's technology can help lower these toxic emissions.

Two Hundred Million Dollar Market Cap – Billion Dollar Opportunity

In November 2019, famous Canadian mining investor [Eric Sprott](#) made his first significant CleanTech investment by investing \$14 million in dynaCERT.

With a market cap of only C\$205 million and the current billion-dollar size of the market, there is still plenty of upside for dynaCERT's stock price. The analyst's estimate target price is C\$2.20, which represents a potential return of over 300%.



[Source:](#)

Nano One's Dan Blondal talks about their unique high-voltage cobalt-free battery and many partnerships

written by InvestorNews | April 17, 2023

In a recent InvestorIntel interview, Peter Clausi talks to Dan Blondal, CEO, Director & Founder of [Nano One Materials Corp.](#) (TSXV: NNO) about their recent news about their unique high-voltage cobalt-free battery. Dan Blondal explains how their breakthrough LNM material, also known as high voltage spinel, is a cobalt-free, low-cost cathode material that provides improved efficiency, thermal management and power.

“Our process is to develop the processes for making these cathode materials,” Dan Blondal says in the interview, “the cathode materials themselves, batteries that use the cathode materials, and then license that technology, or joint venture with partners on manufacturing.” He went on to explain how Nano One’s LNM cathode is a leading candidate for next generation lithium-ion and solid-state batteries because its durability and dimensional stability enable a stable interface.

In this InvestorIntel interview, which may also be [viewed on YouTube](#), Dan went on to say “Our DNA is in process innovation,” he continued, “and we look to partner with people who understand how to control supply chain” as well as “understand manufacturing and have the supply channels.”

Asked about partnerships, Dan said: “We have about 20 groups we are actively working with.” They include the Asian development partner announced this August. “Volkswagen is one of

our announced partners, but we are also working with a bunch of their peers.” These partners and opportunities are “a big part of the story, and my job is to convert those into real and meaningful deals.”

To watch the full interview, [click here](#).

YouTube ([click here to subscribe to the InvestorIntel Channel](#)),

To learn more about Nano One Inc., [click here](#)

Disclaimer: Nano One Materials Corp. is an advertorial member of InvestorIntel Corp.

Australian Strategic Materials demerger from Alkane Resources unlocks shareholder value

written by InvestorNews | April 17, 2023

[Australian Strategic Materials Limited](#) (ASX: ASM | ASMMF) (“ASM”) is the result of [Alkane Resources Ltd.](#) (ASX: ALK | OTCQX: ALKEF) demerging their Dubbo rare earths and poly-metallic project [in late July 2020](#) to form a new listed company. The combined market cap of Alkane Resources and ASM now exceeds its previous value as a single company, showing that the demerger achieved its goal of unlocking shareholder value.

The key assets of the newly-listed Australian Strategic Materials (“ASM”) include:

- **The Dubbo Project** (flagship) is a 100% owned ‘construction

ready' poly-metallic and rare earths project with potential to become a key global supplier of specialty metals and rare earths. The Dubbo deposit is a proven, large deposit of Zr, REE, Nb and Hf minerals

- **Metals Technology Business** – ASM is investing in new technologies related to the separation, purification and metallisation of oxides. Their JV pilot plant with ZironTech is now in operation.
- **Toongi Pastoral Company** – The company owns 3,500 hectares of freehold and leasehold land 25kms south of Dubbo, NSW, Australia.

What's happening now with Australian Strategic Materials

ASM's strategy is to not only produce rare earths concentrate but to go further up the value chain and produce various strategic metals. Should ASM succeed, it would place them in that exclusive club in the mining industry of being an alternative strategic high value metals producer outside of China.

To achieve this goal of producing metals from their Dubbo Project, ASM is working with their Joint Venture (JV) partner, South Korea's Zirconium Technology Corporation ("ZironTech"). The JV is now advancing a pilot project to produce various metals by combining their proprietary process with ZironTech's metallisation technology. ASM has exclusive global commercialization rights under the licence. The pilot plant is now up and running in South Korea.

Australian Strategic Materials plans to move up the rare earths and strategic materials value chain



[Source](#)

The latest progress in pilot testing the extraction of strategic metals:

[July 2, 2020](#) – ASM/ZironTech JV produces titanium metal alloy with a 45% power saving. The commercial pilot plant was commissioned on time and on budget, with ~30kg of titanium metal alloy produced. A subsequent run of the pilot plant produced another 22kg of titanium metal alloy, with up to [50% less](#) energy than current commercial production methods. Then in August ASM [reported](#) that their JV produced 9.16kg titanium (Ti) metal powder assaying 99.83%.

[July 13, 2020](#) – ASM/ZironTech JV produces high quality neodymium (Nd) metal alloy, with successful laboratory production of ~1kg of neodymium metal alloy.

ASM & ZironTech produce a ~1kg of neodymium (87%) metal alloy using their 45% more efficient reduction process at their pilot plant



[Source](#)

[August 19, 2020](#) – JV produces second key permanent magnet metal, praseodymium (Pr). Commercial pilot plant produces 5.3kg Pr metal assaying 99.3%. JV announces a forward plan for commercial pilot plant production of neodymium, praseodymium and dysprosium metal in August.

ASM & ZironTech produce 5.3kg of high purity praseodymium metal (99.3%)



Source

“This is a major milestone in ASM’s integrated strategy that includes clean metal production for all products from the development of the Dubbo Project in Central West NSW”, [according to](#) ASM’s Managing Director, David Woodall. “This integration of metal production into ASM’s business is consistent with the Australian Government’s objective of adding value within Australia, while ensuring supply security and stability of these critical materials to global and domestic Australian manufacturing sectors.”

The Dubbo Project is a large resource of zirconium, hafnium, niobium, and rare earths (including praseodymium, neodymium, and yttrium). It is the most advanced poly-metallic project of its kind outside China. The Project has an estimated 70-year mine life and can be an open pit design. The Project is ready for construction with all major state and federal approvals and licenses in place. The [2013 DFS](#) resulted in a pre-tax NPV8% of A\$1.235 billion, and a pre-tax IRR of 19.3%. The Company has since proposed a two stage production start up so as to lessen the first stage CapEx from an estimated US\$930 million to [US\\$480 million](#). A [follow up FS](#) plans to incorporate the new and improved processing techniques from their ZironTech JV.

Closing remarks

Rare earths are not rare in the earth’s crust, however extracting and purifying them is the challenge that has traditionally been an expensive and polluting process, mostly done in China. What ASM and their JV partner ZironTech are doing is revolutionizing the process of rare earth metals production, using much more energy efficient methods that are also less harmful to the environment. It is still early days with their pilot plant testing however results so far with titanium,

neodymium, and praseodymium appear to be highly promising.

Effectively ASM is working towards becoming a vertically integrated (“mine to metal”) western producer of high purity strategic/critical and valuable metals. Subject to further testing and funding [the plan](#) is to have clean metal processing plants in Korea and Australia. More efficient processing techniques should significantly improve the economics of ASM’s Dubbo Project as well as opening up the opportunities for wider commercialization of their breakthrough technology.

The market seems to agree. Australian Strategic Materials’ stock price has doubled so far in August and ASM is now trading on a market cap of A\$264m.

EXRO’s CEO on deal with Clean Seed Capital to advance electrification of farm equipment

written by InvestorNews | April 17, 2023

“I think what we bring to the table that is really different from anybody else is that we are looking at how we control efficiency through the power electronics, but working with the motor. We are looking at that complete system optimization. By doing that we have got this huge market that is interested in what we are doing. It doesn’t matter if you are into green technology or motors or power electronics. We are kind of

covering all three of it.” States Sue Ozdemir, CEO of [Exro Technologies Inc.](#) (CSE: XRO | OTCQB: EXROF), in an interview with InvestorIntel’s Tracy Weslosky.

Sue went on to provide an update on Exro’s collaboration and supply agreement with Clean Seed Capital Group Ltd. to integrate Exro’s technology into Clean Seed’s high-tech agricultural seeder and planter platforms, advancing the electrification of heavy-farm equipment. Sue said that Clean Seed is an industry expert in the agricultural segment. Agriculture still has 45% of the industry using non electric methods. With the Clean Seed deal, Sue said, Exro will be able to show scalability of its technology for the entire mobility industry. Sue also provided an update on Exro’s partnership with Motorino Electric. She said that Exro has delivered the first Exro-powered e-Bike to Motorino. Exro’s engineered technology provided a torque and acceleration increase of greater than 25% for the Motorino e-Bike.

To access the complete interview, [click here](#)

Disclaimer: Exro Technologies Inc. is an advertorial member of InvestorIntel Corp.

dynaCERT’s revenues begin to ramp up exponentially as a global solution provider for

pollution reduction

written by InvestorNews | April 17, 2023

COVID-19 has shown us what a world without air pollution can be like. As economies reopen and pollution returns, governments and individuals will be demanding greater emissions reductions. China and Europe are already leading the way in 2020 [with policies to reduce emissions](#).

The COVID-19 lockdown resulted in a massive drop in air pollution across China and globally



[Source](#)

If you are new to [dynaCERT Inc.](#) (TSXV: DYA | OTCQB: DYFSF), dynaCERT manufactures, distributes, and installs Carbon Emission Reduction Technology (CERT) for use with diesel engines. Their flagship product is HydraGEN™, which is an electrolysis unit that produces H₂ and O₂ gases which act to optimize the burn, resulting in an up to 19% increase in fuel economy and a +50% reduction in emissions.

dynaCERT's HydraGEN reduces fuel consumption and drastically reduces emissions:




How dynaCERT's HydraGEN works to reduce fuel consumption and emissions:



[Source](#)

dynaCERT have already spent \$60 million developing the

technology to date, including 16 years of R&D to commercialization. They have worldwide patented technology with a unique electrolysis reactor, unique processes, unique electronic control unit, and a unique encrypted data management. They have achieved certification in several global jurisdictions, and have a first mover advantage.

With an enormous global market to address, which includes around one billion diesel engines – dynaCERT has already made inroads into the initial markets shown below. 

[Source](#)

dynaCERT has the following [global partners](#)/dealers:

- Mosolf – Has installations & 23 showrooms throughout Europe. Distribution channels in Germany, France, Netherlands, Belgium, Luxembourg, Poland, Czech Republic.
- Farhi Holdings – Distributor for Brazil & Israel.
- H2 Tek – 43 active mining conversations, 15 trial negotiations, 6 trials. Mining projects in: Canada, USA, Peru, Chile, Brazil, Paraguay, Uruguay, Argentina, Russia, Mongolia, and Australia.
- KarbonKleen – Financing for Mexico assembly with an MOU for 1,000,000 units. KarbonKleen [was recently awarded](#) the exclusive dealership rights in the trucking industry in the USA until December 31, 2024 (subject to certain quotas of a minimum of 150,000 HydraGEN Technology units over a little more than 3 years).

Brian Semkiw, KarbonKleen's Chairman & CEO, [stated](#): "In the past few months, some of the largest fleets in North America have been piloting HydraGEN Technology. These fleets have been experiencing the benefits of the reduced emissions, increased performance and fuel savings across all users and we expect a vibrant expansion of the pilot programmes to full fleet

deployment with the subsiding of the Coronavirus pandemic. This investment by DISH and our partnership with Velociti will enable us to meet the anticipated demand with the delivery and maintenance professionalism that large fleets demand.”

Ranked #1 Company across all sectors on the 2020 TSX Venture 50 in February, dynaCERT recently [announced](#) (May 14) that they had received conditional approval to graduate to the Toronto Stock Exchange. This is a significant milestone and a plus for the company and its investors as it now allows greater exposure for potential future buyers including institutional investors.

Jean-Pierre Colin, Executive Vice President of dynaCERT, [stated](#): “Graduating to the TSX represents a significant milestone in our efforts to broaden our appeal to a larger shareholder base, including institutional investors, and raise the Company’s profile among the investment community. We expect this graduation to further enhance the liquidity of our stock and enable us to continue building long-term shareholder value.”

As dynaCERT’s revenues are set to grow exponentially from just C\$1 million in 2019 to a forecast [C\\$62 million](#) in 2020, and C\$224 million in 2021 – dynaCERT is now at a stage of monetizing their many years of R&D.



[Source](#)

With a growing customer base and global partners/dealers dynaCERT should now see a constant ramp up in product orders starting now. The KarbonKleen Mexico MOU for 1 million units and US trucking dealership (150,000 minimum units), the Mosolf European dealership, combined with Farhi Holdings and H2 Tek give a broad and growing global reach to sell dynaCERT’s products, thereby fast tracking sales.

After a rapid rise in 2019, dynaCERT's stock price has pulled back recently due to the COVID-19 sell off thereby allowing investors who may have missed earlier opportunities a chance to enter at an attractive valuation. The market cap is still only C\$145 million, with an analyst's consensus target price of [C\\$2.00](#), representing 208% upside, investor [Eric Sprott "jumped onboard"](#) as an investor earlier this year.

The Perfect Market Storm: Critical Materials, Cleantech and COVID-19

written by Tracy Weslosky | April 17, 2023

There seems to be a misguided notion (with some) that isolation means we have more time to waste. Far from reality, I am certain that many of you, like me are looking at your inbox wondering where or how to wade into the depth of quality deals and opportunities upon us...

Would like to kick your morning coffee off with a special nod to our longstanding friends from [Avalon Advanced Materials Inc.](#) (TSX: AVL | OTCQB: AVLNF) whose \$AVL soared 50% yesterday. We have been supporters of #Avalon since Don Bubar first did an interview with me in 2009 (with Jack Lifton) and introduced me to rare earths. And indeed, there is news flow in the rare earths a-n-d throughout the critical materials sector that is literally ricocheting from source-to-source online...

[How to follow?](#)

Jack Lifton, Clint Adam Smyth and I just launched the [TechnologyMetals.com](https://www.TechnologyMetals.com) site to manage the influx of critical materials' news (and experts) we are communicating with regularly. Jack's interview with Dr. David Dreisinger on [Search Minerals Inc.](#) (TSXV: SMY) last week was purely outstanding (in my opinion) as he describes David as "the leading authority on solvent extraction process". This is a hot topic that we touch on in our weekly update that we just started...[click here to access a preview](#)

And associated technologies relating to cleantech? We saw [Exro Technologies Inc.](#) (CSE: XR0 | OTCQB: EXROF) stock move up 30% yesterday! Interviewing CEO Sue Ozdemir on how Exro makes "electric motors faster, stronger and greener" for InvestorIntel on Wednesday: we will get this up live as fast as we can!

Uranium continues to maintain a much-deserved interest, let me point you in the right direction for a quick update – Matt Bohlsen's piece from last week titled, [The DoE's plan to rebuild the uranium sector and 'pull America's nuclear industrial base back from the brink of collapse'...](#) reinforces the sustainability themes we are touting on the Technology Metals Show. Arranging interviews as we speak with Mark Chalmers of [Energy Fuels Inc.](#) (NYSE: UUUU | TSX: EFR) and Jeff Klenda of [Ur-Energy Inc.](#) (NYSE: URG | TSX: URE) as they "stand to be the major beneficiaries, especially given they started the whole S232 petition back in January 2018" you should see those live on InvestorIntel next week.

And yes, we are following the biotech and life sciences market. If you subscribe to our AI driven market updates on InvestorChannel.com – you can catch the 20 companies, we are following in the race for vaccinations...[click here](#)

Speaking of AI technology, we would like to ensure that you are

aware of the news that was put out by [Predictmedix Inc.](#) (CSE: PMED | OTCQB: PMEDF) yesterday titled – [Predictmedix Files Patent for Mass Screening for Infectious Diseases Such As #COVID19](#)



1 YR stock Chart for Predictmedix Inc. (CSE: PMED) – Source: TD Waterhouse

And speaking on the war against the COVID-19, [StageZero Life Sciences Ltd.](#) (TSX: SZLS) put out the following news on April 20th [StageZero Life Sciences Initiates Testing for COVID-19 In the USA](#)

Remember, click here to subscribe to the [InvestorChannel](#) for daily market updates on the Canadian, US and Hong Kong markets – and to follow InvestorIntel's stock watchlist for Gold, Uranium, Rare Earths and of course, COVID-19...