



PIVOT EM

April 2024



KEY TEAM



Michael Collins
FOUNDER, PRESIDENT,
CEO & DIRECTOR

Successful entrepreneur with a vision of what mining and construction should be in the future. Experience in both exploration for and development of mining projects. Focusing now on carbon neutral mining and construction business and uranium exploration and mining.



William Hughes
CHIEF ENGINEER

Leading projects in the mining and energy industry with experience on the owner's, engineer's and constructor's team. Key member of the Rokion Team. Leading builds of up to \$400 million. Independent, calm, and skilled leader able to manage high performance teams



Jessica Van Den Akker
CPA, VP FINANCE

Ms. Van Den Akker is a Chartered Professional Account (CA) with 15 years' experience in the resource sector. She is currently the COF of Kore Mining. She gained extensive experience through a Canadian audit firm providing reporting and accounting assurance services to publicly traded companies, primarily in natural resources.



Alvin Pyke
SENIOR
ADVISOR-EDMONTON

With an engineering background and a graduate of the institute of Corporate Directors DEP program., Mr. Pyke is has built and developed companies specializing in process automation, predictive machinery analysis and other process data analytics, Rally Engineering Ltd, a full service engineering firm, and Helical Pier Systems Ltd, a Civil EPCM



Prairie Machine/Rokion
CO-FOUNDING SHAREHOLDER AND PRIME CONTRACTOR

Prairie Machine is a global leader in the manufacturing and supply of heavy-duty equipment and technical solutions for the heavy industrial and mining industries. Under the Rokion brand, Prairie Machine supplies industrial-strength, zero emission battery powered crew and utility trucks for use in surface and underground mining operations. Prairie Machine mechanical and electrical divisions provide complete service, training, and support for mine sites worldwide.

PARTNERS

With 40 years of experience building mining equipment and 10 years of building Light Electric Underground Trucks

Prime contractor to Pivot, building the next generation of electric heavy trucks & loaders

**PRAIRIE
MACHINE**

ROKION





Miners are racing to reduce carbon emissions to maintain social license.

ELECTRIC EQUIPMENT PARADOX

Production of Lithium batteries is an inherently carbon intensive industry and mining is a key component of producing battery metals

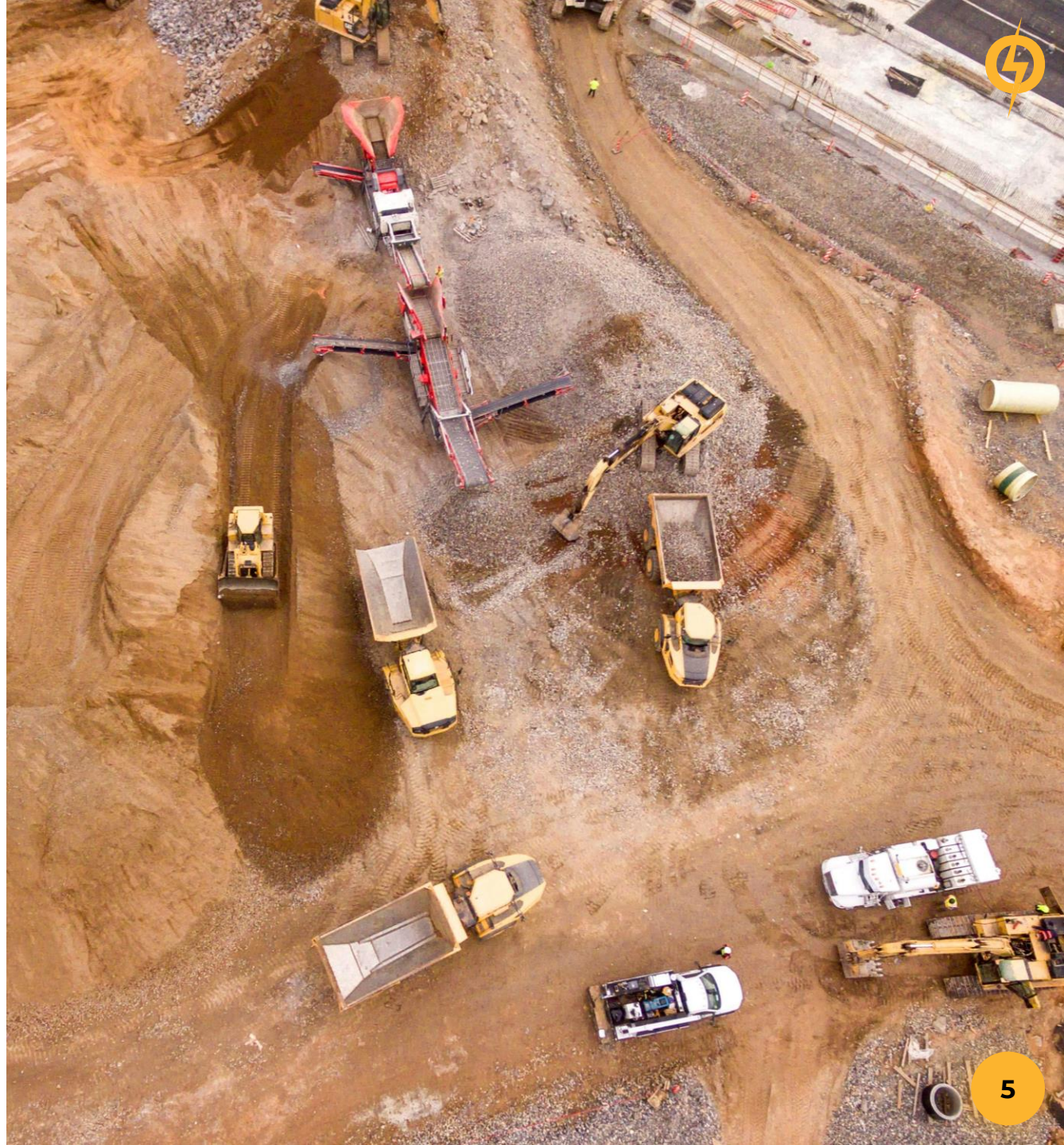
- Existing battery technology is not efficient, robust or safe enough to effectively replace diesel engines that run on diesel at 4 liters/minute.
- Next generation batteries and chargers will provide a fast charging, robust, safe and economic solution.
- Mobile equipment accounts for 40-60% of carbon emissions in open mines.
- BEV solutions need to be both effective and economic to be successful in mining

PIVOT EM

LEAD THE ELECTRIFICATION OF EXISTING MINING AND CONSTRUCTION FLEETS

DESIGN AND BUILD NEXT GENERATION BATTERY ELECTRIC EQUIPMENT.

Existing heavy equipment makers are not delivering effective solutions for existing fleets; their focus is on new equipment sales using GHG emitting, legacy diesel engine technology.





OUR FOCUS

The Retrofit or Remanufacturing market for Surface mining equipment is valued at approximately \$200B

Existing manufactures are focused on old battery technology or Hydrogen which is also a greenhouse gas.

Total Addressable Market

\$170b & \$30b, Retrofit Surface and Underground Equipment

\$19b & \$2b/year, New Surface and Underground Equipment

Driving carbon emission reduction in industries that are critical to the development of a **Net Carbon Neutral world.**

NEAR TERM OBJECTIVES:

- Deliver remanufactured haul trucks that are more efficient and cost effective than existing diesel equivalents
- First product: CAT 793 BEV conversion kits
- Second Product: Cat 797 BEV conversion kits.
- With over 56,000 diesel trucks over 90t*, continue to expanding conversion kits into other high volume business.

**Parker Bay Mining survey 2022*

LONG TERM VISION:

- Become the preferred partner for the mining and construction industry to help eliminate carbon costs and improve mining economics.
- With responsive and innovative design, dominate the market in high volume categories with clean sheet designs that out- perform the incumbent equipment makers.



THE COMPETITION

There are three relevant competitors in the market



Williams Advanced Engineering in Australia have designed trucks that can only drive loads downhill. (the battery system was delivered 12 months ago but there is no word on operation) ;



First Mode in Seattle have problems with batteries that overheat in their hydrogen hybrid model have announced a full battery electric truck but no word on testing or deployment;



Caterpillar is promising to market a battery electric 793F in 5 to 10 years. **BUT** they will only be converting diesel electric “F” models which are a small fraction of existing fleets.



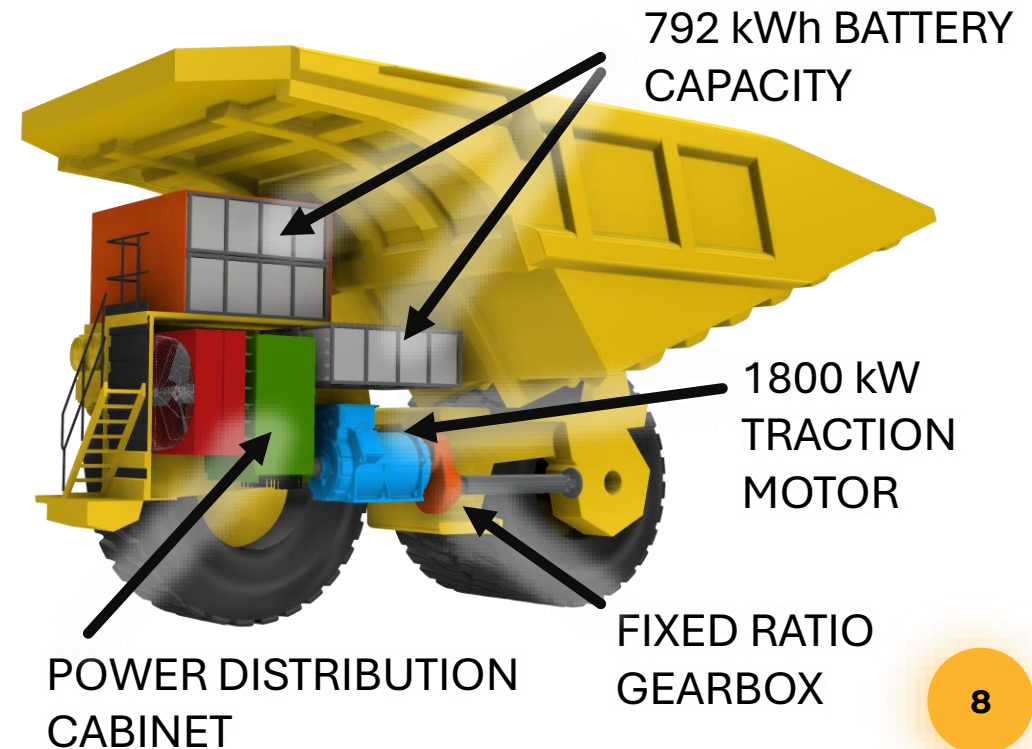


FIRST DESIGN

231t Caterpillar 793, Surface Haul Truck



- 792 kW Lithium Titanate proprietary battery power system
- Comparable Motor/Inverter pair already in use on 230-363t trucks
- 6.5 minute static charge cycle, Dynamic charging optional
- Long life components and high operational utilization delivers positive economic business case





CONTRACT NEGOTIATIONS

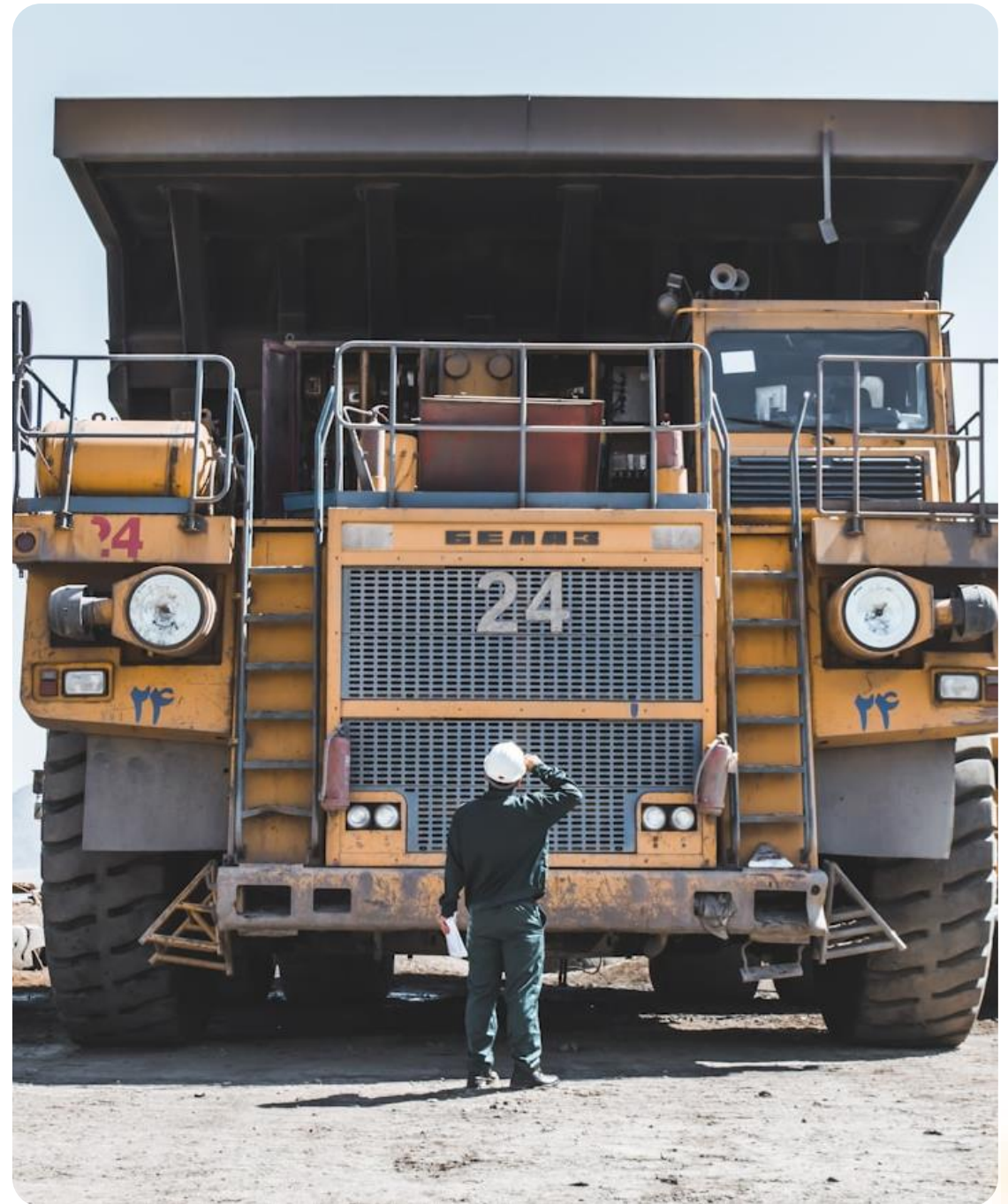
- International mining company with large scale open pit mines
- BEV conversion of 2 to 5 - 231 tonne Caterpillar Haul trucks with Pivot LTO battery modules and charging system
- Initial contract value **\$25m**, USD 25 more trucks in fleet
- Low capex builds/high margin
- Discussing opportunities with two additional international miners with very large Caterpillar truck 793 fleets
- Starting discussions on Caterpillar 797 trucks, (400t payload)



5-TRUCK CONVERSION ECONOMICS

Assumptions

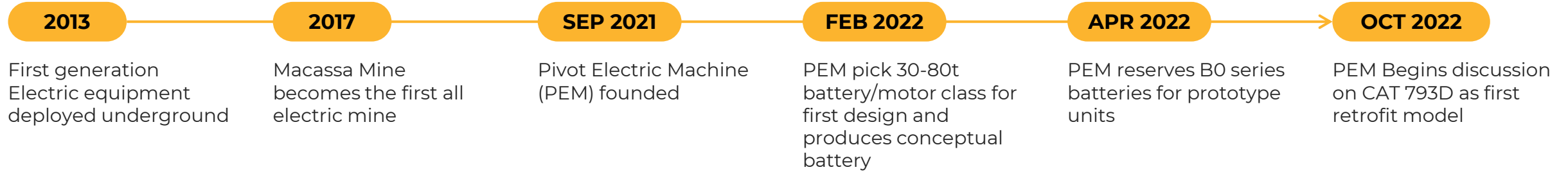
- 3mWh power availability
- 5 truck conversions
- 39 minute duty cycle over 6km and 230.9m
- 6.6 minute charge time at 3.9C
- Cost per vehicle USD \$5.7 million
- Charger system cost, USD \$2.1 million
- Battery Power system life 7-8 years
- >20% IRR before tax or carbon credits
- Reduced maintenance time and cost
- Vehicle availability equal or greater that base diesel truck, (after increased uphill speed and reduced delay times)





EXECUTION TIMELINE

BEV Equipment evolution to date



The Future

Phase 1

Q2 2024

Start build on MVP CAT 793D retrofit truck

Q4 2024

Build first commercial CAT 793D retrofit with Lithium Titanate cells

Phase 2

Q1 2025

Start production of CAT 793D retrofit battery power systems (BPS) conversion kits

Q2 2025

Development of Edmonton BPS manufacturing facility and export to Brazil

Phase 3

Q3 2025

Expanded delivery of CAT 793D BPS trucks, commercialization of CAT 797 and CAT 777 BPS conversions

Q2 2026

Scale up surface truck BPS program and begin expansion to underground trucks using the same technology.

Q1 2027

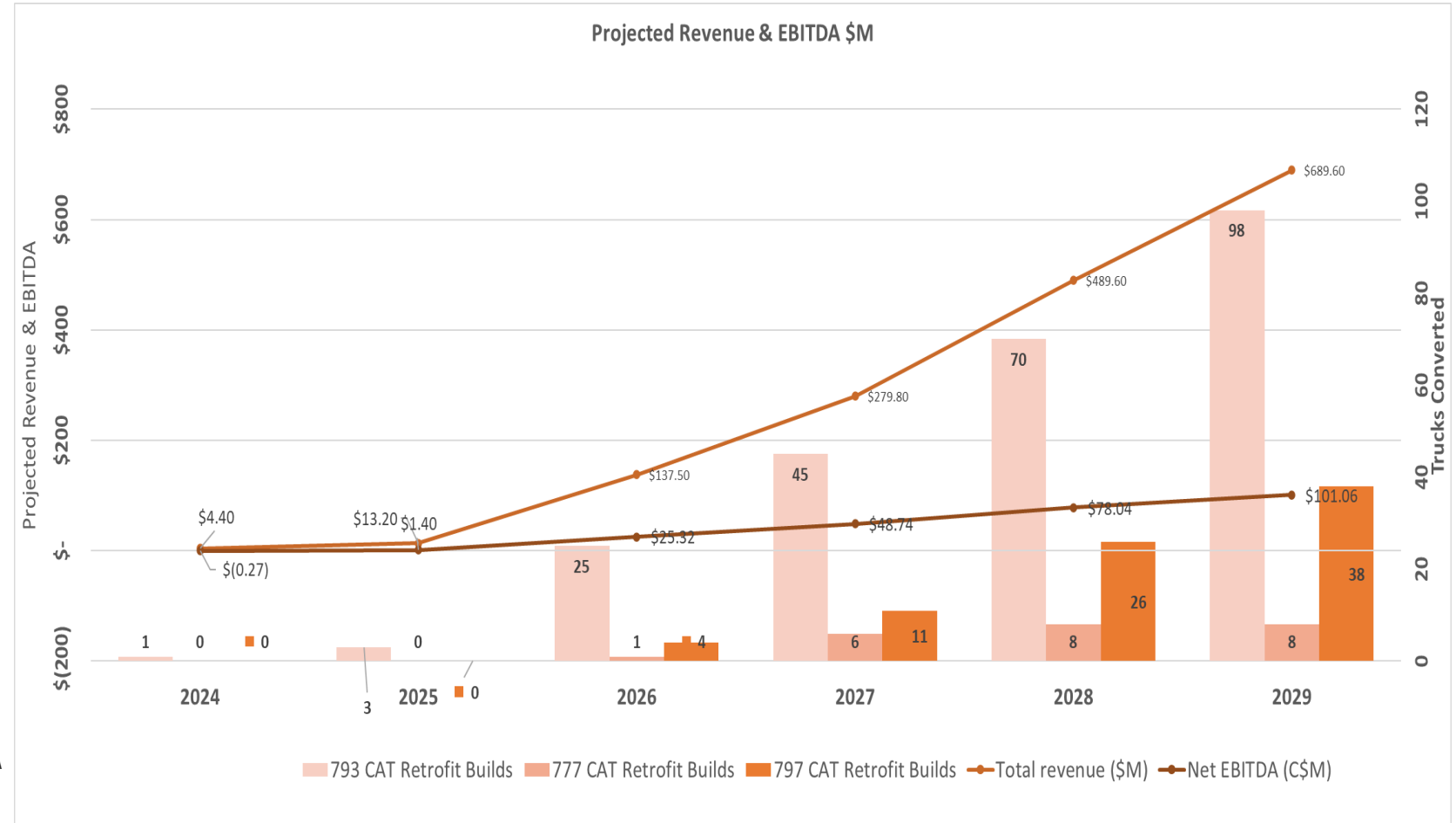
Expand product line to additional equipment classes as clients require



PROJECTED REVENUE & EBITDA

- Projection encompasses a fraction of total market of ~56,000 trucks over 100 tonnes capacity.
- Payback on initial engineering on new designs is under 2 years.
- Development process and production scaling has low capital intensity.

**number of trucks converted and related revenue and EBITDA are estimated many not be representative of final sales.*





PIVOT ELECTRIC MACHINES



Pivot Electric Machines Corp builds and retrofits existing heavy equipment with economically viable and operationally effective "next generation" battery systems.



Bringing together a well-respected team of BEV designers and builders with experience in delivering gear box design and production, unit control systems, battery management & design



Dedicated to transforming the mining and construction industries into carbon neutral businesses.



Integrating battery parts and drive systems from well respected international suppliers





STATUS QUO



FOUNDATIONS OF A GREEN REVOLUTION

Mining and construction industries are building the foundation for the green revolution, but they are not green themselves.



ENTRENCHED INTERESTS IN BATTERY TECH

Existing manufacturers are invested in existing Li Ion/LiFePO₄ battery technology.



ENERGY GAPS IN BATTERY TECH

High energy demands exceed capacity of current battery energy density and charging capabilities, so existing battery electric equipment is not competitive, except in extreme conditions.



OEM PRIORITIES: SALES OVER CONVERSION

Major OEMs focus on new equipment sales, and do not prioritize need for existing fleet conversion from diesel engines to battery power and underestimate the market for competitive equipment in the mining and construction business.



THE PIVOT DIFFERENCE



With optimized design, LTO and solid-state batteries, Pivot heavy mobile equipment will be **more efficient, productive, and cost effective** than current battery or diesel-powered equipment.

Pivot will be the first company to design and build solid state battery powered heavy equipment.

- Utilizing Pivot designed and patentable* LTO and solid state battery technology and charging equipment to effectively operate heavy mining equipment.
- Key shareholder and contractor Prairie Machine has over **40 years of experience** building heavy mining equipment and light battery electric mining equipment.
<https://www.youtube.com/watch?v=aPgKihSiLRs>
- Designing and building battery electric conversion systems for high volume diesel powered heavy equipment. Starting with the **CAT 793** and progressing to **CAT 797** and **CAT 777** diesel-mechanical trucks
- Pivot is focused on building a truck power system that is economically and effectively better than the original diesel truck. Fitting **seamlessly integrated into existing equipment fleets and operating procedures.**

**Pivot has filed a provisional patent on battery design related to charging cycle, charging strategy, cooling and battery management*



PHASE I USE OF FUNDS

Truck	\$750,000
Engineering	\$1,511,000
Charging System	\$2,291,000
Battery System Components	\$2,108,000
Labour and Facilities	\$2,238,500
G & A	\$1,349,400
Total Spend	\$10,247,900



SUPPORT IN THE COMMUNITY



Minister Champagne promoted Pivot in his keynote at the Electric Mobility Canada conference in Edmonton on Nov 15, 2023



Interest in partnership from Alexis Nakota First Nation



Expressions of interest from Alberta Innovates and ERA



Expressions of interest from PrairiesCan, NRC-IRAP



Rethink Mining, (CMIC) is working to build industry consortium to support Pivot design work.



THE OPPORTUNITY



Mining and construction companies are under pressure to retrofit existing fleets and go green in new fleet purchases



LTO and Solid State batteries are the pivot that the mining and construction industry needs to move forward to a carbon neutral future



Initial focus on Remanufacturing market which is worth > \$100b to Pivot And a long term recurring heavy equipment market of \$20b/y



Existing Equipment manufacturers are tied to dead end battery technology



Existing manufacturers ignoring BEV retrofitting to focus on new sales



Long term, selling Pivot EM OEM heavy equipment, through relationships with remanufactured equipment customers



PIVOT ADVANTAGE



Deep industry knowledge



Capable of rapid expansion of design and manufacturing team



Track record of design and build of electric equipment



Working relationships with mining companies



CAPITAL STRUCTURE

10.3M

Shares
Outstanding

12.15M

Fully Diluted

1.3M at \$1.00

Warrants

550,000

at \$0.045 avg cost
Options

MAJOR SHAREHOLDERS

32%*

Michael Collins

22%*

Prairie Machine

4%*

William Hughes

3%*

Monty Sutton

*Multiple voting
founders shares





PIVOT EM

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April 2024



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OTHER KEY OFFICERS & ADVISORS



Kipp Sakundiak
Director

An early innovator in the Light Electric Equipment space, Kipp is General Manager at Prairie Machine/Rokion expanding business lines year on year. A depth of history of working in the mining & metals industry. Skilled in Negotiation, Procurement, Engineering, Strategic Planning, and Business Development. Strong sales professional with a B.Eng. focused in Agricultural Engineering from University of Saskatchewan.



Monty Sutton
CFO & Director

Monty Sutton brings more than 35 years of experience in public markets, corporate governance, senior administration and accounting and has served on the management teams and boards for many private and publicly traded companies. Starting on the trade floor of the Vancouver Stock Exchange in 1987, Mr. Sutton has also held positions as Senior Management Accountant for MacMillan Bloedel, Investment Advisor, Insurance Specialist, Corporate Development Manager and most recently Chief Financial Officer.



Christopher Huggins
VP MARKETING

With a decade of successful heavy equipment sales, Chris brings a deep understanding of the capital and productivity requirements of large and medium sized operations, and saw early on the opportunity battery equipment can bring, dynamically frame issue around financing and marketing equipment and batteries through operational availability models and power as a service.



Dr Chris Burns
ADVISOR

Co-founded NOVONIX Battery Technology Solutions, a Nasdaq listed leading battery testing and Synthetic Graphite producer. Dr. Burns holds multiple patents related to Li-ion batteries and is a co-author on peer reviewed journal articles that have been cited over 4,000 times.



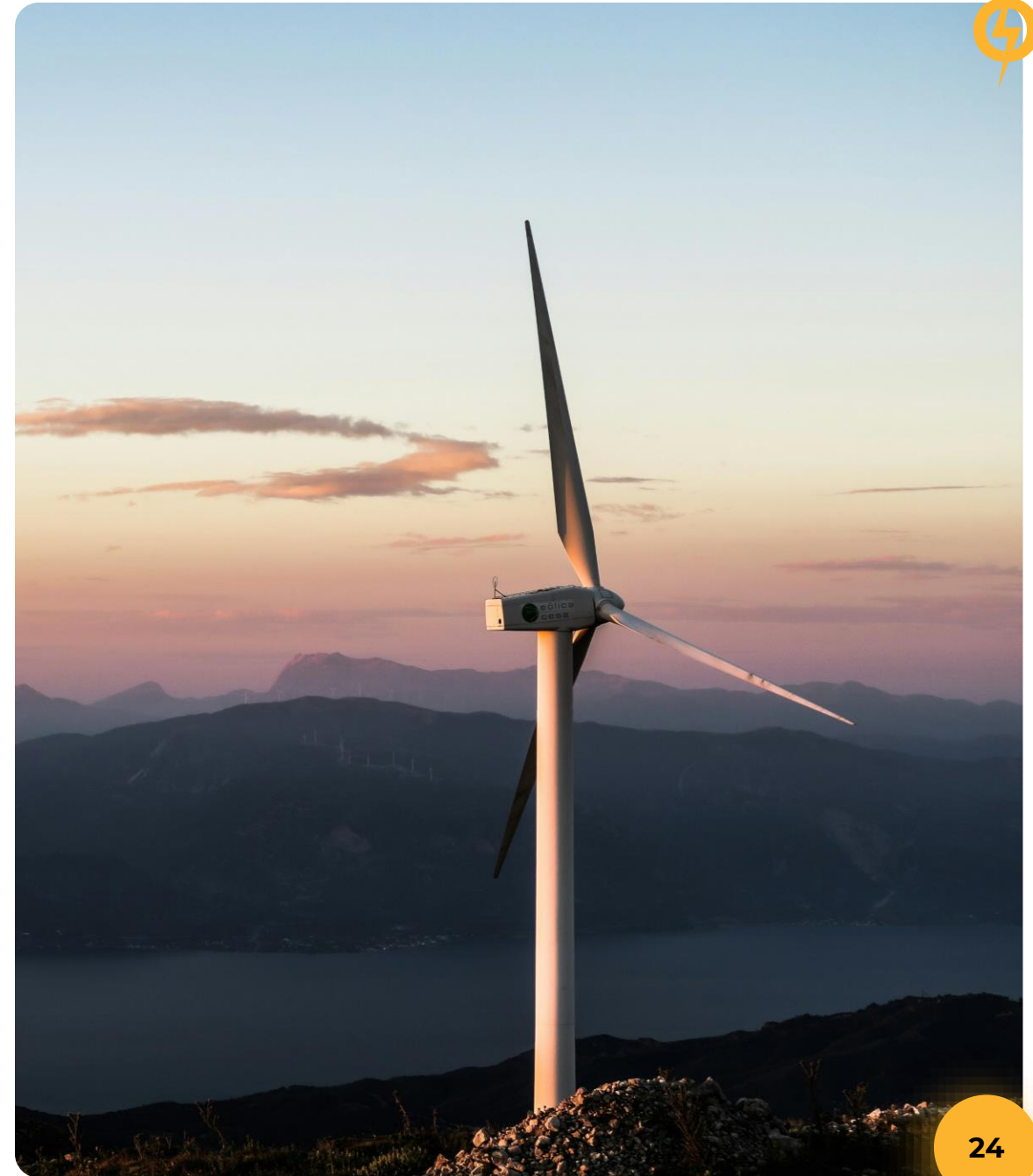
Reg (Rejean) Labelle
ADVISOR

Former Director Technology and Innovation at Kirkland Lake Gold, pioneering electric equipment at the Macassa Underground mine and former National Sales & Business Development Manager with Epiroc Canada, a division of Atlas Copco Inc. Reg understands the underground mobile equipment business and has been at the forefront of the electrification of mining.

OPTIMIZATION

Additional programs to maintain the Pivot Advantage

- Pivot AI lab, working with client fleets to optimize operational availability and performance uses geo-located performance data to adapt and optimize truck operations in real time to changing road conditions and mine requirements to reduce accidents, help maintain consistent operations in bad weather.
- Working on a Lithium Titanate Battery model that has four times the life cycle characteristics of more common NMC battery cells. This allows us to make a more durable and cost effective battery with more effective operating time.
- Working on Solid State battery systems with faster charging and longer life
- Expansion into additional lines of heavy haul trucks.
- Application of our proprietary battery technology to other aspects of mining as well as off road heavy transport sectors through direct development as well as licensing with select industry partners. Provisional patents have been filed.





PIVOT BEV 793 D CONVERSION



Business case for converting 34 trucks

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031
Tons Per Year	111,936,305	105,291,117	110,405,926	108,602,000	93,923,620	57,353,871	63,058,896	60,758,779	91,415,521
Gain per Year ¹	40,297,000	37,905,000	39,746,000	39,097,000	33,813,000	20,647,000	22,701,000	21,873,000	32,910,000
Initial Expend ²	-59,337,000								
Cash Flow ³	-19,040,000	37,905,000	39,746,000	39,097,000	33,813,000	20,647,000	22,701,000	21,873,000	32,910,000
Years in Future	0	1	2	3	4	5	6	7	8
Discounted	-19,040,000	28,429,000	22,357,000	16,494,000	10,699,000	4,900,000	4,040,000	2,920,000	3,295,000
Net Present Value	74,094,000								

Assumptions	(\$US)
Cost per Ton Diesel	\$0.61
Cost per Ton Electric ⁴	\$0.25
Cost of 30 MW Station	\$22,379,000
Cost per Vehicle Mechanical	\$377,000
Cost per Vehicle Electrical	\$344,000
Cost per Vehicle Conversion	\$366,000
Sub-Total Each	\$1,087,000
Number of Vehicles	34
Sub-Total Vehicles	\$36,958,000
Total Capital	\$59,337,000
Internal Rate of Return	25%

1 Operating gain electric versus diesel

2 model assumes full fleet replacement and then averages further maintenance/replacement

3 does not model reduced maintenance costs of electric vs diesel

4 battery costs amortized as opex in this model



CANADA BETTING BIG ON BATTERIES

JUN 2023 *CBC News*

Federal government giving Volkswagen up to \$13B in subsidies to secure St. Thomas EV battery plant

AUG 2023 *CBC News*

Quebec, Ottawa investing \$644M for construction of new Ford EV plant in Bécancour

SEP 2023 *CBC News*

EV battery giant Northvolt to build multibillion-dollar plant in Quebec

NOV 2023 *Daily Hive*

\$1 billion lithium battery manufacturing plant to be built in Metro Vancouver

FEB 2024 *Mining Review Africa*

Canada overtakes China in lithium-ion battery supply chain

FEB 2024 *Electric Mobility Canada*

Dalhousie University planning for a growing Canadian EV battery industry



CURRENT FEDERAL FUNDING OPPORTUNITIES

CURRENT FEDERAL FUNDING OPPORTUNITIES

- INNOVATION, SCIENCE & ECONOMIC DEVELOPMENT (ISED) – STRATEGIC INVESTMENT FUND (SIF)
- NATURAL RESOURCES CANADA – CRITICAL MINERALS
- NRC (IRAP)

PROVINCIAL FUNDING OPPORTUNITIES

- EMISSIONS REDUCTION ALBERTA (ERA)
- ALBERTA INNOVATION
- ENERGY AND MINERALS ALBERTA

RECENT FEDERAL/PROVINCIAL ANNOUNCEMENTS 2023

Across the battery supply chain – from mining and processing critical minerals, to manufacturing batteries and their components – Canada is attracting job-creating projects from around the world. By making Canada a global leader on batteries, we create middle-class jobs, grow our economy, and keep our air clean for generations to come.

Including private sector money, total investment in the 10 plants for which information is available, is \$37.7 billion. Once they are up and running, the plants are expected to generate thousands of jobs in the EV battery production sector and will have the capacity to manufacture batteries for over two million electric vehicles annually, contributing billions to the country's GDP.