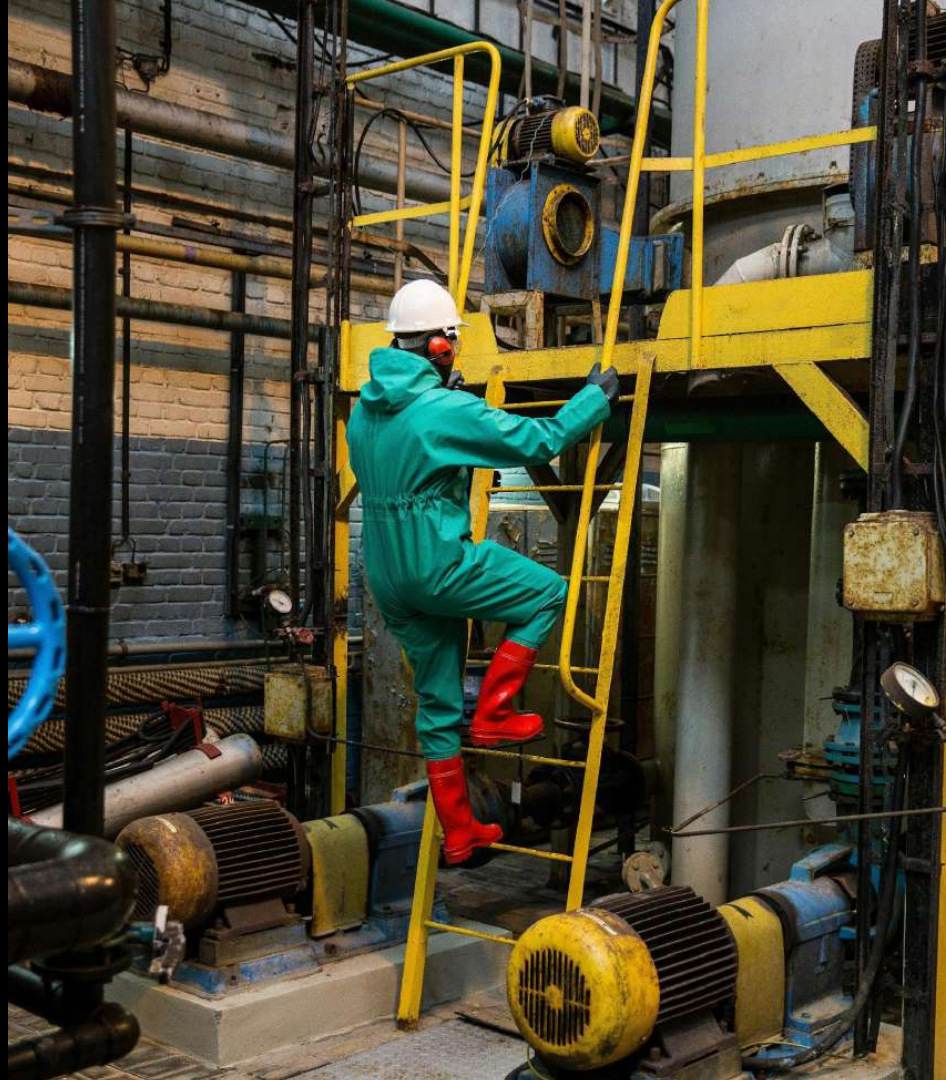
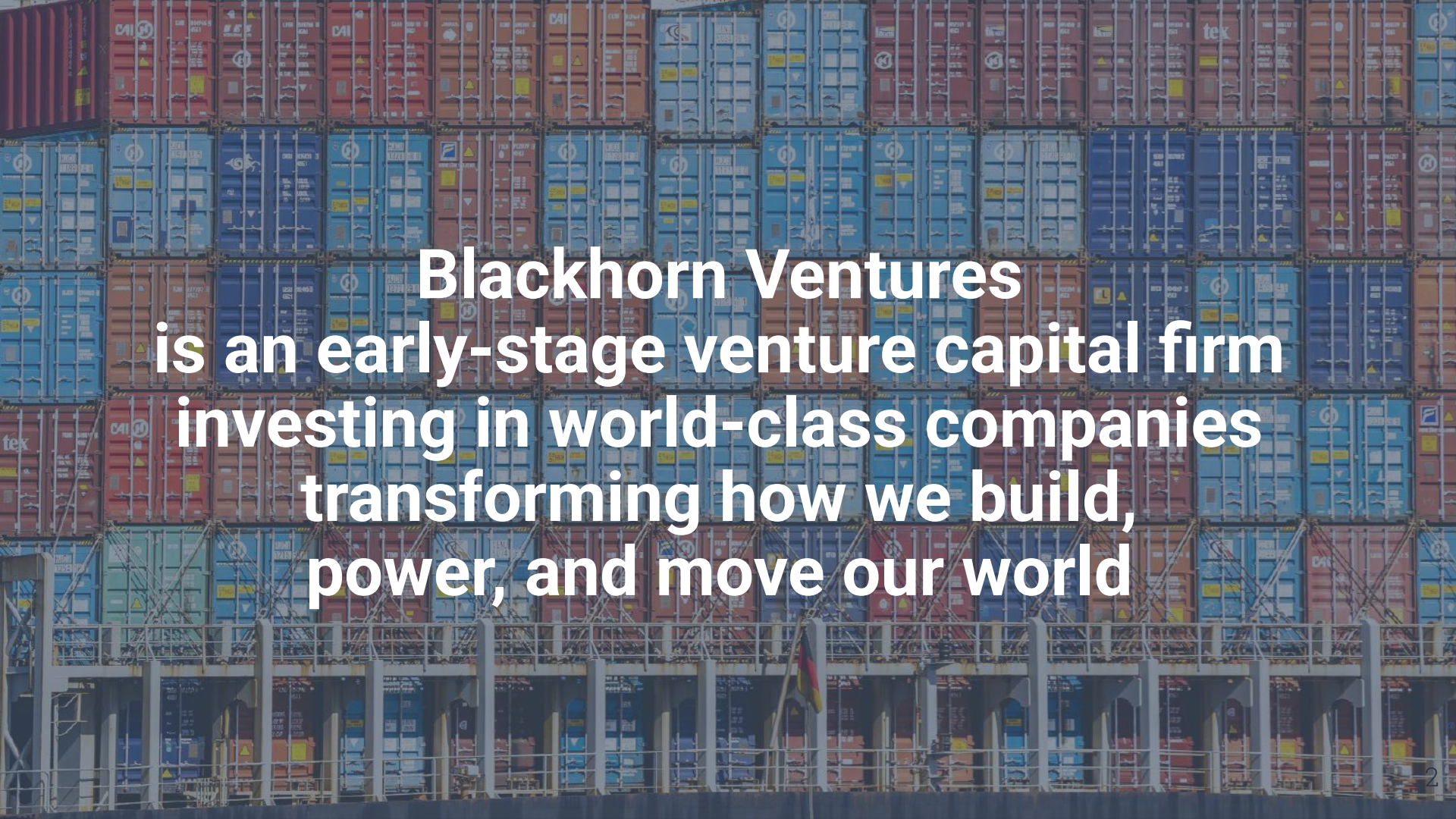




BLACKHORN
VENTURES

2024 Annual Impact Report





Blackhorn Ventures
is an early-stage venture capital firm
investing in world-class companies
transforming how we build,
power, and move our world

FROM BLACKHORN'S MANAGING PARTNERS

"At Blackhorn, we're committed to building a more dynamic, productive and resilient industrial economy. In a year marked by rising energy demand, global supply chain volatility, and a renewed domestic focus on energy security, our mission—investing in technologies that drive efficiency, value-creation, and decarbonization—has never been more relevant.

Our strategy has always been focused on prioritizing solutions that strengthen industrial competitiveness while delivering measurable impact at scale. Today, we are both inspired and optimistic, as we continue to be impressed by the proliferation of new AI and advanced digital tooling applications currently targeting the enablement of frontline workers and improving the efficiency of physical infrastructure. Our portfolio companies are reducing costs, improving reliability, and accelerating the modernization of what makes our economy move.

This report highlights how our portfolio companies are enabling this next wave of industrial transformation—empowering industry to meet today's challenges, while also capturing tomorrow's opportunities. Within a complex and uncertain macro environment, we're overwhelmingly proud of the fact that our team, and the teams that we invest in, continue to pave a path towards a stronger, cleaner, and more secure future for all."

Impact Report Authors:

Micah Kotch, *Partner*

Amanda Rohrer, *Principal*

Omar Smith, *Senior Associate*

Phil O'Connor & Melissa Cheong

MANAGING PARTNERS, BLACKHORN VENTURES



TABLE OF CONTENTS

Executive Summary	5
Measuring Impact for Scale	11
Company Case Studies	15
Appendix	27



The Blackhorn team is headquartered in Denver with offices in Silicon Valley and New York City. Our team's diversity of backgrounds and perspectives and dedication to a common mission, is key to our success.

PORTFOLIO COMPANIES BY SECTOR

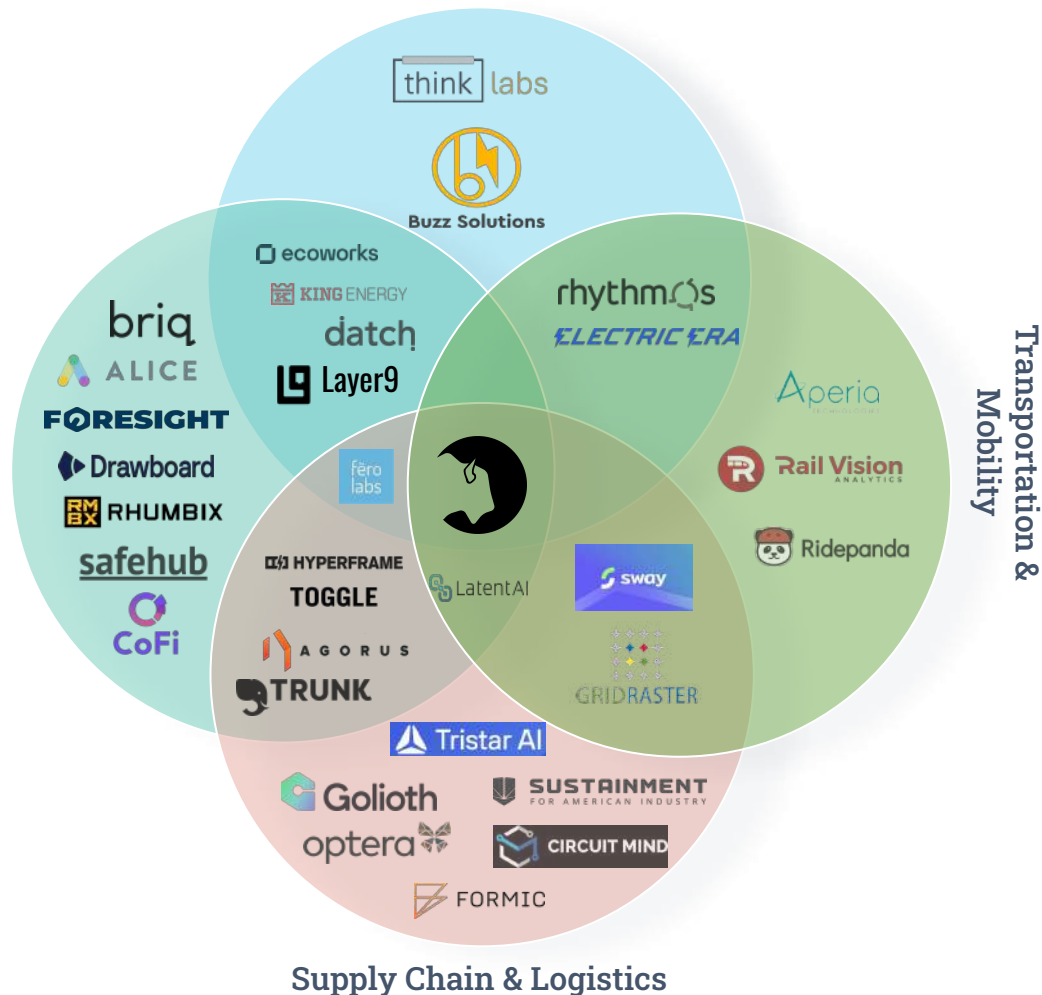
We invest in core industrial sectors that generate over \$3 trillion annually, contribute to over 80% of greenhouse gas emissions, face significant labor shortages, and have incumbents investing in innovation and ready to adopt new technologies. Opportunities that blur the line between different sectors provide interesting intersectional multiplier benefits.

34
Active
Investments

\$255M
Committed Capital

\$2.5B
Enterprise
value

Construction & Real
Estate



Only reflects active investments in IIF 1 and IIF 2.

PORTFOLIO COMPANY IMPACT OUTCOMES

Decrease GHG emissions

A reduction in greenhouse gas emissions is necessary but insufficient as it often does not fully capture the enabling impact a technology may have.

Improve resource efficiency

Improving resource efficiency is critical, but not easily captured by one metric. We believe buildings, forms of transportation, new energy generated, the energy efficiency of existing assets, material use/recovery, and people are all key resources within our industrial economy.

Drive workforce enablement

Enabling our workforce with safe, high-quality jobs and the skills and tools necessary for those jobs is critical to the success of the 4th industrial revolution and clean energy transition.

BLACKHORN IMPACT OUTCOMES

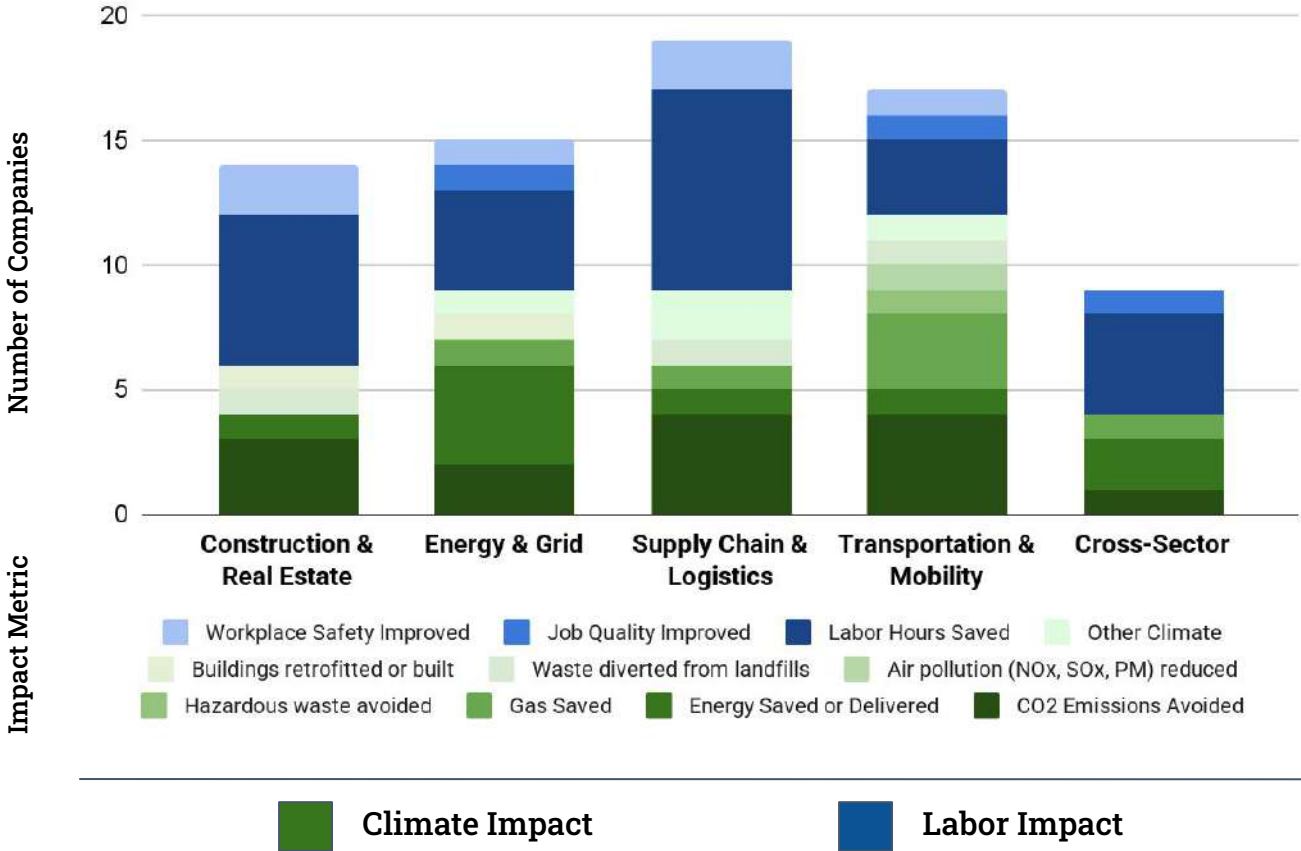
Catalyze impactful solutions

Accelerating the scale and success of our portfolio companies is critical to their impact. We help our portfolio companies through syndication building, customer introductions, and more.

Improve diversity and governance

Research shows that diverse teams and strong governance factors lead to better performance. We provide strong stewardship and support through talent introductions, policy templates, and more.

BLACKHORN'S KEY IMPACT METRICS



Reduce Emissions

282,980

Metric tons of CO2 emissions avoided

Drive Worker Enablement

449,565

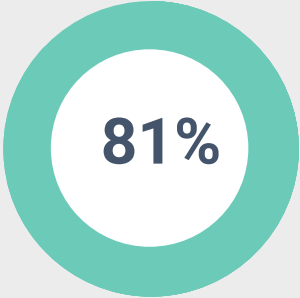
Labor hours saved

Improve Resource Efficiency

18,452

MWhs of energy saved or delivered

2024 Blackhorn Value Creation

A green circular graphic with a white center, containing the text '81%'.

81%

Of IIF 1
companies have
had a follow-on
investment round

A blue circular graphic with a white center, containing the text '233'.

233

VC syndication
intros in 2024

A yellow circular graphic with a white center, containing the text '250+'.

250+

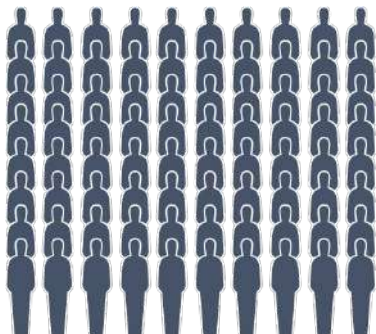
Co-investors of
Blackhorn portfolio
companies

A red circular graphic with a white center, containing the text '18,872'.

18,872

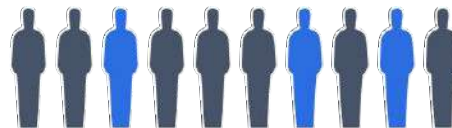
Individuals
directed to jobs
within Blackhorn's
portfolio in 2024

2024 Blackhorn Portfolio Composition



8,053

Employees or contractors
across our portfolio



29%

Diverse founders



9

UN Sustainable Investment
Goals addressed



83%

Of companies have policies
that integrate material
governance risk (e.g., data
security, employee safety, etc.)

Measuring Impact for Scale

"Blackhorn's entire team is grounded in a deep commitment to meaningful, measurable impact which translates into integrating impact into their investment thesis, not as a trade-off with returns, but as a driver of long-term value creation."

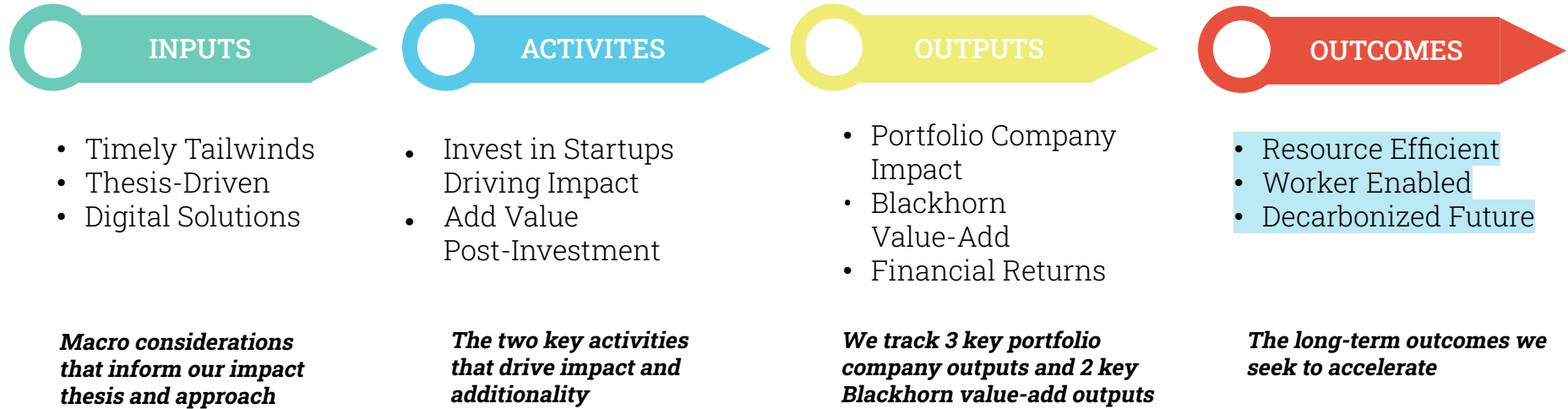


Charlie Chipchase

Managing Director & Head of Responsible Investing, Petra Funds Group



By investing in and partnering with our portfolio companies, we strive to transform our industrial economy toward a more **resource efficient, worker enabled, decarbonized future**.



A PURPOSE-BUILT MEASUREMENT APPROACH FOR OUR INVESTMENT STRATEGY

What are we solving for?

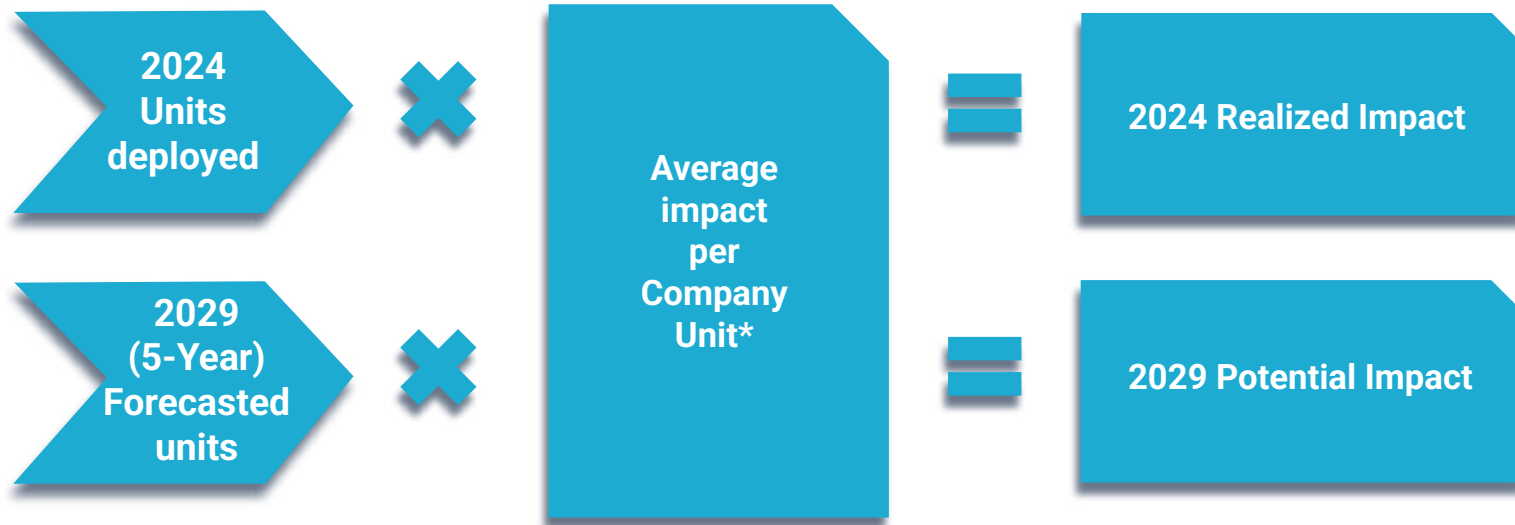
- Calculating impact for **early-stage companies** just beginning commercial operations
- Quantifying the impact of **software and/or enabling technologies**
- **Holistically capturing our impact** objective (not just GHG emissions reduction) through our multi-sector strategy

Our Approach

- Use a **per unit impact methodology** to help companies easily estimate their impact
- Estimate a company's **5-year potential impact** based on their commercial forecasts
- Estimate and **sum the various effects** of enabling technologies
- Track a **variety of impact metrics** based on what is most relevant for each company
- **Maintain flexibility** for us to enhance it annually as we learn and grow

CALCULATING AND FORECASTING COMPANY IMPACT

The Basic Formula



*Our portfolio companies measure and forecast impact by identifying the most relevant unit (e.g., miles traveled using the product) and impact metric(s) (e.g., metric tons of CO2e) for their business. Some companies can measure impact directly, while others estimate and sum their effect relative to an existing baseline. For Seed and Series A stage companies, this is one part art and one part science. A per unit impact is not comprehensive or ideal for every company – establishing an initial framework is what is most important at this stage.

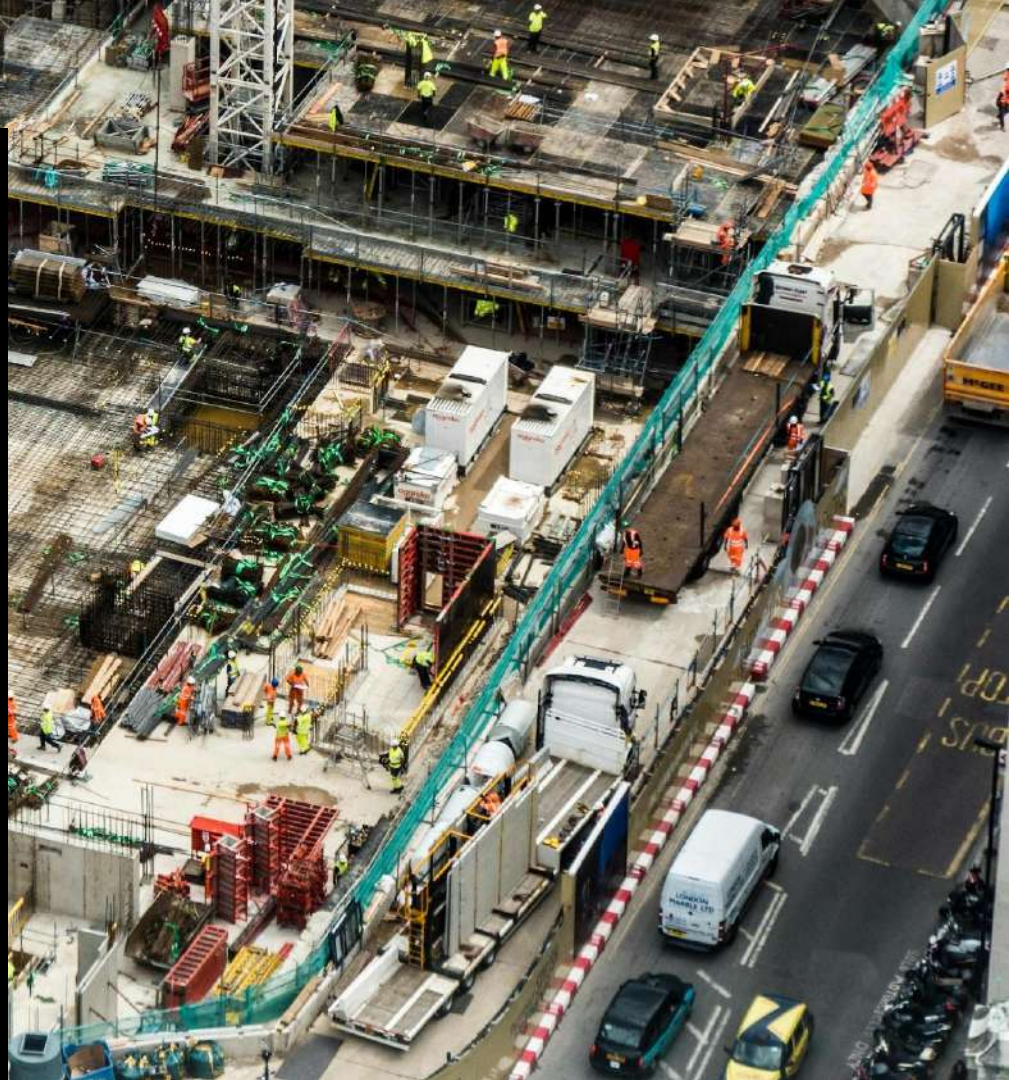
Portfolio Snapshot

“The Blackhorn Ventures team brings welcome clarity and accountability to impact measurement and management. They are pragmatic and data-driven, equipping portfolio companies with an accessible framework to rigorously track, project, and communicate their sustainability outcomes to LPs and other stakeholders. Blackhorn is further differentiated in their collaborative approach—actively engaging with the broader impact management community to share insights, align on standards, and advance best practices.”



Marieke Spence

Executive Director, Impact Capital Managers





Current Stage: Series A
OpteraClimate.com



The Numbers to Power Climate Action

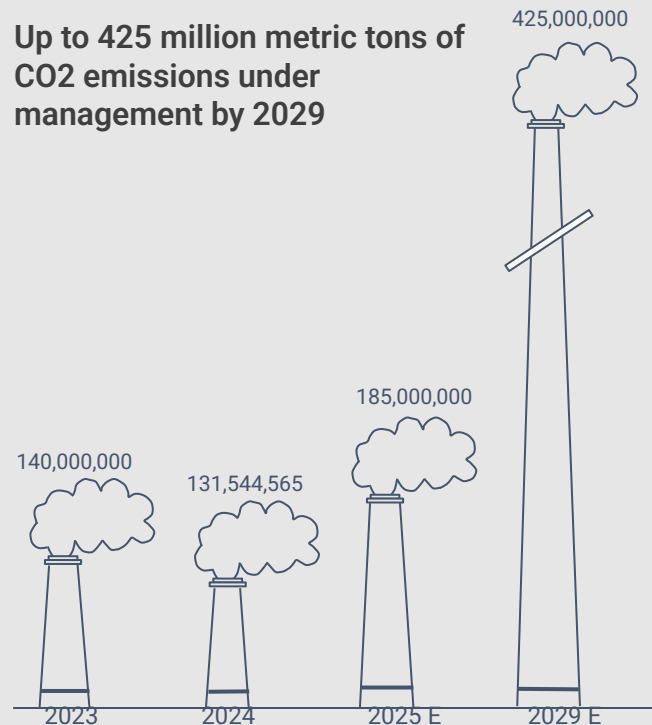
Optera's platform calculates and forecasts corporate carbon emissions while providing customers with the tools needed to drive strategic decision-making towards greater resource efficiency. Optera's Supply Chain Manager tool calculates emissions, tracks supplier progress, and enables supplier collaboration and engagement.



"Blackhorn is the type of investor you want in your corner and on your board. Their team is exceptional, helpful, and knowledgeable. They follow through and genuinely care about our mission."

- Tim Weiss, Co-Founder & CEO

Up to 425 million metric tons of CO2 emissions under management by 2029



5% of US companies report Scope 3 emissions even though they are 5.5x higher than Scope 1 direct emissions



Optimizing Heavy Manufacturing

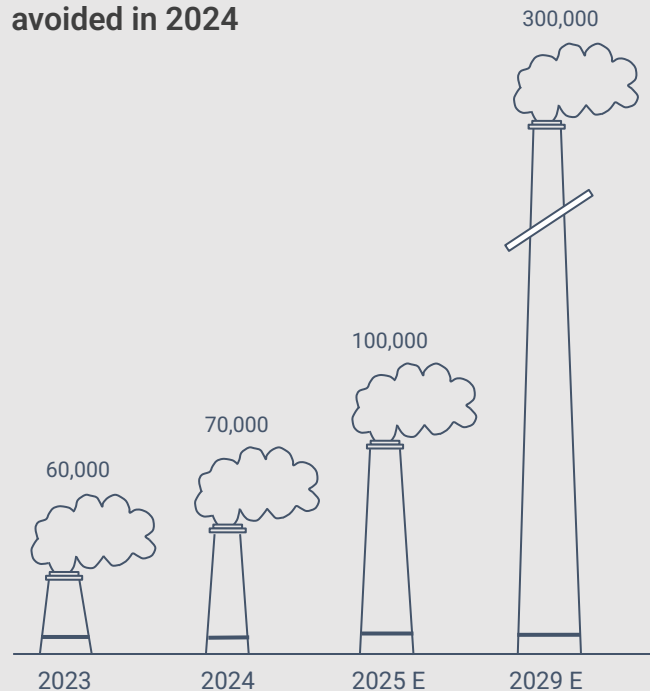
Fero Labs has developed a machine learning platform to optimize heavy manufacturing processes to reduce costs and emissions in 'hard-to-decarbonize' sectors like steel, chemicals, and cement. Fero Labs empowers process engineering teams with a no code application to generate and deploy machine learning models that drive cost and emissions reductions throughout the manufacturing lifecycle.



"Blackhorn's guidance remains indispensable as we navigate highly uncertain times, particularly as the industrial sector strives to balance cost reduction with decarbonization commitments. Their market insights, go-to-market expertise, and connections to other startups facing similar challenges **prove invaluable."**

- Berk Birand, Co-Founder & CEO

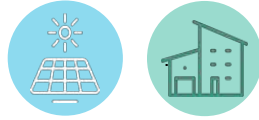
70,000 Metric Tons of CO2 emissions avoided in 2024



Fero Labs reduces steel making caster breakout incidents by 30-50% and unplanned downtime by 15-20%



Current Stage: Seed+
KingEnergy.com



Unlocking Solar for Multi-Tenant Properties

King Energy's proprietary software unlocks commercial-scale solar at multi-tenant commercial buildings (e.g., neighborhood shopping centers). By renting unused roof space and installing solar panels on-site, King Energy accelerates the deployment of solar in underserved communities. King increases NOI for property owners while delivering clean energy to local tenants at a discount to traditional utilities.



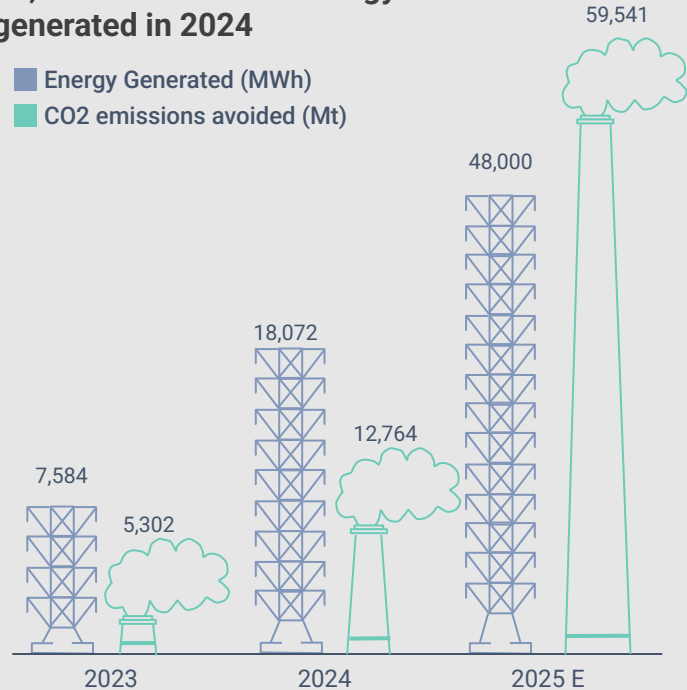
“Rising energy costs coupled with lower cost of ownership makes **renewables compelling for everyone.**”

- John Witchel,
Co-Founder & CEO

Rooftop solar at customer Arroyo Grande Home and Garden site

18,072 MWh of solar energy generated in 2024

■ Energy Generated (MWh)
■ CO2 emissions avoided (Mt)



48% of King Energy systems are located in and serve LMI communities with **\$68M+** deployed into LMI communities



Current Stage: Series A
Datch.io



Empowering the Industrial Workforce

Datch's AI voice interface learns from frontline workers talking through their jobs conversationally, structures their data, and provides insights to maximize operational efficiency. Across all industrial markets, better in-field data collection solves a critical bottleneck for the adoption of digital processes that drive labor productivity and resource efficiency.

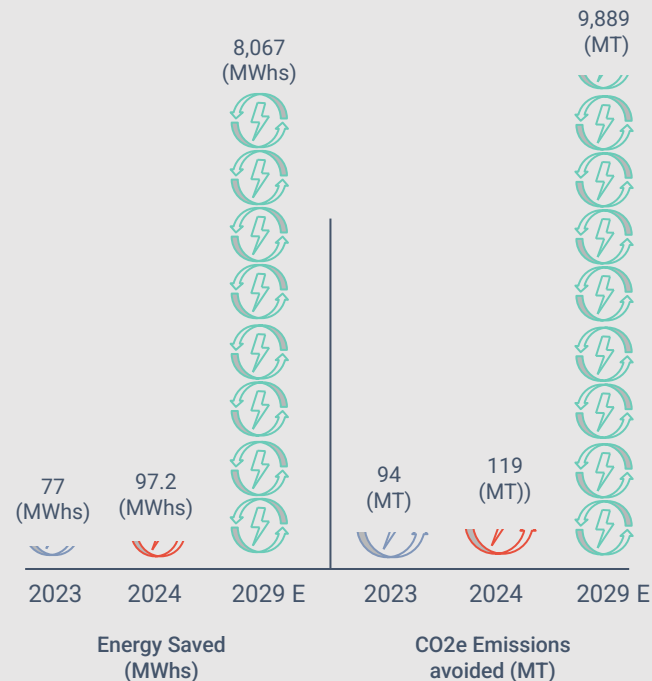


Employees at customer Powercor leveraging Datch's AI in the field.

"We're transforming how manufacturing teams diagnose and repair critical assets: **reducing parts and materials waste, extending asset lifespans, and minimizing unnecessary resource consumption.** Backed by Blackhorn Ventures, whose deep expertise in industrial decarbonization and infrastructure innovation has shaped our strategy, we're not just optimizing operations — we're helping build a more sustainable industrial future."

- Mark Fosdike, Co-Founder & CEO

97 MWhs of energy saved in 2024



21% Reduction in downtime due to reactive maintenance



Current Stage: Series A
[Ecoworks.tech](https://ecoworks.tech)



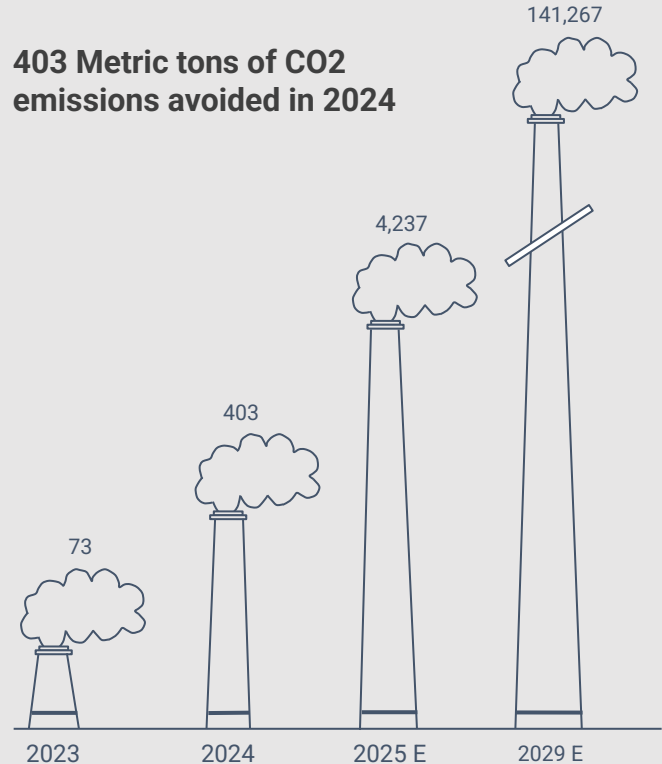
ecoworks provides innovative solutions for sustainable building renovations, transforming buildings to EU Net Zero standards within a few weeks of construction. The company is shifting work from the construction site to prefabrication, producing facade and roof elements in automated factories with a prefab-level of up to 90%. With the end-to-end software they are automating planning, project management and on-site management. By serially renovating buildings, they are creating affordable housing with a climate neutral and circular technology.



"We create a better future by developing groundbreaking, sustainable solutions that **decarbonize buildings, extend their life cycles, and increase asset value.** Through constant innovation, we transform the real estate industry globally, delivering high-impact results for our customers and the planet."

- Emanuel Heisenberg
Co-Founder & CEO

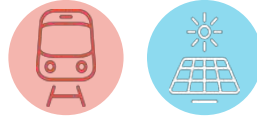
**403 Metric tons of CO2
emissions avoided in 2024**



Old buildings contribute up to 40% of global CO2 emission. ecoworks reduces the retrofit **timeline from 4-6 months to under 3 weeks**



Current Stage: Series A
ElectricEraTechnologies.com



Powering the Transition to Cleaner Transportation

Electric Era is committed to promoting electrification and decarbonization in transportation by making EV fast charging widely available and cost-effective. 145M eclectic vehicles are expected to be on the road by 2030, but the supply of EV fast charging infrastructure isn't keeping pace. Electric Era's modular electric vehicle battery and smart charging system enables convenient stores and gas stations to install EV fast chargers without the need for costly grid upgrades and reduces the cost of energy for site owners and customers.

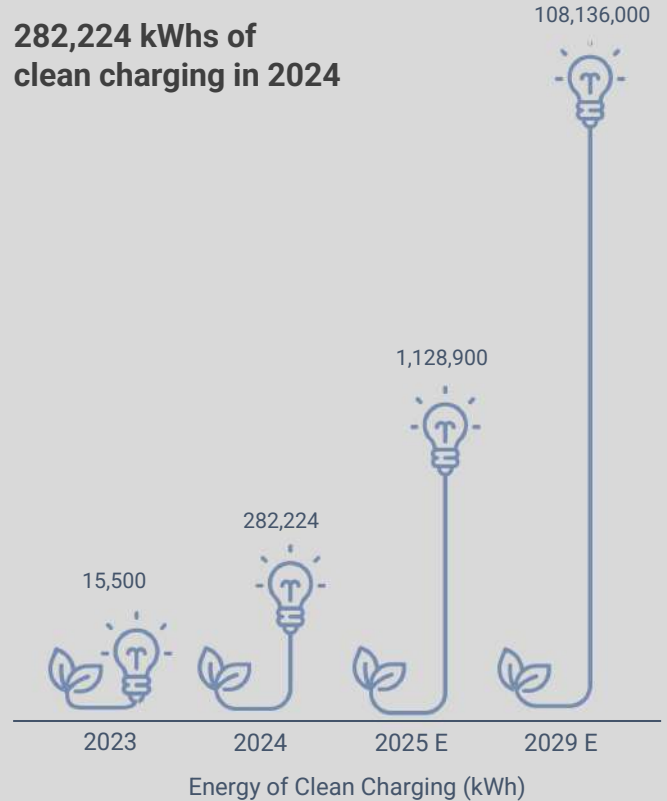


Electric Era charging at Costco's Ridgefield, WA store

"Blackhorn's proven ability to select, coach, and grow businesses is evident in my near daily interactions with their rockstar team. They have helped propel Electric Era to tens of millions in revenue and to charging 3.6 million miles each year for EV drivers."

- Quincy Lee, Co-Founder & CEO

282,224 kWhs of
clean charging in 2024



592+ MWh of energy delivered across **18,000+** charging sessions with Electric Era's fast chargers since their inception



Revolutionizing Tire Management for Greener Trucking

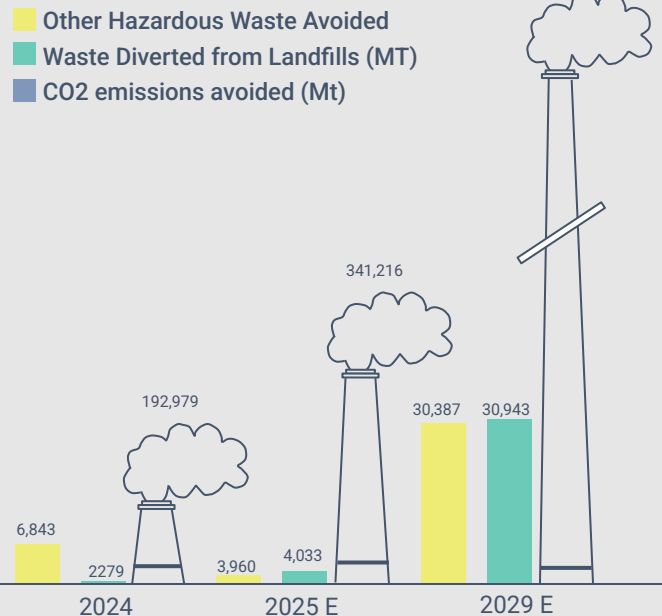
Aperia's tire management solutions improves the efficiency and sustainability of commercial transportation. While global trade is highly reliant on trucking, the trucking industry is responsible for about 30% of transport CO2 emissions. Over 50% of trucks on the road have tires with incorrect pressure, which impacts fuel economy. Aperia's Halo Tire Management System ensures that tires are properly inflated, thereby improving fuel efficiency, extending tire life, and drastically lowering maintenance costs. With Aperia's innovative system, fleet operators can not only significantly cut down on operational costs but also contribute to a greener, more sustainable future for global transportation.



“Aperia’s work is made possible by a team that is passionate about solving big problems—and by partners like Blackhorn who believe in and lift up the people behind the impact mission. We’re grateful for their continued support and perspective.”

-Joshua Carter Co-Founder & CEO

192,979 Metric tons of CO2 emissions avoided in 2024



If all tractor-trailers in the US were equipped with Halos, it would reduce CO2 emissions by
9 million tons per year



Current Stage: Seed
Railvision.ca



Pioneering Sustainable Rail Solutions

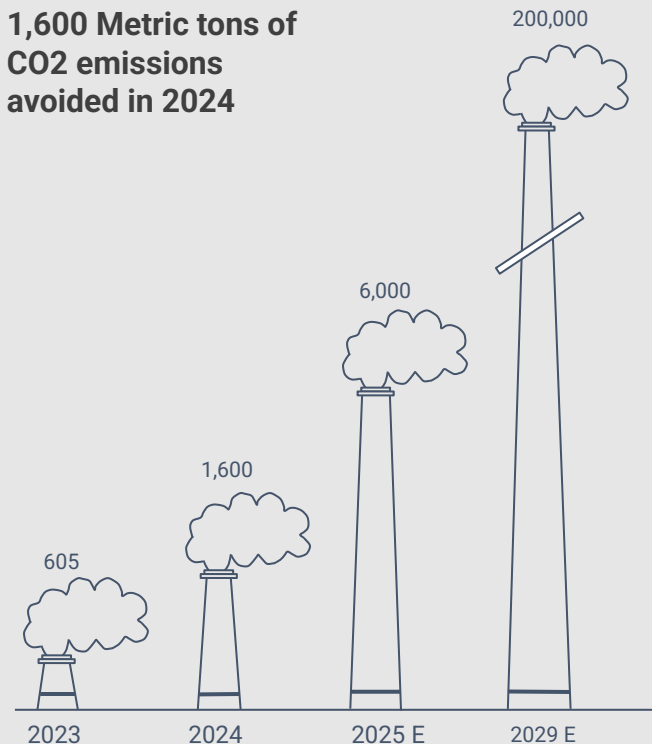
RailVision provides cognitive vision sensor technology and safety systems to maximize train efficiency and minimize GHG emissions for the railway industry. Its AI-powered software platform integrates train sensors, track sensors, weather data, and operational data to provide train operators with insights and decision support that enhance fuel efficiency, reduce costs, and improve service reliability. Railways often serve as the foundation of national and regional economies, facilitating trade and movement of goods. RailVision ensures that rail transport is sustainable, efficient, and reliable.



“Every dollar our customers save on diesel fuel directly boosts our revenue while simultaneously reducing greenhouse gas emissions.”

- Dev Jain, Co-Founder & CEO

**1,600 Metric tons of
CO2 emissions
avoided in 2024**



RailVision reduces fuel use and resulting GHG emissions by up to 20%



Current Stage: Series A
Shipsway.com



Enabling Circularity with Returns and Exchanges

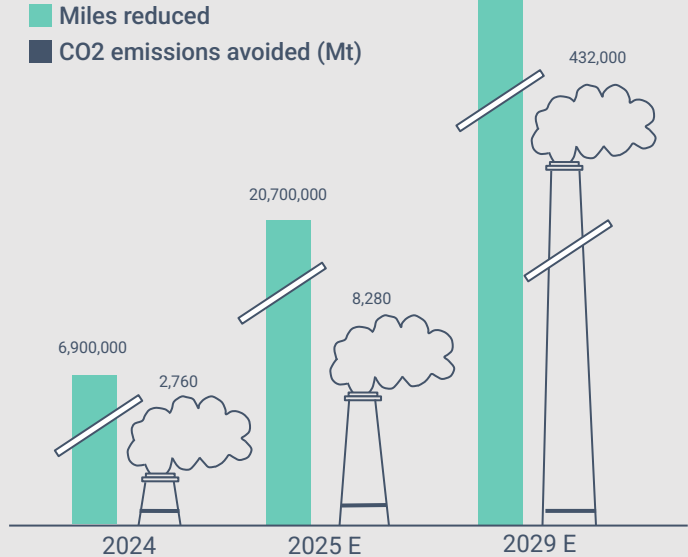
Sway is a white-glove delivery and home return pickup platform providing companies and their shoppers a transparent, speedy delivery service and box-less, label-less returns and exchanges. Sway's proprietary software platform combines warehouse management, returns management, and transportation management tailored to handle high-volume two-way fulfillment.



"Blackhorn brings more than capital — **they're strategic partners who help us put in place scalable processes to measure our impact.** Their support continues to accelerate both our growth and our mission."

- Eric Wimer, Co-Founder & CEO

6.9 million transport miles reduced in 2024



13.7%

Fewer CO2 emissions due to reduction of 768,178 miles driven per year relative to traditional delivery

378,328 kg CO2/year projected GHG savings due to Sway's returns and exchanges



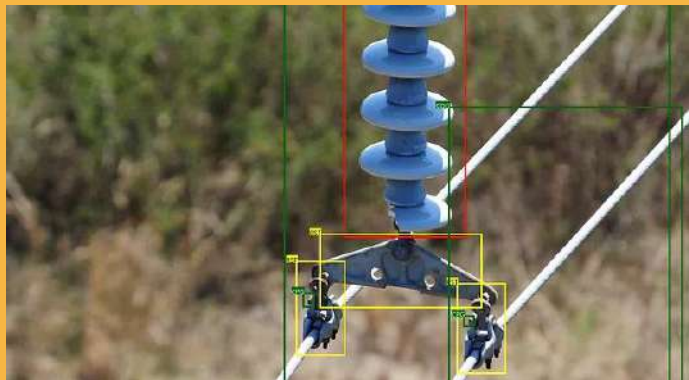
Buzz Solutions

Current Stage: Series Seed+
<https://buzzsolutions.co/>



AI-Driven Safety and Efficiency for Energy Infrastructure

Buzz Solutions safeguards the world's energy infrastructure by enhancing the safety and efficiency of the electric grid through innovative data analytics and machine learning. Buzz Solutions's proprietary AI algorithms identify potential fire hazards and maintenance issues from images of power transmission and distribution infrastructure taken from drones, helicopters, and fixed-wing aircraft.

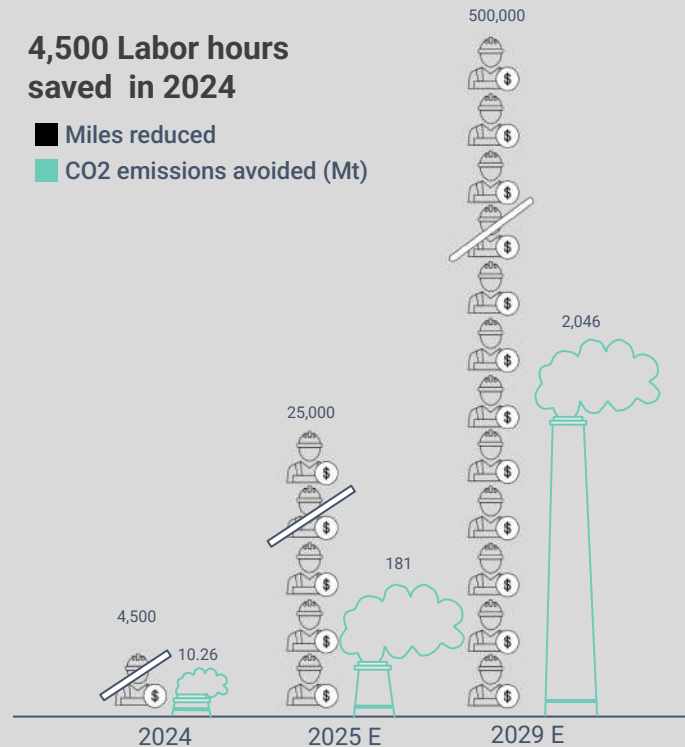


"Blackhorn Ventures has been a true partner for Buzz Solutions in our mission to modernize the grid. Their industry expertise have helped us scale solutions that improve reliability, safety, and support a cleaner energy future."

- Kaitlyn Albertoli, CEO & Co-founder

4,500 Labor hours saved in 2024

■ Miles reduced
■ CO2 emissions avoided (Mt)



1,200 maintenance hours saved per substation

Mitigated risks of vandalism and physical security threats



Current Stage: Series A
<https://www.ridepanda.com/>



Transforming Commutes, Reducing Emissions, Building Better Cities

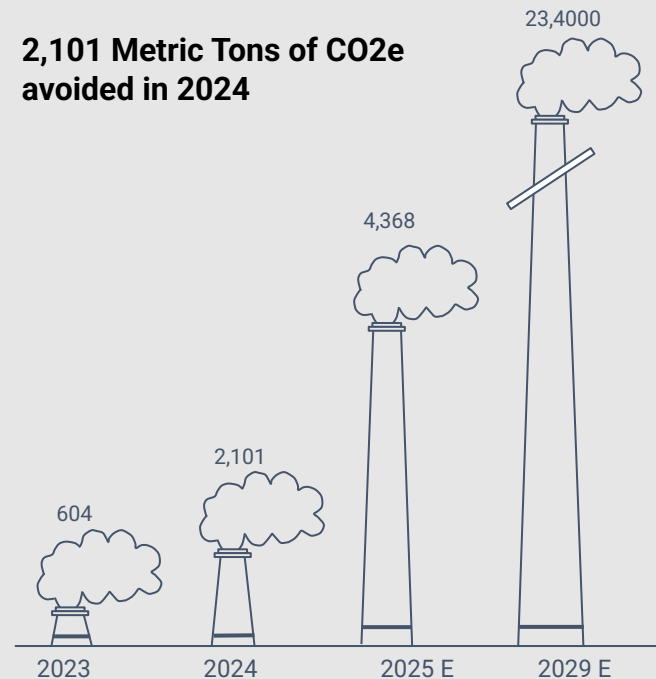
Ridepanda provides a curated marketplace for electric micro mobility solutions, including e-bikes, e-scooters, and e-mopeds. Their marketplace offers consumers and organizations a vetted selection of high-quality electric vehicles, bundled with guidance, financing, insurance, and maintenance support. By making it easy to discover, purchase, and maintain e-mobility solutions, Ridepanda reduces urban congestion, lower carbon emissions, and promote healthier, more equitable cities. Their platform not only empowers individuals to transition to eco-friendly transportation, but also supports employers and fleet owners seeking to electrify their mobility offerings.



“Ridepanda’s avoided emissions demonstrates the **powerful impact that micro-mobility can have when made accessible at scale** - and we’re just getting started.”

- Chinmay Malaviya,
Co-founder & CEO

**2,101 Metric Tons of CO₂e
avoided in 2024**



Biking solves the problem of limited parking and results in **2.5 times faster commuting** during rush hour

**210K+ car trips avoided, 650Kg
CO₂ emissions saved**

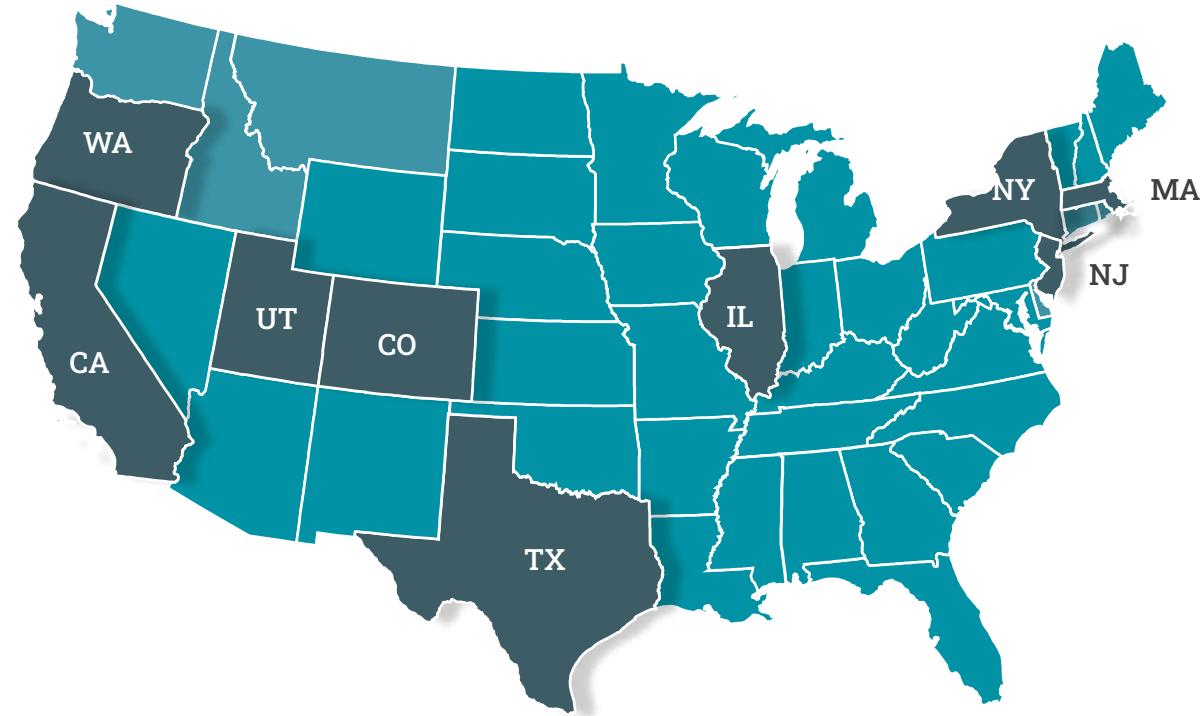


BLACKHORN
VENTURES

Appendix



WHERE WE INVEST



United States



Canada



UK



Germany



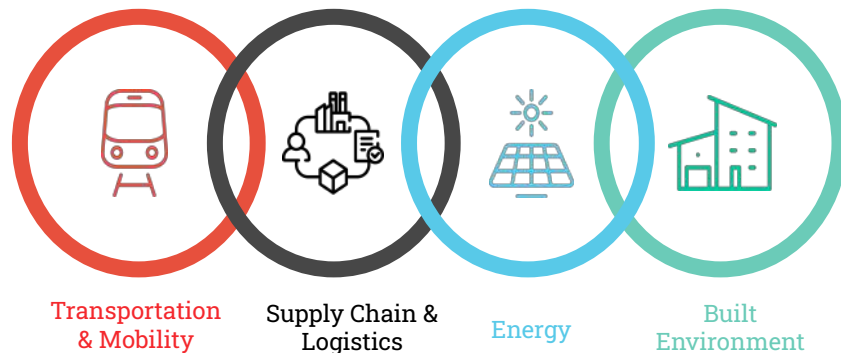
Australia

We Align and Collaborate with the Leaders in Impact

- Our processes and reporting are aligned with key **International Standard-Setting Bodies**
- We leverage recognized **Industry Measurement Frameworks**
- We utilize external **Advisory Support** and act as a **Thought Leader** in key organizations
- We have received **Industry Acknowledgement** for our impact work



THE INPUTS FOR OUR THEORY OF CHANGE



Timely Tailwinds	Thesis Driven	Digital Solutions
Invest in core industrial sectors that: • Represent \$3 trillion of economic value annually • Contribute to over 80% of greenhouse gas emissions • Face significant labor shortages • Have incumbents investing in innovation and ready to adopt new technologies.	Utilize our team's domain expertise to proactively: • Identify critical customer pain points • Leverage cutting-edge technologies for paradigm shifts • Target high-potential areas for disruption within our sectors	Invest in enterprise software that: • Scales proven technologies and equips our workforce for a decarbonized future. • Focus on capital-efficient, easy-to-implement solutions over novel hardware • Prioritize market and execution risk over technical risk.

THE ACTIVITIES OF OUR THEORY OF CHANGE

1

Invest in Impact-Driven Startups

We invest in entrepreneurs transforming our industrial sectors to be safer, more efficient, and carbon-free.

2

Partner to Scale

We engage founders and our industry partners to help enhance our companies' probability of success and scale. As the company grows, its impact grows.

3

Learn and Evolve

We are committed to learning, growing, and adapting our investment and impact approach alongside our portfolio companies.

WE TRACK IMPACT THROUGH TWO KEY PATHWAYS:

1 Invest in
Impact-Driven Startups

Improve resource
efficiency

Decrease GHG
emissions

Drive workforce
enablement

2 Partner Closely to Scale

Catalyze impactful
solutions

Improve diversity &
governance

EXAMPLE METRICS FOR EACH IMPACT OUTCOME

INVEST IN IMPACT-DRIVEN STARTUPS



Improve resource efficiency

kWhs of energy saved

Metric tons of waste diverted from landfill



Decrease GHG emissions

Metric tons of CO2 emissions avoided



Drive workforce enablement

People whose workplace safety improved

PARTNER CLOSELY FOR SCALE



Catalyze impactful solutions

Successful commercial growth

\$ follow-on capital raised



Improve diversity & ESG

% Diversity of senior leadership

% Implementation of ESG policies

Focus on Empowering Our Team and Our Founders

The Blackhorn Ventures Portfolio Growth Platform provides our founders with targeted resources and hands-on assistance to accelerate growth. The Platform makes Blackhorn partners more efficient and impactful by optimizing engagement processes, and creates accountability for actions that positively impact companies trajectories.

Blackhorn Platform Offerings

TALENT ACQUISITION	CUSTOMER INTRODUCTIONS	FINANCE AND FUNDRAISING	IMPACT MEASUREMENT	LEADERSHIP DEVELOPMENT
MARKETING & COMMS	COMMUNITY	OPERATIONS	EVENTS	

IMPACT & ESG ANALYSIS THROUGHOUT THE INVESTMENT LIFECYCLE

SOURCING

Proactively source and screen deal opportunities based on thesis alignment

PIPELINE

Identify relevant impact outcomes within our initial deal screening rubric

DUE DILIGENCE

Conduct thorough impact analysis as part of our investment due diligence including:

- Project Frame's per unit solution impact
- Theory of change and 5 dimensions of impact
- Alignment with UN SDGs
- Opportunities for Blackhorn additionality

TERM SHEETS

Require annual impact reporting and detail suggested ESG & DEI policies to be implemented at each company

POST INVESTMENT

Partner with companies on their impact methodology, diversity initiatives, internal policies, environmental and social KPIs and more. Measure realized and potential impact annually.

Blackhorn's stewardship approach reflects how our portfolio companies deliver impact responsibly by taking into consideration Environmental, Social, and Governance factors and Blackhorn's role as a steward and board member.

1

ESG Integration in Investment Process

Incorporate ESG review during due diligence to assess potential risks and areas for improvement that may not be apparent in traditional financial analyses, leading to more informed investment decisions and better long-term outcomes.

2

Active Portfolio & Board Engagement

Proactively engage with all portfolio companies by providing resource guides and templates, expertise, and regular support. Highly active board members.

3

Diversity & Inclusion Initiatives

Foster diversity and inclusion internally and across our portfolio companies. This not only aligns with our ESG principles, but leverages the proven benefits of diverse teams in driving innovation and performance.

4

Transparent Reporting & Engagement

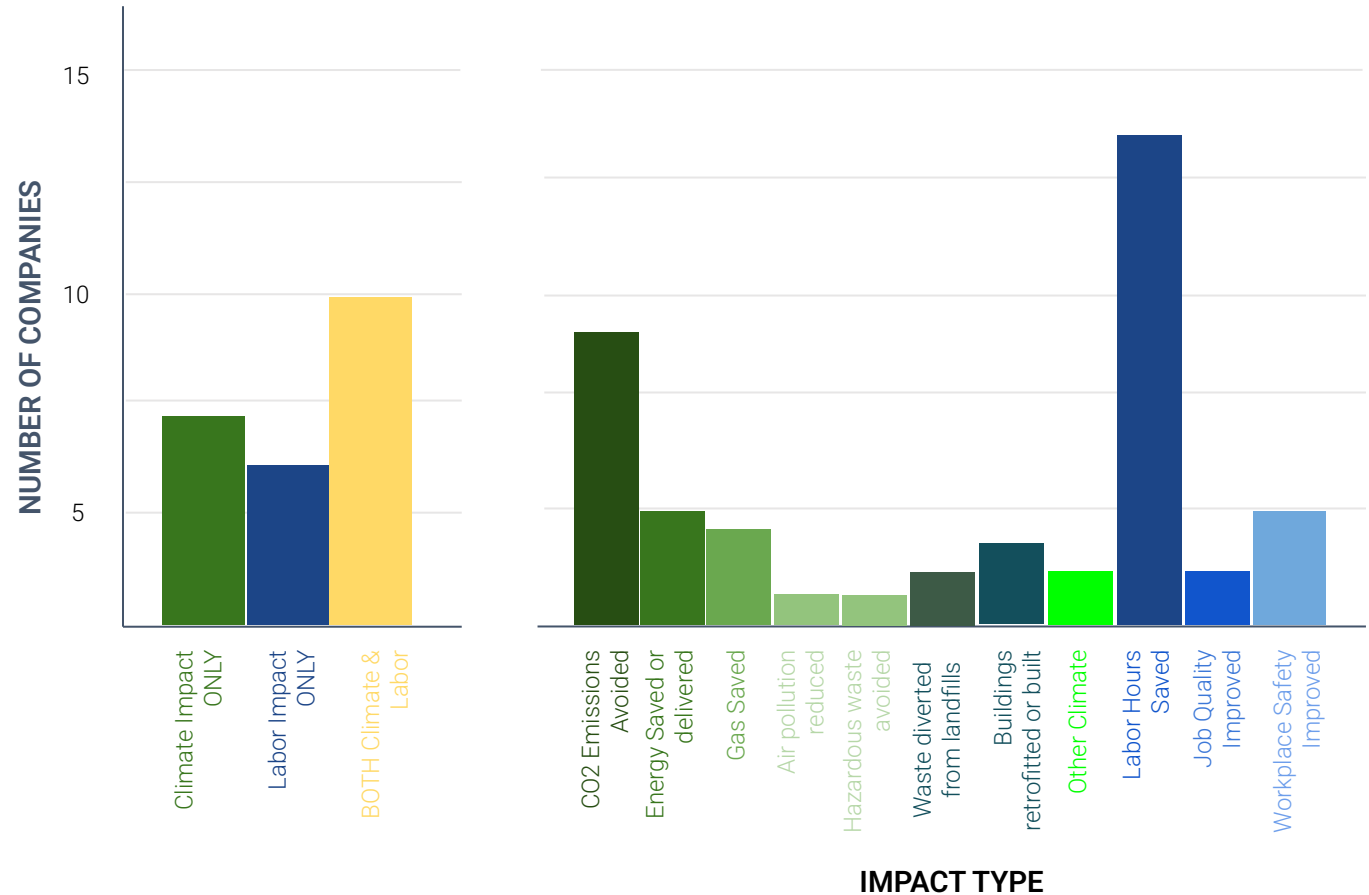
Include side letter requirements for annual transparent reporting from portfolio companies in line with SFDR regulations. This includes each companies' operational emissions, internal governance policies, and key initiatives/KPIs.

2024 PORTFOLIO COMPANY IMPACT



Footnote: Portfolio companies self-report impact leveraging consultation with ESG partner, Kara Impact. For more details on methodology see the following section.

BLACKHORN'S KEY IMPACT METRICS



Reduce Emissions

282,980

Metric tons of CO2 emissions avoided

Drive Worker Enablement

449,565

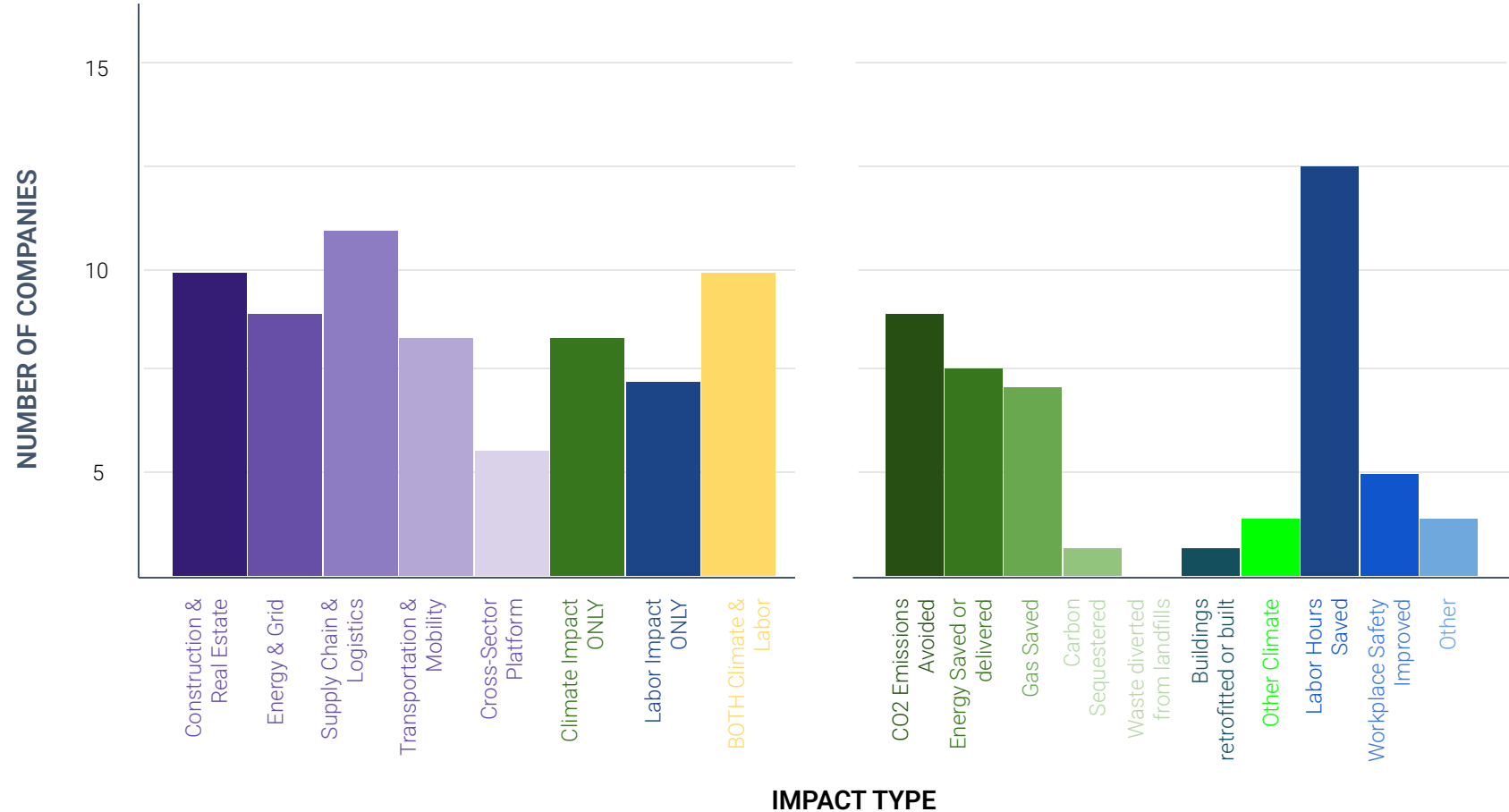
Labor hours saved

Improve Resource Efficiency

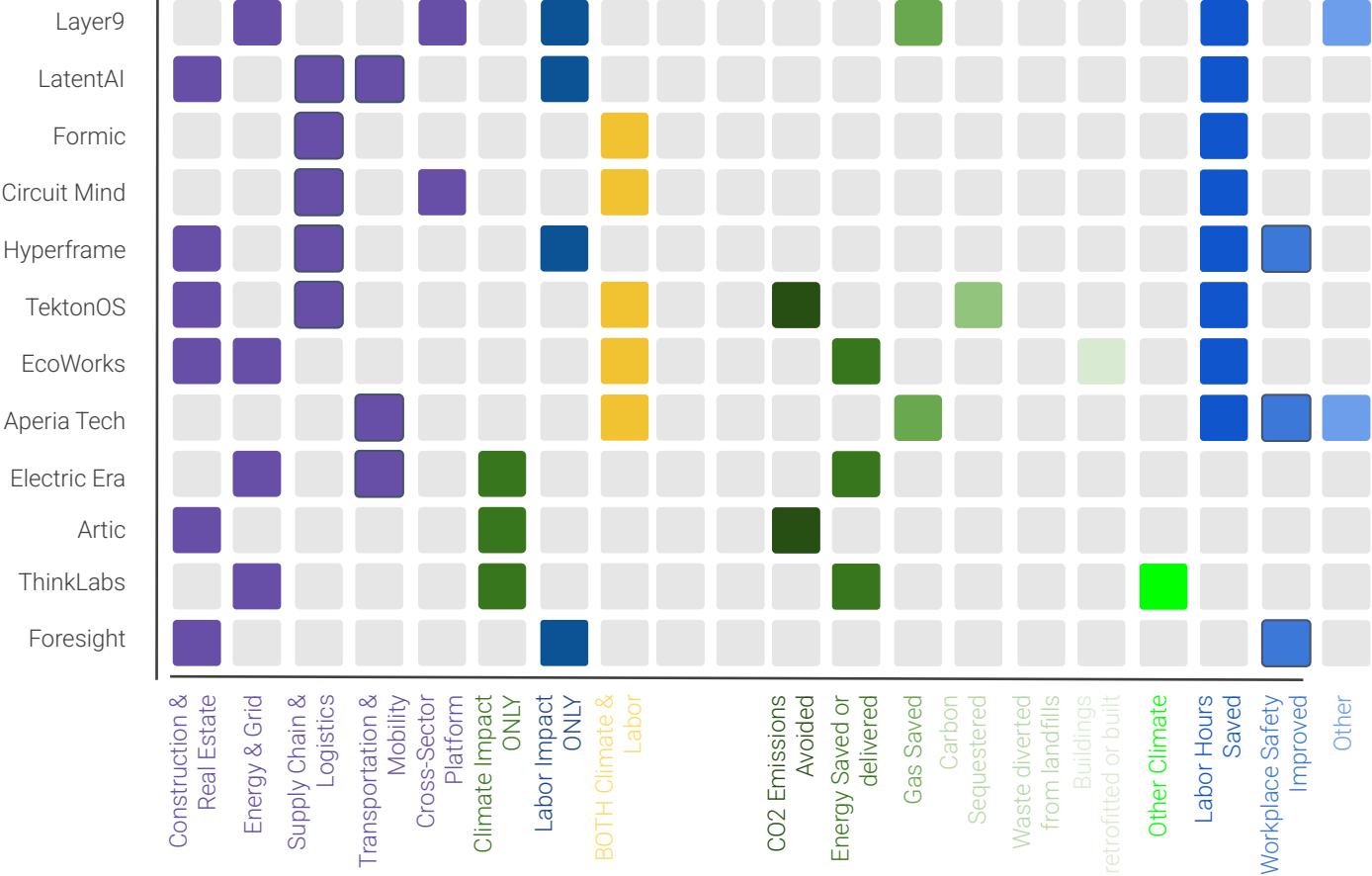
18,452

MWhs of energy saved or delivered

BLACKHORN'S KEY IMPACT METRICS



BLACKHORN'S KEY IMPACT METRICS



SECTOR

Make a big impact with professional slides, charts, infographics and more.

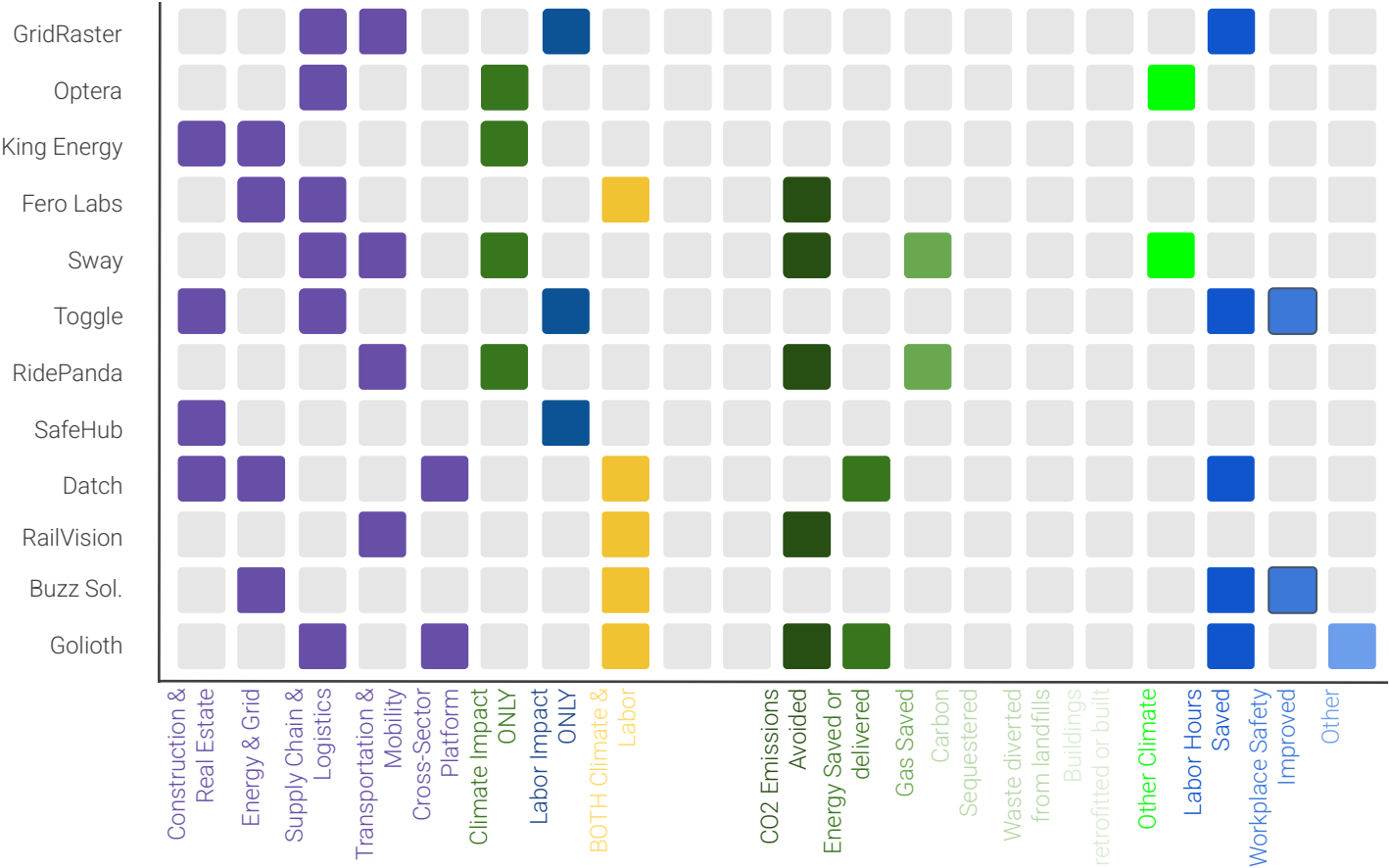
CLIMATE IMPACT

Make a big impact with professional slides, charts, infographics and more.

LABOR IMPACT

Make a big impact with professional slides, charts, infographics and more.

BLACKHORN'S KEY IMPACT METRICS



SECTOR

Make a big impact with professional slides, charts, infographics and more.

CLIMATE IMPACT

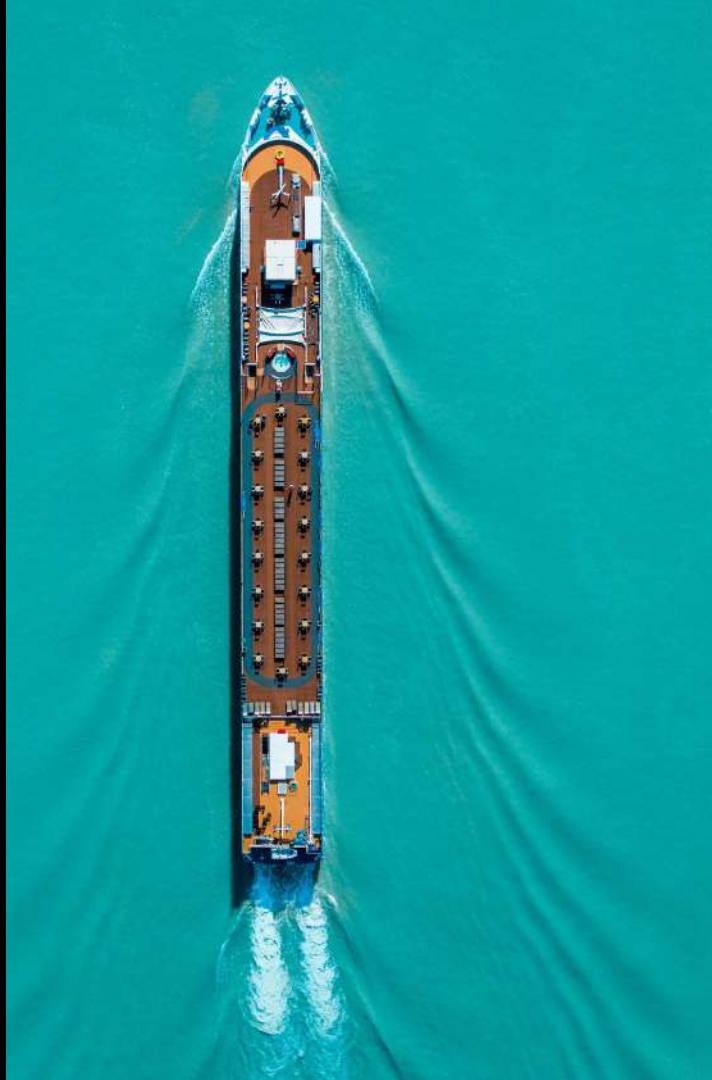
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LABOR IMPACT

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Thank You



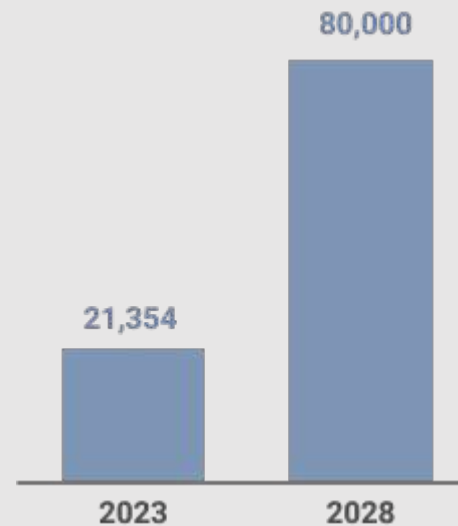


Current Stage: Series C
[GetForesight.com](https://getforesight.com)

Built
Environ.



21,354 people whose workplace safety
improved in 2023



“Partnering with Blackhorn allows Foresight to amplify its commitment to enhancing sustainability across American businesses and **safeguarding the livelihoods of hardworking men and women** in blue-collar industries, ensuring they return safely to their families after every shift.”

- Peter Grant Co-Founder and CEO

**Blackhorn Ventures
invests in world-class
entrepreneurs
transforming how we
build, power, and move
our world.**

Blackhorn Ventures was founded in 2017. Industrial Impact Fund I (IIF 1) was launched in 2019, and Industrial Impact Fund II (IIF 2) was launched in 2022.



34

Active Investments

\$255M⁽¹⁾

Committed Capital

\$2.5B

Enterprise value

Data as of 12/31/2024 and only reflects investments made out of IIF 1 and IIF 2.

(1) Total capital raised for IIF2 equals ~\$155M, which includes an LP side-car vehicle. Fund figures are shown consolidated for Main Fund and Affiliates Fund holdings.

Blackhorn invests from Seed to Series A, and then supports companies as they scale.

Blackhorn's portfolio companies are transforming our industrial economy with conviction and grit, making us optimistic for a better future.

Our Portfolio at a Glance



9

UN Sustainable
Investment Goals
addressed



6,330

Employees or
contractors across our
portfolio companies

9 States

CA, CO, IL, MA, NJ, NY, TX, UT, WA

4 Countries

Canada, The United Kingdom,
Germany, Australia

3.4 Years

Average IIF 1
investment age

1.2 Years

Average IIF 2
investment age

2024 PORTFOLIO SNAPSHOT



Footnote: Portfolio companies self-report impact leveraging consultation with ESG partner, Kara Impact. For more details on methodology see the following section.

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