



BRAEMAR
ENERGY VENTURES

**ESG & IMPACT
REPORT
2024**

Reimagining...

...how we move, power, make and build with technology investments that drive massive impact in curbing global climate change.

HISTORY

Braemar Energy Ventures was formed in 2003 to find, invest in, and scale transformative energy-tech businesses that contribute to global sustainability and combat climate change.

Over two decades, we have built a track record of impactful business partnerships that are revolutionizing the way people use energy and interact with energy infrastructure.



Braemar Castle was built in 1628 and has a unique significance as the only community-run castle in Scotland. For us at Braemar Energy Ventures, it is the perfect example of standing the test of time, all the while serving an important role in the community.

SHARED MISSION

Our mission is to support teams of individuals rewriting the future of our world with breakthrough climate technologies and business models tackling the global energy transition to net-zero carbon. We commit to a more sustainable, resilient, and equitable global energy system for all stakeholders by backing early-stage companies and helping them scale to transform industry. In addition, we as a firm commit to constantly re-evaluate our own ways of thinking, working and governing ourselves, honoring open mindedness and open discourse as core contributing values.



MOBILITY
OF THE FUTURE



POWER
SECTOR TRANSITION



RESOURCE
REVOLUTION



INFRA-TECH

Braemar has been an impact investor from its inception with the strong belief that the world needs market-driven innovative sustainable energy and environmental solutions that will improve the quality of life and security of citizens of the global community. Using our deep knowledge of this complex ecosystem, we help our portfolio companies build critical partnerships necessary to scale their solutions to meet the challenges posed by the devastating effects of climate change.

BILL LESE

Co-founder and Managing Partner



The Global Energy Transition

A milestone in the global energy transition occurred in 2023 when 200 nations, including OPEC countries, agreed to phase down fossil fuel consumption in order to achieve net zero emissions by 2050. This alignment comes as the world sees devastating human and economic losses from climate impacts and seeks solutions to both reduce the causes and manage the effects of climate change.

Meeting this global challenge will require driving greenhouse gas emissions out of every sector of the economy. It is Braemar’s perspective that these endeavors will be impossible without innovation and new technologies, underpinning Braemar’s commitment to investing in transformative solutions that answer the world’s greatest needs.

3X

increase in global renewable energy capacity agreed at COP28

[Reuters](#)

\$4.8 TRIL.

average annual investment needed for energy transition

[BNEF](#)



Imperatives for Innovation

A record \$1.7 trillion was invested in clean energy this year across the world, continuing a 6-year streak of increases.¹ This momentum defies headwinds from inflation, rising interest rates and geopolitical tensions. Climate tech also took a greater share of a compressed private equity market in 2023.²

Historic U.S. investments in infrastructure continue to drive innovation in the energy grid, EV charging networks, electrification, and supply chain management. Government policy worldwide is encouraging more localized, community-based solutions to provide both clean electricity and greater resiliency to climate events. U.S. companies are well-positioned to deliver new products and scale solutions in clean energy and other low carbon technologies.

34%

emissions reductions dependent on technologies in development

[IEA](#)

\$634 BIL.

electrified transport spend, largest sector in 2023

[BNEF](#)

\$135 BIL.

global investment in energy supply chain in 2023

[BNEF](#)

¹ [IEA, 2023.](#)

² [PwC, 2023.](#)

ESG PROGRAM AT BRAEMAR

Working to benefit all stakeholders

We launched our formal ESG program in 2019 when we instituted our first ESG policy.

Since then we have further developed our approach by expanding aspects of our due diligence, ESG governance team, and reporting. Today our program is governed by our current policy, which covers ESG integration into the following broad processes:

EXCLUSIONARY PRACTICE

INVESTMENT ANALYSIS AND DECISION-MAKING

ASSET OWNERSHIP

REPORTING AND DISCLOSURE

ACCOUNTABILITY AND TRANSPARENCY

While our policy is a static depiction of our approach to ESG integration, we live and breathe ESG dynamically on a day-to-day basis. ESG concerns get raised and discussed by our management teams regularly, and we constantly re-evaluate ESG in our portfolio and engage with our portfolio leaders on ESG issues as they arise.

 [DOWNLOAD OUR IMPACT AND ESG POLICY HERE](#)

 [DOWNLOAD OUR EMISSIONS REPORT HERE](#)

IMPACT & ESG LEADS

Our ESG program is governed by Lori Collins, ESG Leader and Bill Lese, Managing Partner, alongside ACA members Dan Mistler, Partner of ESG Advisory Practice and Devarshi Pandya, ESG Consultant, who oversee all aspects of the ESG program and are responsible for the implementation of our Impact and ESG policy. We have a long-standing relationship with the ACA Group, and as a strategic partner, they have contributed to the architecture of our program since its inception.



LORI COLLINS
ESG Leader



WILLIAM D. LESE
Managing Partner



DAN MISTLER
Head of ESG Advisory,
ACA Group



DEVARSHI PANDYA
ESG Consultant,
ACA Group

UN PRINCIPLES FOR RESPONSIBLE INVESTMENT



We believe that transparency is important for our business and all of our stakeholders. Braemar Energy Ventures became a signatory to the UN Principles for Responsible Investment (PRI) in 2019 in an effort to align with best practice approaches to ESG and to help our stakeholders understand the central nature of ESG in our work.

We are encouraged by the growth in UN PRI membership, and we look forward to collaborating with the PRI as a signatory for years to come.

GLOBAL ESG FRAMEWORKS

While we participate in the UN PRI as our main framework for ESG reporting, we also look for opportunities to align with other ESG frameworks relevant to our business, including but not limited to:

- The Task Force on Climate-Related Financial Disclosures (TCFD)
- The UN Sustainable Development Goals (SDGs)

ESG IN OUR PORTFOLIO COMPANIES

Prioritizing People and the Environment

At Braemar, we have been engaging with our portfolio companies on ESG and impact related aspects of their businesses for decades.

We have taken steps to formalize our portfolio data tracking procedures with the goal of developing a comprehensive and referenceable baseline of ESG metrics for our companies. While we engage with all of our portfolio companies on ESG, we have embarked on a more formal program of metrics with a subset of our portfolio, including:

CARBONFREE

-chargepoint+

Enerkem

generalfusion

RENEW FINANCIAL™

Utilidata

Today, we track the following KPIs in our portfolio:



EMPLOYEE

- Number and percentage of diverse employees
- Ratio of female to male board members
- Gender pay-gap



ESG MANAGEMENT

- Diversity, Equity, and Inclusion Policy
- Employee Satisfaction tracking
- Data Security Policy
- Ecological impacts on surrounding communities
- Hazardous Waste Policy



ESTIMATED GHG EMISSIONS

- Scope 1
- Scope 2
- Scope 3 (Business air travel and employee commute, with the exclusion of portfolio's supply chain emissions)



POTENTIAL GHG IMPACT

- Reduction in tons of CO₂e
- Reduction in tons of CO₂e per employee
- Reduction in tons of CO₂e per dollar of revenue

A blue-tinted photograph of a large industrial facility, likely a fusion reactor. The image shows a complex network of pipes, metal structures, and large cylindrical components. Several workers in protective suits are visible, engaged in tasks. The overall scene is dimly lit, emphasizing the industrial and technical nature of the environment. The text 'ESG IN ACTION' and 'Case Studies in Impact' is overlaid on the left side of the image.

ESG IN ACTION
Case Studies in Impact



To capture 10% of industrial CO₂ emissions globally¹

CarbonFree has developed patented technologies that capture CO₂ from stationary point source emitters and transform them into profitable carbon-neutral chemicals without the need for a price on carbon.

SkyMine and SkyCycle create sodium bicarbonate (baking soda), precipitated calcium carbonate (PCC) respectively and other value-added products.

SkyCycle is CarbonFree's second-generation technology that provides a complete carbon capture, utilization and storage "CCUS" solution that eliminates the high cost of transport and storage infrastructure.

¹ Represents emissions from stationary point source emitters ("PSEs").



SkyCycle has an ultra-low penalty technology providing a carbon-neutral impact.

Operating since 2016, SkyMine is one of the world's first and largest industrial-scale carbon mineralization facilities.

U. S. Steel and CarbonFree Sign Definitive Agreement to Capture CO₂ Emissions at One of the Largest North American Integrated Steel Mills

SkyCycle™ will capture and mineralize up to 50,000 metric tons CO₂ per year

Equivalent to emissions produced by nearly 12,000 passenger cars annually*

First commercial-scale carbon capture utilization at a steel plant in North America

Calculated using EPA's GHG Equivalencies Calculator

Carbonfree's carbon mineralization process

SkyMine plant operating since 2016 has demonstrated that it can produce high purity sodium bicarbonate "baking soda" utilizing waste CO₂ from adjacent cement factory.

SkyCycle technology has demonstrated the ability to produce CO₂-neutral high purity calcium carbonate from multiple industrial CO₂ sources to support the **\$40B global addressable market**.

SkyCycle technology is ready for commercialization as an on-site carbon capture and utilization "CCU" and "CCS" solutions, and its modular design makes it applicable anywhere and easy to scale.

SKYCYCLE ADVANCED MINERALIZATION

All-in cost per ton of CO ₂	Low
Carbon penalty	Low
Capex requirement	Low
Emitter candidate sites	Many
Value of CCU end product markets	Large, high value
Available sequestration sites	Abundant



Having the support of Braemar Energy Ventures means that our vision of capturing 10% of the world's industrial CO₂ is significantly closer to reality. I'm thrilled with the progress we've been able to make thanks to their investment; we're preparing our technology for worldwide deployment, which could mean significant advancement in the journey to net-zero for the industrial sector.

MARTIN KEIGHLEY

Chief Executive Officer, CarbonFree



Leading Provider of EV Charging Solutions

ChargePoint is a leading provider of networked charging solutions for electric vehicles (EVs), operating in 16 countries across North America and Europe.

With more than 274,000 active ports under management and thousands of customers (businesses, public agencies, and fleet owners), ChargePoint is the only charging technology company on the market that designs, develops and manufactures hardware and software solutions across every use case.

Leading EV hardware makers and other partners rely on the ChargePoint network to make charging station details available in mobile apps, online and in navigation systems for popular EVs.



Driving the electrification of mobility

ChargePoint is delivering on its mission with:

- Real-time access to environmental impact data provides businesses, fleet managers, multifamily property owners and drivers with actionable information to achieve their sustainability goals
- The first ENERGY STAR® certified EV commercial and residential charging stations on the market
- Expanded access to hundreds of thousands of additional places to charge through roaming agreements and integrations in North America and Europe.

Collective Achievement

7.9B electric miles driven since 2007

206M Charges delivered to date

320M+ gallons of gasoline consumption avoided

Charge Point has avoided greenhouse gas emissions equivalent to:

Planting 27M+ tree seedlings and letting them grow for 10 years

Capturing carbon in 1.9M acres of U.S. forests

Recycling 72M bags of waste

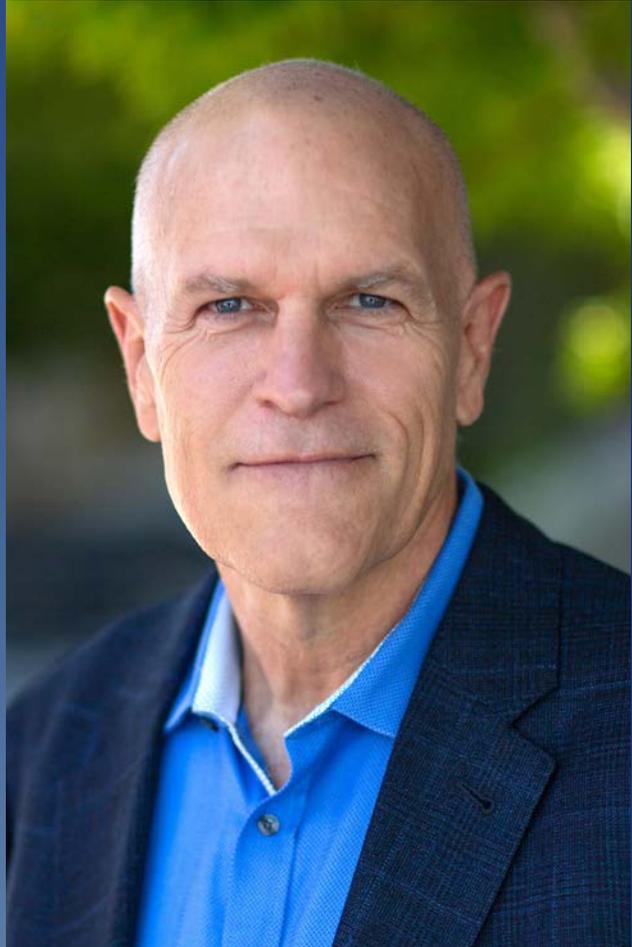
A leader in North America and paving a way in Europe

274,000+ activated ports

22,000+ activated DC ports

567,000+ ports through roaming reach

Calculated using EPA's GHG Equivalencies Calculator



The electrification of transportation continues to play a critical role toward a more sustainable future. At ChargePoint, we are committed to making the transition to electric as simple as possible for all drivers. Our focus remains on ensuring charging is accessible and reliable so that every driver who needs to charge can do so.

RICK WILMER

Chief Executive Officer, ChargePoint



A revolutionary idea to turn trash into green gold

Enerkem is a global technology provider enabling low-carbon fuels and circular chemicals production from waste.

Enerkem's proprietary technology converts non-recyclable waste and biomass into methanol and other widely used chemicals. Headquartered in Montreal (QC), Canada, Enerkem built the first commercial-scale demonstration plant converting waste to biofuels in Alberta. Now, multiple projects in construction or in development across North America and Europe are based on its exclusive technology platform. Key contributor to the energy transition of the hard-to-abate sectors, Enerkem's technology is a prime example of how a true circular economy can be achieved by diversifying the energy mix and by making everyday products greener while offering a smart, sustainable alternative to landfilling and incineration.



Enerkem's *Ecoplanta* will produce 237 kt/y of methanol, and thereby recover 70% of the carbon present in the non-recyclable materials.

Based on the Innovation Fund methodology, the project will achieve 3.4 Mt CO₂eq of greenhouse gas (GHG) emissions reductions over the first ten years of operation.

Methanol produced from *Ecoplanta* will be used as a feedstock to produce renewable chemicals or advanced biofuels, cutting GHG emission by approximately 200,000 tonnes each year and reducing waste that would otherwise end up in landfills.

Greening the Liquefied Petroleum Gas (LPG) sector

In 2023, Enerkem and Dimeta, a joint venture between two of the largest off-grid energy suppliers, announced their collaboration on the development of large-scale projects that will convert waste into renewable and recycled carbon dimethyl ether (DME).

DME is a clean-burning fuel that can support decarbonization of the off-grid energy sector, including heating, cooking, transport and industrial applications. As DME is chemically similar to LPG, it can be blended with it up to 20% and 'dropped-in' to existing LPG supply chains, providing a seamless pathway to reducing emissions from the over 200 million tonnes of LPG used for energy each year globally.

Each project is anticipated to produce approximately 165,000 tonnes of renewable and recycled carbon DME per year from mixed residual waste, therefore, contributing to achieving Dimeta's goal of creating over 300,000 tonnes of sustainable DME production capacity by 2027.

Enerkem is committed to supporting Dimeta in achieving their decarbonization goals. This development is an example of its technological platform's flexibility as a key enabler for hard-to-abate sectors. These joint projects can form the basis for further project developments globally within the off-grid energy market and are an opportunity to expand Enerkem's waste-to-methanol platform.



Enerkem is the first company in the world to produce biofuels and circular chemicals from non-recyclable solid waste at full commercial scale. As the markets for hard-to-abate sectors such as Sustainable Aviation Fuel, marine fuel and circular chemicals are just emerging, Enerkem's technology is ready and strategically positioned to provide solutions to our partners and deploy and secure our projects around the globe.

DOMINIQUE BOIES

Chief Executive Officer, Enerkem

General Fusion is developing Magnetized Target Fusion technology

A fast and practical approach to commercial fusion energy.

The company is on track to deliver zero-carbon energy from fusion to the grid by the early to mid-2030s.



The plasma injector for General Fusion's LM26 machine – a core component – is already operating and exceeding performance targets.

General Fusion announces new fusion machine targeting scientific breakeven equivalent by 2026

In August 2023, General Fusion announced a new Magnetized Target Fusion machine that will fast-track the company's technical progress. Lawson Machine 26 (LM26) is being built at General Fusion's Canadian headquarters and is on track to achieve transformative technical milestones in the next two years:

- Fusion conditions of over 100 million degrees Celsius by 2025; and
- Progressing towards scientific breakeven by 2026.

When these milestones are reached, General Fusion will advance its technology to the commercialization phase. To support the launch of LM26, the company completed the first close of its Series F raise for a combined USD\$25 million of funding.

General Fusion appoints two veteran energy executives to its board of directors

In 2023, General Fusion appointed Norman Harrison, the former CEO of the UK Atomic Energy Authority to its Board of Directors.

Norman is a world-class executive in the energy sector with 40 years of unique experience, including leading the construction and operations of large-scale power plants. In addition, the company appointed Mark Little to its Board. Mark is an esteemed senior executive with over 35 years of experience leading large, complex organizations as they advance multi-billion-dollar energy projects.



Prototype Zero, a critical testbed for General Fusion's LM26 machine, came online shortly after the fusion demonstration was announced in August 2023.



Norman Harrison



Mark Little

General Fusion expands global collaborations to advance Magnetized Target Fusion

General Fusion signed agreements with Kyoto Fusion in Japan, TRIUMF in Canada, and the University of Lisbon in Portugal.

Through the agreements, General Fusion is collaborating with top fusion experts to develop key diagnostics for the company's LM26 machine and advance critical systems for commercialization.



General Fusion’s bold pursuit of fusion commercialization is in full swing. Our ground-breaking Lawson Machine 2026 (LM26) integrates proven components developed and tested over 20 years to fast-track our progress to transformative technical milestones in 2025 and 2026. With LM26, commercial fusion is within reach.

GREG TWINNEY

Chief Executive Officer, General Fusion



Sustainable home improvement projects with a bold vision

Renew Financial is the pioneer and one of the nation's leading residential Property Assessed Clean Energy (R-PACE) financing providers for sustainable home improvement projects. The Company has a bold vision to create equitable financial access to a safe, healthy, and sustainable world.

The R-PACE financing model was designed by Renew Financial to enable homeowners to access low-cost, upfront financing for energy efficiency, renewable energy, water conservation, and safety improvements. R-PACE is also a powerful resource that enables state and local governments to meet important sustainability goals due to the program's ability to help local governments advance key policy priorities, such as natural disaster preparation, reduced carbon emissions, higher energy savings, and water conservation.



Renew Financial administers the R-PACE program in California and Florida and has funded to date more than \$1.7 billion in R-PACE projects that have led to greenhouse gas reductions (GHGs) of nearly 1.9 million metric tons, equivalent to removing over 403,128 cars from the road, and savings of over 2.5 billion gallons of water.

Renew Financial's total GHG reductions for year 2023:

6,561 tonnes CO₂e/year for 7,700 projects

R-PACE has a positive impact on the resiliency of local communities, the environment and the economy.*

344,237+ home improvement projects completed

\$17.5 billion in economic impact (gross economic output)

\$7.4 billion in utility savings

27 billion kWh-e in energy saved

* PACENation Market Data for R-PACE as of September 30, 2023



The movement toward energy-efficient homes is not slowing down. Each day, more and more American homeowners are becoming more intent on conservation and avoiding high energy bills, therefore, they are investing in upgrades geared to reduce their energy consumption or energy loss in their homes. Renew Financial is more committed than ever before to its mission of helping homeowners from all walks of life access affordable home improvement financing through the R-PACE program to meet their home energy efficiency goals, ultimately creating energy-efficient communities.

MARK FLOYD

Chief Executive Officer, Renew Financial



Capturing a generational opportunity at the grid edge

Utilidata is an AI-powered technology company that provides utilities with robust, real-time insights to operate a connected grid and better serve their customers.

The company's patented optimization technology enables real-time insights and interventions on the electric grid to increase grid efficiency and better detect grid anomalies. The company's distributed AI platform, Karman, is designed to anticipate and solve real-time challenges at the edge of the electric grid. Built on a customized processor developed through the company's partnership with NVIDIA, Karman uses powerful computation to capture robust, high-quality data at the meter to help utilities make smarter real-time decisions - improving reliability, increasing grid capacity, and more seamlessly integrating clean energy and electric vehicles.



Climate Impact

Today, Utilidata's grid optimization software delivers 3-5% energy savings across all electric distribution grid circuits that it operates, which results in substantial GHG emissions reductions. Our distributed AI platform will increase the amount of distributed clean energy that can be connected to the distribution grid. The technology is accelerating decarbonization and electrification, which will ultimately have a

tremendous climate impact. The company's software solutions will streamline the ways in which EVs interact with the grid, further advancing the transition to electrified transportation, and will enable communities to become far more resilient in the face of climate disasters. Utilidata will enable utilities to take a much more precise approach to forced outages, mitigating severe blackouts that have impacted communities.

Utilidata's total GHG reduction for year 2023:

320,574 tonnes CO₂e/year

These reductions in tonnes CO₂e/year are equivalent to:*

76,297 gasoline-powered passenger vehicles driven for one year

63,267 homes' electricity use for one year

111,310 tons of waste recycled instead of landfilled

84.4 wind turbines running for a year

* EPA Greenhouse Gas Equivalencies Calculator



The new energy economy needs to be fair and accessible, and technology has a meaningful role to play. Through our software platform deployed on the grid, we are creating significant energy savings and enabling the cost-effective adoption of distributed energy resources – like solar and electric vehicles – to increase access to all. Integrating new technologies can enable the grid to become more efficient, reliable, and equitable.

JOSH BRUMBERGER

Chief Executive Officer, Utilidata



BRAEMAR
ENERGY VENTURES

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