



# **2022 SUSTAINABILITY REPORT**



# ABOUT THIS REPORT

Our sustainability report highlights the actions taken by Hedgehog Technologies to promote sustainability for our stakeholders including clients, team members, the community, and beyond. The information presented in this report is based on internal and external discussions with Hedgehog stakeholders, and focuses on four main areas: Environmental, Indigenous Prosperity, People, and Governance.

Our objectives align with the 2030 Agenda for Sustainable Development set forth by the UN General Assembly, and we are committed to meeting and exceeding the targets outlined in the Sustainable Development Goals (SDGs).

The reporting period for this report is January 1st to December 31st and serves as a benchmark for future accountability in meeting our objectives. The report will be published annually with oversight from the Leadership team and our stakeholders.

For more information about the UN's SDGs, please visit <https://sdgs.un.org/goals>



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# Message from our President

Dear Stakeholders,

At Hedgehog Tech, we believe in the importance of sustainability and the role it plays in our business operations and in the communities we serve. That is why I am pleased to present our latest sustainability report.

This report highlights our efforts to address the United Nations' Sustainable Development Goals (SDGs) and demonstrates our commitment to sustainability as a core value of our organization. We understand the importance of these goals and the impact they can have on our stakeholders - including clients, the community, and our team.

As a company, we are committing to a five-year plan to improve our performance in areas related to the SDGs. This includes reducing our carbon footprint, increasing our use of renewable energy, innovating, and implementing sustainable practices in our supply chain. We will also strive to make a positive impact in the communities where we operate through initiatives that promote economic, social and environmental development.



Our goal is to become a leader in sustainable business practices and to inspire others to do the same. We believe that by working together and committing to the SDGs, we can create a more sustainable future for all.

Thank you for your ongoing support. We look forward to continuing to work towards a more sustainable future for our company and for the world.

A stylized, handwritten signature in blue ink, appearing to read 'Michael Wrinch'.

**DR. MICHAEL WRINCH**  
PRESIDENT, HEDGEHOG TECHNOLOGIES



# EXECUTIVE SUMMARY

## Overview

Hedgehog Technologies has taken a proactive approach to embracing the United Nations' Sustainable Development Goals (SDGs) and has identified key areas of focus for their contributions. We are committed to creating a sustainable future and we have chosen to align our efforts with SDGs related to Governance, Sustainability, Indigenous Prosperity, and People.

Hedgehog promotes ethical business practices and transparency, supports initiatives that promote accountable and inclusive institutions, and actively supports efforts towards clean energy and sustainable resource management.

# COMPANY OVERVIEW



## We make complex visions a practical reality.

Hedgehog Technologies is more than just an award-winning consulting engineering firm, we're a company that makes a positive impact on society. Our focus on infrastructure, safety, and innovation helps modernize communities and protect the people who depend on these projects.

From designing innovative attractions that balance fun and safety, enforcing cybersecurity in the industrial sector, to connecting remote communities with renewable energy, we're dedicated to achieving outcomes that change the world.

Our team of engineers come from all walks of life and collaborate to realize our clients' vision with sustainability at the forefront. We're leading the way in complex engineering to make anything possible.

## Our AC/DC Values:

- Accountable
- Collaborative
- Diverse
- Community Builders





# GLOBAL MAP OF OPERATIONS



## A CONDUIT OF INNOVATION

Hedgehog Technologies is a globally recognized engineering firm with a diverse portfolio of projects spanning the globe, providing sustainable solutions to clients in industries.



## GLOBAL OFFICES

Hedgehog Technologies has global reach with offices located in Burnaby, BC, Calgary, Alberta, and London, England.



# Priority SDGs

There are 17 SDGs and 169 targets in total.

Hedgehog Technologies is a firm committed to creating positive change and contributing to a sustainable future. As part of this commitment, the company has chosen to align its efforts with the UN Sustainable Development Goals (SDGs).



## CLIMATE CHANGE

We believe that it is our responsibility to reduce our carbon footprint and promote sustainable practices in all aspects of our business. From our sustainable projects, innovations, and internal climate action targets, we're committed to leading the way against climate change.

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## INDUSTRY, INNOVATION, AND INFRASTRUCTURE

We strive to drive sustainable economic growth by leveraging innovative technologies and modernizing infrastructure. From developing smart cities to implementing cutting-edge renewable energy systems, we are dedicated to building a more sustainable and resilient future for all.

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## AFFORDABLE AND CLEAN ENERGY

Providing innovative and sustainable energy solutions through the development of renewable energy and energy-efficient technologies. We are committed to improving access to clean energy and mitigating the negative impacts of energy production on the environment.

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## GENDER EQUALITY

We prioritize gender equality through policies for equal opportunities in hiring, promotion and compensation, as well as empowering women in STEM and supporting gender equality organizations.

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# Thought Leadership

Shaping the direction of the industry by influencing the development of new technologies, processes, and methodologies. Thought leadership provides an understanding of the current state of the industry and the challenges that need to be addressed.



## The Opportunities and Drawbacks of Demand Management Using Battery-solar Solutions

Published on Plant Engineering | Michael Wrinch

- [Read it here.](#)



## Factory Acceptance Testing Best Practices

Published on Control Engineering | Michael Wrinch

- [Read it here.](#)



## Manufacturing Happy Hour Podcast

Published on Manufacturing Happy Hour | Michael Wrinch

- [Listen to it here.](#)



# SUSTAINABILITY

## Our Approach

Hedgehog Technologies is committed to sustainable practices that prioritize environmental responsibility. We have implemented various actions to reduce our carbon footprint and promote sustainability, such as investing in renewable energy technologies, reducing energy consumption, and building sustainable infrastructure for both remote communities and our cities.

Additionally, we encourage our employees and stakeholders to engage in environmentally responsible practices. Our sustainable actions demonstrate our dedication to creating a more sustainable future for their customers, employees, and the environment.



# FEATURE: NIMBA MICROGRID CONTROLLER INNOVATION

Hedgehog Technologies designed and managed the implementation of a unique, first-of-its-kind solar microgrid project for Harrison Hot Springs Elementary within School District 78 (SD-78) located in Hope, BC.

The school experienced blackouts as a result of prevailing winds from the mountains. Without access to backup generation, children were sent home from school, and students had trouble being picked up by their caregivers leaving some stranded. The project included a PV solar, battery, and innovative microgrid controller solution which dispatched a battery system during a blackout.

The system allowed the elementary school to maintain power during outages and provided the opportunity for BC Hydro to access stored energy through demand response events and increase efficiency by demand shaving during daily operations. This solution ensured that students could remain in school in the event of blackouts and prevented future students from becoming stranded.



*Battery storage system.*



*Solar installation in Hope, British Columbia*

# SUSTAINABILITY OVERVIEW

Creating sustainable and energy resilient communities using the latest technologies.



We believe in harnessing the power of solar energy to provide clean and reliable electricity to communities that face geographical isolation."

- Charles Lewthwaite, Electrical Engineer



we take pride in our commitment to sustainable development and our dedication to bringing solar power to remote communities, including Fort Severn. We believe in harnessing the power of solar energy to provide clean and reliable electricity to communities that face geographical isolation or limited access to traditional energy sources.

Furthermore, our development of the Nimba microgrid controller enables us to efficiently manage and optimize energy distribution in microgrid systems. By integrating the Nimba microgrid controller into our solar installations, we enhance their performance, reliability, and overall energy efficiency, resulting in cost savings and a more sustainable energy solution.



# MEASURING SUCCESS

Hedgehog targets SDG goals which are reflected through our culture, the industry, and our communities.



## Sustainable Metrics:

- 17% of revenue tied to sustainable projects.
- 100% of staff working from home or hybrid.
- 12% of staff commuting EV, hybrid, or public transit.



## Microgrid Controller Innovation

Development of Nimba Microgrid Controller that is implemented in Fort Severn and School District 78. The technology is currently under further development.



## Forwarding EV Adoption

- Development of electric vehicle online readiness tool to streamline EV charger installs in MURBs.
- Completion of MURB installations for electric vehicle charging stations.

# INDIGENOUS PROSPERITY

## Overview

Diesel-based generators are a common method of powering remote Indigenous communities which results in higher fuel costs along with health and environmental hazards. Hedgehog recognizes the inherent cultural, economical, and technological advantages from the introduction of renewable energy and demand-side management (DSM) projects.

These projects provide Indigenous economic development and opportunity through training, community engagements, and the creation new job opportunities.



# INDIGENOUS PROSPERITY

Reducing the carbon-footprint of remote First Nations communities with innovative clean energy solutions.



"Hedgehog Technologies is fully committed to advancing Indigenous prosperity through our sustainable development practices."

- Dr. Michael Wrinch, Founder



In the Fort Severn community, we have been working to improve access to renewable energy sources and reduce reliance on diesel fuel. We have mentored a Fort Severn community energy champion and electrical apprentice, assisted with the development of a community energy plan, and supported the operations and maintenance of a local solar farm. We have also organized speaking engagements and supported community members to participate in awards ceremonies.

In the Haida Nation, we are training and supporting the construction of a Haida-made solar farm and participating in energy meetings and conferences to promote renewable energy development.

# FEATURE: FORT SEVERN FIRST NATION SOLAR ARRAY

The Fort Severn First Nation (FSFN), who are dedicated to preserving the diminishing polar bear population in Northern Ontario, have a vision for a sustainable future. To fulfill this vision, they brought in Hedgehog Technologies to build a 300-kW solar array to meet the energy needs of their remote community.

Hedgehog was responsible for overseeing the project management, engineering, and logistics coordination. In partnership with Chief Paul Burke, the FSFN also established community training programs to equip the residents of Fort Severn with the skills necessary to maintain the solar array after its completion.



*Charles Lewthwaite (Electrical Engineer)*

This initiative not only supports the community's energy needs and opens the door to new jobs, but also empowers them to take an active role in preserving the environment for future generations. The project was recognized with two Canadian Consulting Engineering awards in 2022.



*Fort Severn Solar Array in Northern Ontario.*



# MEASURING SUCCESS

Hedgehog targets SDG goals which are reflected through our culture, the industry, and our communities.



## First Nations Community Development

- Donation to Haida Skidegate Days and Energy Kit for 2022
- Presentation at First Nations Energy Summit
- Community training programs for Fort Severn to manage their energy independently.



## Fort Severn First Nation Solar Array

Completion of 300-kW solar array for Fort Severn. The solar project is expected to displace about 130,000 litres of diesel fuel on an annual basis. The annual savings are being reinvested into the development of new homes.



## Cultural Sensitivity Training

Employees completed cultural sensitivity training called “4 Seasons of Reconciliation” that promotes a renewed relationship between Indigenous Peoples and Canadians through learning about truth and reconciliation.

# PEOPLE

## Overview

Diversity is a crucial component for our success as they bring unique skills, expertise, and perspectives that enable us to innovate, grow, and give back. The impact of our people-focus can be seen in many areas, including the quality of work produced, the level of customer satisfaction achieved, the ability to innovate new technologies, and the overall culture and values of Hedgehog technologies.

By hiring and retaining the right people, we build a strong and talented team that is capable of solving complex problems.



# PEOPLE

Corporate social responsibility means investing in our people and communities for a brighter future.



"We recognize the essential role played by our employees, clients and partners and remain committed to promoting their prosperity."

- Janesa Charles, Corporate Controller



We value the significant contributions made by our employees, clients, and partners, and are dedicated to promoting their overall wellbeing through a range of programs and support initiatives. As part of this commitment, we regularly review our company policies and practices to ensure they are aligned with the needs of our workforce, and that we celebrate the diversity of the people we serve. One of the ways we achieve this is by conducting an annual assessment of our extended health benefits to identify areas for improvement and customize them to meet the specific needs of our employees.

Our latest initiative involves implementing a no-questions-asked sick day policy, which permits employees to take time off for mental health resets and personal privacy needs. Moreover, we remain committed to funding training and educational seminars that enable us to provide exceptional support to our clients, that goes beyond the end of our projects.

# FEATURE: JOB SHADOWING DAYS FOR ASPIRING ENGINEERS

In 2022, we hosted a series of job shadowing days for students looking to pursue a career in engineering. Our first mentee, an aspiring aerospace engineer named Colin, gained hands-on experience with Mechanical Engineer Faheem Saeed, learning about product design, analysis tools, and material calculations.

Another day, we hosted Abigail, a mentee who arrived in the morning and met with Erin Martin-Serrano, our director of business development. The day started with some introductions to the team followed by an overview of Hedgehog Tech services.

The day started with some introductions to the team followed by lessons on drafting proposals, industrial design, and subsea design. These job shadowing days helped our mentees gain a better understanding of what it takes to become an engineer and develop skills for a future career.



*Colin (Mentee), Faheem (Mechanical Engineer)*



*Aileen (Electrical Engineer), Abigail (Mentee), Erin (Director of Business Development)*

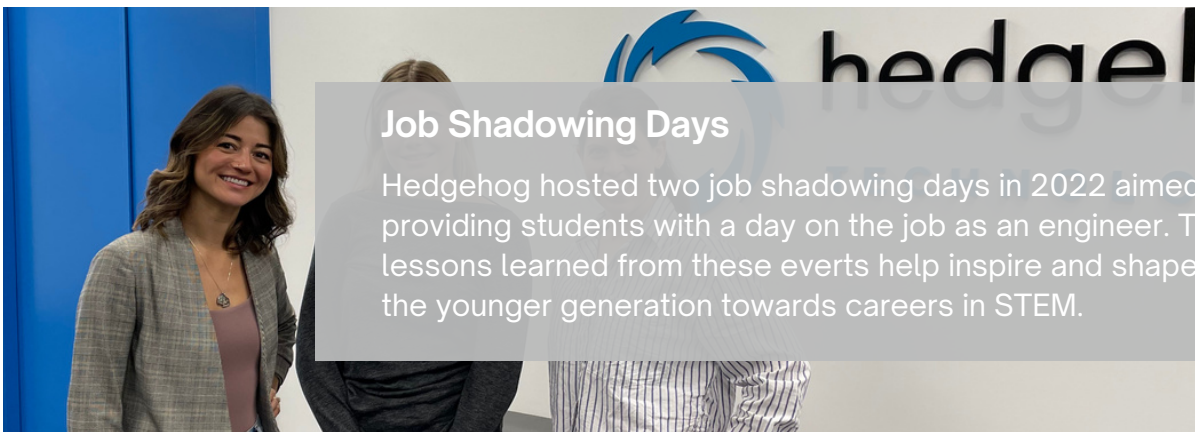


# MEASURING SUCCESS

Hedgehog targets SDG goals which are reflected through our culture, the industry, and our communities.

## Our EDI breakdown:

- 50% male and female holding executive positions.
- 33% of employees identifying as a visible minority.
- 29% of females represent the total team.



## Job Shadowing Days

Hedgehog hosted two job shadowing days in 2022 aimed at providing students with a day on the job as an engineer. The lessons learned from these events help inspire and shape the younger generation towards careers in STEM.



## Monthly Cultural Team Lunch-ins

At Hedgehog, we embrace diversity by exploring cultural cuisines. Each month, a team member shares their culture through a food order and provides an enlightening overview. It's our way of celebrating our unique backgrounds.

# FEATURE: AIMS SAFECONNECT PRESENTATION & SPONSORSHIP

Hedgehog Technologies was proud to be a gold-level sponsor of the AIMS SafeConnect 2022 event at the Pacific National Exhibition (PNE). The event provided a platform for industry leaders and professionals to discuss safety initiatives in the attractions industry. Hedgehog Founder Michael Wrinch and Director of Business Development Erin Martin-Serrano presented on safety risk assessments, major modification of rides, and deviating from standard practice.

The event was a success, with attendees from across Canada coming together to enhance safety within amusement parks.

As a company committed to safety and sustainability, Hedgehog looks forward to supporting AIMS SafeConnect next year and encourages others to attend or share their insights to protect people and create safer amusement parks.



*Platinum Sponsor Recognition*



*Michael Wrinch (Founder & CEO) presenting at AIMS SafeConnect 2022*



# GOVERNANCE

## Overview

Hedgehog Technologies is a company dedicated to promoting governance for the Sustainable Development Goals (SDGs). We strive towards solutions to help organizations align their business practices with the SDGs, enabling them to contribute to a more sustainable and equitable world.

Hedgehog Technologies offers a range of services, including strategic planning, risk management, and stakeholder engagement, to help the industry identify areas for improvement. Through our comprehensive approach to governance, we empower organizations to create positive social and environmental outcomes, while also driving business growth and competitiveness.

# GOVERNANCE

Good governance helps to foster an environment of transparency, accountability, and collaboration, which is critical for achieving the SDGs.



"Through our participation in these initiatives, we have helped to promote best practices in engineering and consulting, and fostered an environment of collaboration."

- Erin Martin-Serrano



As a member of the Board of Directors of the Association of Consulting Engineering Companies British Columbia (ACEC-BC), we have aligned ourselves with ACEC-BC's values of excellence, integrity, and professionalism. Our membership has enabled us to uphold these values, which align with the principles of SDG 16.

In addition to our involvement with ACEC-BC, our Founder Michael Wrinch serves on the Engineer's Canada board, which helps to develop and promote engineering excellence in Canada. Furthermore, Hedgehog's involvement in the ASTM F24 Major Modifications Task Group has contributed to the development of standards that promote ethical behavior and good governance practices in the amusement ride industry.

Through our participation in these initiatives, we have helped to promote best practices in engineering and consulting, and fostered an environment of collaboration and cooperation among stakeholders.



# FEATURE: ACQUISITION OF IGLOO INNOVATIONS INC.

Our recent acquisition of Igloo Innovations expands our services to include mechanical engineering, allowing us to better serve clients in industries such as marine, industrial automation, and amusement rides. Both Hedgehog and Igloo share a commitment to innovation and developing proprietary technologies.

The acquisition brings together two firms that have joined together on numerous projects in the past, leading to a higher degree of collaboration for the industry. The expansion will allow Hedgehog Technologies to provide unique and leading-edge services to its clients with a shared passion for innovation.

This supports SDG 9: Industry, Innovation, and Infrastructure for promoting inclusive and sustainable industrialization, fostering innovation, and upgrading infrastructure.



Hedgehog Tech and Igloo Innovations



Younes Rashidi, Michael Wrinch, Jason Clarke, Derek Puzzuoli

# MEASURING SUCCESS

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## Supporting Through Community Initiatives

- BCIT Student Presentation
- AIMS SafeConnect 2022
- ElleHacks All-Female Hackathon



## Securing Partnerships

In 2022, Hedgehog Tech acquired Igloo Innovations and entered a partnership with Power Pros. These partnerships help reinforce our commitment to the SDG's through innovation and collaboration to achieve our targets.



## Industry Leadership and Participation

- Association of Consulting Engineers of BC, Small Firms Council
- Engineer's Canada Board
- ASTM Major Modifications Task Group



# OPERATIONAL TECHNOLOGY CYBERSECURITY

Safeguarding critical infrastructure from cyber attacks is essential for a safer and more secure world.



"Secure and resilient operational technology systems will play a crucial role in driving progress towards the Sustainable Development Goals."

- Younes Rashidi, Vice President of Engineering Operations



At Hedgehog, we pride ourselves on being experts in designing and implementing Operational Technology (OT) systems for our clients. We understand the importance of safety and security in these systems, which is why we have made it our top priority to implement robust OT cybersecurity measures. To achieve this, we have partnered with some of the top industry experts and invested heavily in training our team in OT cybersecurity technologies and solutions.

By providing our clients with reliable and secure OT systems, we aim to contribute to a more sustainable future by enabling them to operate efficiently, safely, and in compliance with regulations. With our team's expertise and dedication, we are confident in our ability to continue delivering exceptional OT solutions to our clients while contributing to a better world.



We thank you for your  
continued support in our  
efforts to contribute to  
the SDGs.

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