# UN Global Compact Communication on Progress FY21 Report

December 2021

HATCH

# Statement of support from our CEO

On behalf of all of us at Hatch, I am pleased to confirm our support of the Ten Principles of the United Nations Global Compact (UNGC) in the pillars of Human Rights, Labor, Environment, and Anti-Corruption. I am also delighted to present our inaugural UN Global Compact Communication on Progress (CoP) Report, which provides a baseline of Hatch's current status within these pillars and examples of how our work is helping action those Sustainable Development Goals (SDGs) that are most influenced by Hatch's business. Also described is a summary of our planned actions for FY22 to help accelerate positive change.

The scale of challenge in achieving the UN Agenda 2030 is one that no organization can take on alone. It is for this reason that we decided to start this new decade by joining the UN Global Compact as an active participant in supporting the advancement of the UN SDGs in partnership with our clients and other stakeholders.

Hatch is guided by the principles described in our Manifesto, which aligns with the Ten Principles of the UNGC. We seek to incorporate these Principles into all our activities, whether related to the management of our business or the projects and engagements we undertake for our clients in the metals, energy, and infrastructure sectors.

We welcome your feedback and look forward to providing an update in 2022.

Sincerely,

**John Bianchini**
**Chief Executive Officer**

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# About Hatch

# Who we are

Hatch provides professional engineering, technology, and consulting services to the metals, energy, and infrastructure market sectors. Founded sixty-five years ago, we have a global network of operations that includes over 9,000 professionals, experience that spans over 150 countries, and approximately US$50 billion of capital projects under management at any given time.

Hatch is employee-owned and independent, which enables us to approach our business and client relationships with a long-term view. We are committed to their lasting success, and that of the communities in which we work. Our global communities benefit from the integration of this long-term view into our strategy, staff development, and investment decision-making. Our exceptional, diverse teams combine engineering and business knowledge, working in partnership with our clients to design and deliver complex capital projects, optimize operations, develop and implement new technologies, and develop successful business strategies. At Hatch, we ensure that technical solutions to our clients' challenges optimize environmental protection, economic prosperity, social justice, and cultural vibrancy. We want businesses, ecosystems, and communities to thrive both now and into the future.

## Current projects

Voisey's Bay
Nickel Mine Expansion
(Photo courtesy of Vale.)

Lithium America Corp/Ganfeng
JV (Minera Exar), Argentina

Denver Regional
Transportation District's
FasTracks Program

PGP PEP Glencore

Keeyask
Hydroelectric Generation
Project

uMshwathi Regional
Bulk Water Supply Scheme
Phase 2

Calgary
Green Line LRT

Oxec II Hydroelectric
Project

# Our Manifesto

## OUR VISION

We are **passionately** committed to the pursuit of a ***better world*** through **POSITIVE CHANGE**.

## OUR MISSION

**TOGETHER** we create **unprecedented** outcomes for our clients by **partnering with them** to develop **better ideas.**

Our ***exceptional, diverse teams*** combine vast engineering and business knowledge, applying them to the **world's toughest challenges.**

We build practical **SOLUTIONS** that are **SAFE**, **INNOVATIVE**, & **sustainable.**

## OUR VALUES

DOING OUR **homework**

**INNOVATING** all that we do

Acting *like* **OWNERS**

Achieving **NO** harm

Encouraging a **flat, connected organization**

*Engaging great people* who make a **difference**

**nurturing** long-term relationships

Thinking **globally**; acting **locally**

ENSURING **cost** effective, efficient **delivery**

Living our **commitments** with *integrity*

Being unconditionally **HONEST**

*"We believe in exceptional ideas delivered with exceptional service."*

Hatch's Manifesto summarizes our vision and the guiding principles that direct our activity. Based on our founders' early principles, Hatch has built an unwavering and strong reputation for conducting business with integrity, earning the respect and trust of our clients, employees, and communities in which we work. We are guided by our corporate polices and commitments, which can be found online at hatch.com/About-Us and are attached in the Appendix z of this report.

**Sustainability Policy**

Sustainability requires the optimization of environmental, social, and economic outcomes. This ensures ecosystems are maintained, communities thrive, and society prospers, now and in the future. Sustainability is at the core of how we deliver value to our clients as a socially responsible company.

**Health and Safety Policy**

The safety of our employees, visitors, and contractors is always top of mind. We work with our clients and partners, using structured systems and processes to prioritize safety, always.

**Quality Policy**

At Hatch, we are committed to meeting and exceeding our clients' expectations in all that we do. This commitment is enabled and supported by practices and processes embedded in all Hatch projects, which deliver quantifiable value to our clients.

**Diversity & Inclusion**

We are committed to diversity and inclusion (D&I) because a diverse and a fully inclusive work environment fosters a plurality of thought and perspectives that solve challenging problems and creates value for our clients, for our communities, and for the world at large.

**Indigenous Peoples Policy**

Our relationships with First Nations, Métis, Inuit, Native Americans, and Aboriginal peoples in our communities around the world are based on the values of honesty, respect, and transparency. We understand that our ability to deliver successful projects on behalf of our clients is enhanced by our knowledge and understanding of these peoples and their histories, cultures, protocols, values, aspirations, and governments.

**Hatch Climate Change Statement**

We apply a disciplined approach to the climate change challenges our clients face by integrating scientific-technical evaluation and socio-economic analysis into our projects from conceptual development, through design and construction, to commissioning and operations.

# Organization of report

As a professional services provider, Hatch's actions in support of the UN Global Compact occur through both the management of our own operations and the assignments undertaken on behalf of our clients. While there is overlap, we support the Ten Principles primarily through our operations, and the advancement of the SDGs primarily through the work we carry out with our clients. This report has been organized accordingly.

**The Ten Principles of the UN Global Compact**

Corporate sustainability is found at the core of a company's value system in how it conducts business. This must incorporate the fundamental responsibilities in the areas of Human Rights, Labor, Environment, and Anti-Corruption. The Ten Principles are:

## Human Rights

**Principle 1:** Businesses should support and respect the protection of internationally proclaimed human rights; and

**Principle 2:** make sure that they are not complicit in human rights abuses.

## Labor

**Principle 3:** Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

**Principle 4:** the elimination of all forms of forced and compulsory labor;

**Principle 5:** the effective abolition of child labor; and

**Principle 6:** the elimination of discrimination in respect of employment and occupation.

## Environment

**Principle 7:** Businesses should support a precautionary approach to environmental challenges;

**Principle 8:** undertake initiatives to promote greater environmental responsibility; and

**Principle 9:** encourage the development and diffusion of environmentally friendly technologies.

## Anti-Corruption

**Principle 10:** Businesses should work against corruption in all its forms, including extortion and bribery.

# Our commitment to the Ten Principles of the UN Global Compact

# Pillar 1: Human Rights

### *Assessment, policy, and goals*

Our human rights policies focus on the well-being of our employees, clients, suppliers, and the communities in which we operate and do business. We are governed at the global level by our Code of Conduct and all of our employees abide by it, creating a culture that fosters transparency as it empowers our people with the correct tools to avoid, identify, and respond to ethics-related issues. Our Code of Conduct applies to all persons working for us or on our behalf in any capacity.

### *Implementation*

During the past year we analyzed our exposure to human rights risks in our operating regions, including the risk of our exposure to modern slavery. Although we operate in some jurisdictions with higher human rights risks, these risks are mitigated by the fact that the majority of our workforce are permanent employees or employed on contracts that pay at or above the relevant minimum wage in each jurisdiction. We manage our workforce in accordance with all applicable local laws and in keeping with international best practice.

Our standard terms allow all employees and those on contract to terminate their employment on notice. An unbiased workplace grievance resolution procedure is also available to all employees, contractors/subcontractors, work experience students, volunteers, and those who conduct work with and on behalf of Hatch. This procedure documents the steps to be taken to address grievances, founded on the principles of timeliness, natural justice (fair treatment for all parties and no pre-judgement), and sensitivity. Employees are entitled to an independent investigator and support person. We provide a confidential mechanism for any employee or stakeholder to voice a concern. The global director of HR monitors Hatch's confidential hotline and manages each situation to satisfactory conclusion.

***Principle 1:***

Businesses should support and respect the protection of internationally proclaimed human rights.

***Principle 2:***

Businesses should make sure that they are not complicit in human rights abuses.

Proactive actions undertaken related to human rights address:

- creating a healthy and safe workplace
- ensuring the well-being of our people, those we manage, and the communities in which we operate
- managing human rights risks in our supply chain
- empowering our communities

### *Creating a healthy and safe workplace*

Health and safety (H&S) is a core principle of our Manifesto and the priority in everything we do. We consider no harm to be a basic human right, and are governed in our work by our Health and Safety Policy. Global safety statistics are gathered and reported on a monthly basis, and all safety incidents are reported to Hatch management immediately. Results are presented in our global H&S performance summary for the last twelve months, provided below.

It is our policy to walk away (and we have done so) from projects where working or living conditions are unsafe or otherwise unacceptable for our people and our clients' people. Prior to the commencement of projects in new settings, a reconnaissance team is deployed to assess H&S risks to people and the surrounding communities, including potential risks to mental health. In collaboration with local representatives, this team develops proactive strategies to mitigate these risks as a condition of doing business.

We continuously monitor our H&S progress and improve our programs. Last year Hatch created a new chief medical officer (CMO) position, as well as occupational health nurse positions to assist in continually improving our programs to support physical and mental health, and overall wellness, for our employees. We have also partnered with health specialists from the Cleveland Clinic to advise and provide guidance on developing health and well-being concerns that could impact our staff. Our H&S training programs are comprehensive and continually updated to incorporate new, technically relevant information and guidance to all our people.

Keeping our employees and communities safe during the COVID-19 pandemic, while continuing to fulfill our client engagements, has been a focus over the last year and half. Our response was guided by our CMO and comprised both mitigation (e.g., monitoring symptoms in all offices, restricting travel, ensuring physical distancing in offices, and implementing non-contact rules) and segregation (e.g., self-isolation of symptomatic individuals and recent travelers, rotation of project teams) to keep employees safe and productive. As we moved to a remote workforce to protect our employees and their families, we continued to prioritize health and well-being.

During global lockdown orders, we hosted monthly "Ask the Board" sessions virtually for employees to address their key concerns with senior management. These sessions resulted in candid conversations on difficult topics, such as Hatch's employee retention plans during this time of economic uncertainty, salary raises, and plans for the eventual return to offices. The answers were not always easy, but we strove for open communication in this challenging time. In this past year, we prioritized mental health awareness and improvement initiatives, including expanding coverage for mental health practitioners in our benefits plans.

In support of our communities around the world, Hatch prioritized the COVID-19 vaccine rollout for the millions of people without ready access. We partnered with the COVAX Facility and UNICEF to participate in their challenge of procuring and delivering 2 billion doses of COVID-19 vaccines globally. We are delighted to report that Hatch employees raised C$500,000, which Hatch matched for a total donation of C$1,000,000. We also joined the #ThisIsOurShot campaign, a grassroots effort to rally together for a final push to minimize a potential fourth wave and further lockdowns.

### *Managing human rights risks in our supply chain*

Hatch's supply chain includes:

- subconsultants to support the professional services we provide
- goods and services that support our operations such as office leases, utilities, IT hardware and software, office equipment, marketing material, stationary supplies, catering and cleaning services, and PPE
- procurement that we perform as agents on behalf of our clients
- procurement for Hatch-supplied technologies

As there is the potential for human rights risks in Hatch's supply chain, we have produced an internal process guide with respect to worker welfare (the Worker Welfare Guide) to help manage these risks, and ensure we are not inadvertently complicit in human rights abuses. This guide is based on the *UN Universal Declaration of Human Rights* and the International Labour Organization, and addresses many of the key issues within the UK and Australian Modern Slavery Acts. The Worker Welfare Guide provides the information contractors in our supply chain need to hold an equal regard for health, safety, and human welfare. Hatch is currently in the process of implementing the Worker Welfare Guide across all our client engagements, with a particular focus on our large projects in high-risk jurisdictions.

Hatch has had no incidents of human rights abuses alleged or brought to our attention.

### *Empowering our communities*

Successful projects need to be developed in collaboration with local communities, creating real benefits, particularly for the most vulnerable members of society. We strive to leave the communities in which we work better than we found them, creating a brighter future for all. This ambition is implemented through four principles:

- engage early, openly, and honestly in a sustained manner with local communities
- build long-term and mutually beneficial relationships with local communities and businesses
- promote opportunities within our organization and with our clients to foster engagement and participation with local communities
- respect the rights of Indigenous Peoples to maintain and strengthen their own institutions, cultures, and traditions, and to pursue economic development in keeping with their needs and aspirations

In South Africa, we remain steadfast in our commitment to face South Africa's challenges and make a real difference. In this regard, we have made many inroads across aspects such as greater D&I, community upliftment, and defeating poverty. Additional information on our internal programs with our people is provided in the "Labor" section of this report. We focus on increasing access to education with an emphasis on science, technology, engineering, arts, and math (STEAM) through our involvement in school development programs. During the past year, we have provided support through bursaries and study aids, grade 12 assistance programs, support of university chairs, and the Minerals Education Trust Fund. We also actively support the very successful African Academy, the Olico Computer Training School, and Maths Lab.

In Australia, we formed the AUA Indigenous Working Group to develop an internal Indigenous engagement vision and strategy and to drive initiatives to implement them. The working group has been focusing on improving cultural awareness within the organization, along with the identification of opportunities for scholarships and sponsorships that support our Indigenous engagement vision. We have partnered with CareerTrackers, an Aboriginal and Torres Strait Islander internship program, with the aim of converting students from intern into full-time employee upon completion of their university degree.

For more information on our community involvement, including our philanthropic initiatives, please visit Community Involvement.

## Path forward

The main activities planned for the next twelve months under this pillar are to:

- review the alignment of our policies to the UNGC Principles and refine as required
- conduct a human rights assessment for all our operating regions to identify key issues of concern
- roll out our Worker Welfare Guide to all operating regions, accompanied by mandatory training
- refine our monitoring and reporting mechanism to track results of job creation initiatives for local communities

# Pillar 2: Labor

### *Assessment, policy, and goals*

Hatch fully supports the four principles that comprise the Labor Pillar of the UN Global Compact. Our goal is to be the employer of choice in all of our operating regions where we comply with or exceed labor standards. Our staff is primarily comprised of highly educated and skilled engineers, technologists, scientists, and management consultants, which requires working conditions and employment benefits at or near the top of the marketplace.

All employees negotiate their terms of employment and are free to leave at any time; we do not force labor and do not use child labor. Hatch is committed to the elimination of discrimination and believes that a diverse and fully inclusive work environment fosters a plurality of thought and perspectives that solve challenging problems and create value.

***Principle 3:***
Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.

***Principle 4:***
Businesses should ensure the elimination of all forms of forced and compulsory labor.

***Principle 5:***
Businesses should uphold the effective abolition of child labor.

***Principle 6:***
Businesses should ensure the elimination of discrimination in respect of employment and occupation.

### *Implementation*

We monitor and adjust employment conditions through a globally distributed HR team of 140 professionals, in partnership with our legal team, which ensures compliance with the Labor principle. Supply chain management and the health and safety of our staff are discussed under the “Human Rights” section of this report.

As an outcome, Hatch’s annualized voluntary attrition rate for the reporting year was 7%, compared to typical industry rates of 15%-20%. The quality of our workplace and employment practices is demonstrated with the following examples of Hatch employment and workplace awards:

- **Canada's Best Employer 2021:** Based on direct and indirect recommendations from employees that were asked to rate their willingness to recommend their employer to friends and family.
- **Canada's Best Diversity Employer 2021:** For exceptional workplace diversity and inclusiveness programs.
- **Brazil Great Place to Work (GPTW) Certificate 2021**: For offering exceptional employee engagement and culture as determined by survey results from employees.
- **Top Graduate Employers 2021, Australian Association of Graduate Employers**: Recognition for offering the best place to work for graduates entering the workforce as determined by a survey of graduates.
- **Canada's Top Employer for Young People 2021**: for offering the best workplace and development programs, such as the professional development program (PDP) for young professionals.
- **Best Companies for Interns in Chile 2020**: In recognition of organizations that provide the most positive experience for interns, as determined by interns themselves.
- **Diversity and Inclusion Award 2020, Saskatchewan Intercultural Association**: For recognition of continued D&I support efforts while celebrating and honoring inclusive and diverse workplaces in the province of Saskatchewan, Canada.
- **Best Chilean Companies 2019**: for sustaining a standard of excellence.

Our focus areas under the Labor Pillar are creating employment and skills development opportunities in emerging economies and fostering a diverse and inclusive environment.

### *Skills development*

Hatch is committed to the skills development of its people. We offer a diverse curriculum of technical and professional development programs and more recently a series of leadership development programs aimed at creating a stronger alignment between leadership behaviors and our vision, mission, and values. We have improved our formal career development process to ensure that our employees can more easily seek feedback on how to develop their careers and to engage in dialogue with their sponsor, mentor, or manager, with a particular focus on our young professionals (those with less than three years of work experience).

Employee development follows the 70:20:10 model, where 70% of learning takes place through experiences gained in stretch assignments and on-the-job training, 20% through mentorship and exposure to others, and 10% through education, such as instructor-led courses and eLearning.

**1. Creating employment and skills development opportunities in emerging economies**

We are actively involved in creating local employment and skills development opportunities through client engagements based in emerging economies. On many of our projects in remote regions of countries such as El Salvador, New Caledonia, Mozambique, Brazil, and Mauritania, we employ between 200 and 500 local and regional employees directly or through our on-site project contractors.

**2. In South Africa, we have implemented programs for the development of our nearly 1,000 local staff.**

We are proud to have achieved (in 2019) and maintained a Level 1 Broad-Based Black Economic Empowerment (B-BBEE) rating recognition. B-BEEE is a program launched by the South African government to encourage businesses to integrate black people in the workspace, support black businesses, and give back to poor black communities affected by land repossession. We began our transformation journey in 2001, well before the B-BBEE legislation was put into place. Since then, we have consistently updated our transformation plan to evolve with the program's requirements, and have exceeded the targets in many areas, with ownership being a key focus.

**3. Fostering a diverse and inclusive environment**

One of our ambitious targets for our D&I strategy is to achieve organic growth of 50% women in our new graduate hires. Policies and procedures that have been implemented to achieve this goal include ensuring equal gender balance for all interviews in recruitment, documented rationale for our hiring decisions, and our committed support of women in STEAM education programs to increase the pool of candidates. These initiatives have resulted in female candidates growing to 31% in 2021, from 28% in 2017.

We are also striving to increase female participation in leadership positions. We carefully monitor promotion and compensation rates for women and have implemented an internal leadership-driven sponsorship program with the goal of accelerating the development of high-performing women.

## Path forward

The main activities planned for the next twelve months under this pillar include:

- deliver the Hatch Manifesto Driven Leadership tools, which focus on our Manifesto and increasing emotional intelligence, to all employees in 2021 and 2022
- launch the Hatch Supervisor Essentials program for new and existing supervisors, training them on key supervisory skills such as delegating, coaching, and managing conflict
- upgrade the Hatch learning management system to better develop our employees by assigning learning based on the appropriate attributes, such as role and location, to ensure that everyone is given the knowledge required to be successful, providing access to learning that will aid in their overall career development, and allowing us to track and monitor program completions and feedback

# Pillar 3: Environment

### *Assessment, policy, and goals*

We are passionately committed to the development of a future shaped by an economically, socially, and environmentally sustainable global society. As such, Hatch fully supports the UN Global Compact's Environmental Principles under this pillar. Our commitment is captured in our Sustainability Policy.

### *Implementation*

On an annual basis, the Hatch Environmental Management System (EMS) team reviews and establishes environmental objectives and planned actions for the coming year. Over the past year we have conducted studies examining water use reduction opportunities, opportunities for naturalization, energy efficiency, and waste reduction initiatives. We are currently revising our EMS and recalculating our baseline for environmental indicators, and will report on this baseline for energy, greenhouse gas (GHG) emissions, water usage, and waste in 2022. Once our new baseline is developed, we will establish reduction targets to 2030, which will be reported in our FY23 report.

Hatch has established a goal to become carbon-neutral by 2030. A key success factor in achieving this goal is ensuring we have robust energy and GHG emissions data. During the past year, we undertook a process of validating and updating this data and are establishing data compilation and assessment methodologies that will be adapted for each of our core delivery offices.

***Principle 7:***

Businesses should support a precautionary approach to environmental challenges.

***Principle 8:***

Businesses should undertake initiatives to promote greater environmental responsibility.

***Principle 9:***

Businesses should encourage the development and diffusion of environmentally friendly technologies.

We are also exploring negative emissions technologies, including carbon capture utilization and storage for clients and our own investment evaluations. We expect these solutions to play a key role in our net-zero strategy.

The Hatch EMS consists of procedures, registers, and plans to identify, manage, monitor, and control environmental issues in a holistic manner and in accordance with ISO 14001:2015. Hatch-owned offices have been ISO 14001 certified since 2014. Our revised baseline will expand our focus to our Mississauga complex. This past year our third-party ISO 14001 auditor, SAI Global, noted the efforts of our engagement managers to incorporate sustainability principles and mitigate environmental risk on our client projects.

In 2020, Hatch launched a dedicated Climate Change business practice, sponsored by our CEO, which functions across all three of our main sectors. The objectives of this practice are to:

- create a center of focus for the delivery of climate change-related services
- develop and maintain specific expertise in climate change solutions, including GHG abatement strategies, emerging technologies, and policy and market barriers and enablers
- implement projects that reduce our clients' GHG emissions and assist our clients to adapt to the business and physical impacts of climate change

Our most significant impacts under the Environment Pillar are around Principle 9, in the diffusion of environmentally friendly technologies. An example of this was the recently commissioned $SO_2$ Abatement Project we undertook for Anglo American Platinum at its Polokwane Smelter in South Africa. The project implemented a unique off-gas system and sulfuric acid plant to treat emissions from the world's largest electric furnace in the platinum business. The project has provided positive outcomes for the environment, the community, and the business.

## Path forward

The main activities planned for the next twelve months under this pillar are to:

- recalculate our baseline for energy and water consumption, waste to landfill, and GHG emissions for our Mississauga complex on an expanded operational boundary, which will be described in our 2022 report
- report annually on our progress to net-zero from 2023 to 2030

Anglo American Platinum
Polokwane $SO_2$ Abatement Project

# Pillar 4: Anti-Corruption

### *Assessment, policy, and goals*

Based on our founders' early principles, we are committed to maintaining our reputation and high standards of ethical behavior in the conduct of our business. Our Ethics mandate can be found here, demonstrating our support for the Anti-Corruption Pillar of the UNGC.

Hatch has a Whistleblowing Policy that is applicable to all employees, as well as external consultants, contractors, and agency staff while working for Hatch. The policy requires reporting on the following: criminal offences, failure to comply with legal obligations, actions that endanger the health or safety of employees or the public, actions that cause damage to the environment, and/or actions that are intended to conceal any of the above.

***Principle 10:*** Businesses should work against corruption in all its forms, including extortion and bribery.

### *Implementation*

Hatch's Code of Conduct requires employees to comply with anti-corruption legislation when doing business in and outside their home countries. Additionally, Hatch has a Signing and Approvals Policy and pursuit review processes that form part of our internal controls to manage our compliance obligations and other risks. We work closely with our banking partners to ensure compliance with relevant anti-money laundering and terrorism financing legislation and prohibit any acts of corruption, bribery, or improper influencing of decision-makers.

Hatch has a responsibility to know and understand our clients, partners, and subcontractors to avoid engagements that may conflict with international sanctions, export control, anti-corruption or similar legislation that can pose a reputational risk. Hatch processes provide for the review of potential clients and third parties to assist in the process of knowing who we are doing business with. Our Commercial/Legal practices support this effort and help us understand their company and business, their principal representatives, and their current and past business practices.

In 2017, Hatch implemented a Social & Ethics Committee to assist our Board of Directors with oversight of social and ethical matters and to ensure that our company remains a committed socially responsible citizen. The committee's primary role is to supplement, support, and advise on the effectiveness or otherwise of management's efforts in respect to social, ethical, and sustainable development-related matters.

The committee is mandated to draw these matters to the attention of the Board as occasion requires and to report, through one of its members, to shareholders at our Annual General Meeting.

The processes and procedures described above were recently tested, resulting in Hatch reporting a case of fraud to the South African Specialized Investigative Unit. This case involved the squandering of public funds by a party that was contracted by one of the local municipalities to implement a project in which Hatch was involved. Hatch is currently working with the South African police and prosecutors to bring the matter before the courts.

## Path forward

The main activities planned for the next twelve months under this pillar are:

- review the Hatch Code of Conduct and update as needed to fully reflect the UNGC Anti-Corruption Pillar, supported by staff training
- review and update the mandate of the Social & Ethics Committee to reflect emerging developments across the societies in which we operate and ensure alignment with the Ten Principles
- establish a quarterly review and reporting process for the ongoing evaluation of Hatch's commitment to the UNGC to advise the Board on opportunities for continuous improvement

# Advancing the SDGs

Under the guidelines of the UN Global Compact, we have committed to operating our business in ways that meet the fundamental responsibilities in the areas of Human Rights, Labor, Environment, and Anti-Corruption. At the heart of this framework are the seventeen SDGs—goals of urgent action to end poverty, improve health and education, foster economic growth, and diminish inequality, all while tackling the effects climate change.

Hatch's strong view is that engineering, and firms such as ours, play an essential role in advancing the SDGs. Creating practical solutions to difficult challenges and then building them is at the core of what Hatch does; our work in the infrastructure, energy, and mining/metals sectors provides tangible examples of the crucial role engineering plays in advancing the UN SDGs.

The below SDGs are those which pertain to the services we provide and the industries we work in and can thus have a positive impact in.

Calgary West LRT

# Annual progress on select Goals

2 ZERO HUNGER

# Goal 2: Zero Hunger

As our populations grow and there is a greater migration to urban locations, we are putting pressure on available farmland—cultivated land that can sustain growing crops. Unfortunately, creating more cultivated land mass often results in deforestation, which has an impact on our climate, so a more balanced and sustainable solution is required. We need to be more productive in using existing and new sources of agricultural land. To maintain food accessibility we will also need to adapt to our changing climate.

Our work in the fertilizer industry helps support more cost-effective and sustainable production of fertilizers, which will be vital to the future well-being of the earth's population and food security. Fertilizers can also make farms more resilient to climate change by maximizing the potential of increasingly scarce arable land and thereby preserving more of our forests and ecosystems. To support the delivery of fertilizers, more resilient infrastructure must be constructed to withstand increasingly harsh weather conditions and the effects of climate change.

As an example, Hatch is currently working with Mosaic on developing the first greenfield underground potash mine in Canada in more than fifty years: the K3 mine located outside of Esterhazy, Saskatchewan, Canada. Mosaic, one of the world's largest producers of potash, a form of potassium, also produces phosphate and nitrogen, which when combined are the three fundamental nutrients needed to grow plants. Mosaic provides farmers with optimized fertilizers that help enhance the nutrition and production of their crops.

K3 mine, Mosaic

5 GENDER EQUALITY

# Goal 5:
# Gender Equality

In addition to our commitment to create a gender balanced work environment within Hatch, we are incorporating D&I into our clients' projects through the D&I Design initiative. This initiative helps create a more inclusive workplace environment by incorporating the unique ideas, opinions, and perspectives of project stakeholders into the project development process to create inclusive and accessible solutions and eliminate barriers for use.

Our six-step process is depicted below:

**collect** a diverse set of ideas and perspectives

**consult** with stakeholders to understand their needs

**remove** barriers by fostering a safe and supportive environment

**design** for all, not just the majority

**create** tools that help incorporate D&I Design considerations

**improve** by seeking out areas to strengthen D&I Design implementation

By implementing this initiative, we have been able to make workplaces more accessible. One example is making tools more accessible and easier to use by suspending heavy tools from ceiling beams. This design innovation enables people with less upper body strength to avoid having to pick up the tools from the ground. Another example is the design of an administration building with movable walls in the change room. As the company's female workforce increases, they can now easily adjust the number of washrooms with a movable wall. Lactation rooms are also being incorporated into building design.

6 CLEAN WATER AND SANITATION

# Goal 6: Clean Water and Sanitation

Urban development strategies must incorporate consideration of the effect that the expected increase in high density precipitation and flash floods will have on new housing developments, energy access, transportation, communications, and other community-related infrastructure. The integrity and potential redesign of existing infrastructure such as roads, communication corridors, energy and water distribution, and drainage systems must also be evaluated. Improved mechanisms for receiving early warnings of accelerating extreme weather events, along with coordinated responses and adaptation are required.

Hatch supported the Department of Public Utilities at the City of Columbus implement its Blueprint Columbus program. The objective of the program was to stop rainwater from entering the sanitary sewer system through lateral lining, roof water redirection, and a voluntary sump pump program. Hatch utilized green infrastructure design to filter the collected water through layers of stone, soil, and plants before slowly releasing into the storm sewer system that discharges into rivers and streams. This approach provides a practical, cost-effective strategy for improving water quality and unburdening the sanitary system.

In Canada, the Region of Halton engaged Hatch to design and construct a new dedicated effluent sewer and outfall pipeline to convey treated effluent to a diffuser field in Lake Ontario. In addition to helping the quality of Lake Ontario's water, the project incorporated the design of a 800kW microturbine power generation unit incorporated into the outfall shaft, producing green power that is directly used on the wastewater plant. This project was an Award of Excellence recipient in the Water Resources category at the 2020 Canadian Consulting Engineering Awards.

Mid Halton

7 AFFORDABLE AND CLEAN ENERGY

# Goal 7:
# Affordable and Clean Energy

Clean and affordable energy is fundamental to improve the standard of living and drive economic growth. As the world transitions towards lower carbon, access to affordable, clean energy will become even more important to support socio-economic development. In 2020, Hatch assisted the Development Bank of Southern Africa (DBSA) create a ten-year integrated energy investment strategy to align the bank with the major transformations taking place in the energy sector globally and across Africa. A critical component of this work was evaluating the socio-economic impact of the resulting revised investment strategy to ensure potential negative social impacts were identified and mitigated.

Another example of our work in helping expand clean energy supply is the Oxec II Hydroelectric Project in Guatemala. In 2019, Hatch completed work on the dam and 56 MW power station, which incorporated several first-of-their-kind features. An innovative cellular cofferdam design eliminated a major phase in diversion, achieving a remarkable reduction in bank excavation and reducing the overall construction schedule, which helped enable the viability of the project. The spillway stilling-basin design, optimized using computational fluid dynamics modeling, reduced the spillway concrete volume by 40%, while ensuring no adverse impact on the downstream Oxec I station.

Maritime Link Project

In addition to facilitating growth in clean energy supply, the effective connection of clean energy generators and users is an important element for the provision of clean energy. This connection is becoming increasingly important as more renewables are added to electricity grids. Hatch is currently supporting Nova Scotia with the Maritime Link Project, which enables the province to import power generated from the Muskrat Falls generating station in Labrador. The project is comprised of a major interconnection of transmission systems between the island of Newfoundland and the province of Nova Scotia in Canada. A second high-voltage direct current (HVDC) line, the Labrador Island Link, connects Labrador to Newfoundland. The new 500 MW, +/- 200 kV HVDC link runs via submarine cable across the Cabot Strait.

Oxec II Hydroelectric Project

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

# Goal 9: Industry, Innovation, and Infrastructure

With fast-increasing urban densification and limited road infrastructure, it is increasingly important for urban centers to provide more efficient public transportation that can simultaneously provide good quality service to riders and maintain low operational costs. Innovative engineering is required to incorporate the principles of sustainability into the design of new transportation infrastructure.

Hatch's work on the Eglinton Crosstown LRT, the largest transit expansion project in Toronto's history, is one example of our focus on accelerating public transportation. The Eglinton Crosstown is a nineteen-kilometer (km) rapid transit line that will run through the heart of Toronto, along Eglinton Avenue. The transit line will connect west to east and includes a ten-km section tunneled underground. There are fifteen underground stations and ten at-grade stops. Three of the underground stations provide transfer points to the existing TTC subway system and adjacent bus terminals.

Infrastructure design is increasingly focused on deliberately enhancing sustainability outcomes.

In addition to quality-of life-improvements such as better access to basic services, education, and employment, developers and investors are evaluating the impact of new builds on carbon footprint and incorporating GHG mitigation opportunities into design. Climate-smart, resilient infrastructure is also a critical design factor for adapting to the anticipated effects of climate change.

Hatch's climate change team is working with our infrastructure design teams in rail and urban development to assess the GHG mitigation potential of design options at different phases of design. We are also identifying and evaluating climate change-related risks to proposed infrastructure, and the cost-benefit of options to mitigate these risks. Our assessments are informed by relevant guidance such as Infrastructure Canada's Climate Lens, the Greening Government Strategy, the Public Infrastructure Engineering Vulnerability Committee (PIEVC) Protocol, and ISO 14091:2021 Adaptation to Climate Change assessment guidelines.

Eglinton Crosstown LRT

11 SUSTAINABLE CITIES AND COMMUNITIES

# Goal 11: Sustainable Cities and Communities

Hatch helps municipalities address the core challenges of urban design around the world in improving the quality of life for growing populations while reducing the impact on natural assets and systems. Our portfolio of work includes supporting the development of EV bus maintenance yards for transit agencies in Los Angeles and San Francisco, and examining how to incorporate housing, including affordable housing, on the scarce public land occupied by these maintenance yards. We are also involved in planning for transit-oriented development and affordable housing while ensuring that existing communities are not displaced as transit infrastructure is expanded in the Puget Sound Region in Washington.

In the UK, we are supporting green recovery and net-zero goals through the creation of a decarbonization plan for the Port of Aberdeen and are measuring social value for major investments to lay the foundation for sustainable economic success in the coming decades. In Australia, we have planned for transit-led renewal in Sydney, Melbourne, and across the country to support low-carbon transportation options and maximize economic development opportunities. As paying for investments in sustainable communities is critical to ensuring implementation, we are integrating funding and financing strategies with planning for net-zero and climate adaptation over the next decades in our work across California.

Kent Des Moines Station, Sound Transit
(Photo credit: Sound Transit and ZGF Architects)

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

# Goal 12: Responsible Consumption and Production

A significant component of Hatch's work in the mining and metals sector focuses on resource development and utilization. Many of the SDGs are unachievable without the availability of materials required to build infrastructure and energy systems. The transition to a low carbon world is highly dependent on the metals that support large-scale electrification. Hatch is helping advance the responsible use of resources and actioning responsible industrial methods.

Our work for AMG Vanadium, for example, involves implementing unique processing of spent catalysts to recover valuable metals from what would otherwise be a waste material. The ferrovanadium produced is used to strengthen steel, enabling a significant reduction in the amount of steel needed in a given application. Another benefit is that using spent catalyst rather than new ore to produce the ferrovanadium reduces the carbon footprint of production by a factor of ~5.

A key challenge faced by the mining sector in objective for responsible production is the handling of tailings. Hatch's work in this field is helping action responsible production through the implementation of dry tailings disposal, eliminating the risks associated with wet slurry storage of the waste materials. A current example of this is Project Lucy, our work with Prony Resources in New Caledonia (former Vale) for waste materials from nickel production. Hatch is carrying out a project to convert the disposal to dry stacking by implementing a large filter plant.

AMG Vanadium
Zanesville Plant

13 CLIMATE ACTION

# Goal 13:
# Climate Action

Managing our own GHG emissions, while important, is dwarfed by the impact Hatch can have by helping our clients reduce the carbon footprint of their operations and products. Many of our clients are significant emitters that have committed to ambitious reduction goals and Hatch is in a unique position to bring practical measures to help them achieve these reductions. In response to this need, we created and launched our Climate Change practice, which integrates all our capabilities across Hatch to help our clients achieve their climate change mitigation targets and adapt to the impacts of climate change on their businesses.

The Raglan Mine Integrated Energy Project undertaken for Glencore and Tugliq Energy created a utility-scale wind turbine with energy storage, integrated with diesel generators at a remote mine site in the Canadian Arctic. Hatch's Microgrid (HµGrid) dispatches the charger and discharge from energy storage units to smooth out wind power variations and displace diesel generation. This first-of-its-kind project reduces diesel consumption by four million liters per year and serves as a model for larger scale installations.

Raglan Mine

Electrification will play a major role in the mitigation of GHG emissions. Hatch is supporting the Sudbury Integrated Nickel Operations in extending the Onaping and Craig mines to a depth of ~2,600 m. The depth of the mines presents several technical challenges that were addressed through electrification by implementation of a battery electric vehicle fleet. This innovation is the key enabler in the techno-economic feasibility of Onaping Depth and is leading the way in creating a vision for mitigating Scope 1 emissions at future mines.

Onaping Depth

Our work on the Air Liquide electrolyzer project is a tangible example of the role hydrogen will play in advancing climate action. The existing hydrogen production plant in Bécancour, Québec uses steam methane reforming to produce hydrogen gas. In 2020, the facility was expanded by the installation of proton exchange membrane (PEM) electrolyzers to form a 20 MW system, which is currently the largest operational plant of its kind in the world. Low-carbon hydro-electric power from the Québec grid is used to power the PEM electrolyzers and the expansion has increased production capacity by 50% to 3,000 tpa, resulting in a $CO_2$ emission reduction of 27,000 tpa.

View inside the electrolyzer building
(source: Cummins)

An important part of Hatch's work is helping our clients create ideas and establish practical ways of achieving their reduction objectives. Over this past year, Hatch has helped over seventy operations across all sectors design GHG emission reduction programs through the collection and validation of baseline data, interrogation of site-level processes, and the design of techno-economically practical, actionable decarbonization roadmaps. These roadmaps are presented as corporate-wide and site-specific marginal abatement cost or levelized cost of conserved carbon curves.

17 PARTNERSHIPS FOR THE GOALS

# Goal 17:
# Partnerships for the Goals

**The first Young SDG Innovators Program (YSIP), 2020**

We recognize that achieving the SDGs requires collaboration with partners and other stakeholders. Hatch became an active participant in the UNGC in September 2019 and as part of that commitment, we applied and were accepted into the UNGC's inaugural Young SDG Innovators Program (YSIP). Our Hatch YSIP team developed a commercially viable, scalable, and integrated energy and water solution for off-grid communities solely relying on diesel fuel and fuel oil for energy. This framework was presented through a UNGC-hosted webinar in February 2020. We have since leveraged the YSIP framework to deliver one climate change-related pro bono engagement each year. This year we are supporting the First Nations Climate Initiative create a net-zero LNG development and export framework for the province of British Columbia, Canada.

Notable industry partnerships include:

- **Green Hydrogen Consortium** to help eliminate obstacles to the adoption of green hydrogen technologies and encourage innovative application.
- **Development Partnership Institute** to accelerate the global development partnership potential of the mining sector through the values of transparency, equity, and inclusion.
- **Natural Resources Canada's CanmetENERGY research center** to develop a pressurized chemical looping process based on a novel Hatch fluid bed reactor technology.

Natural Resources Canada's CanmetENERGY research center

# Contact us

Whatever our clients envision, our engineers can design and build. With over six decades of business and technical experience in the mining, energy, and infrastructure sectors, we know your business and understand that your challenges are changing rapidly.

We respond quickly with solutions that are smarter, more efficient, and innovative. We draw upon our 9,000 staff with experience in over 150 countries to challenge the status quo and create positive change for our clients, our employees, and the communities we serve.

**Email us: globalcompact@hatch.com**

hatch.com

HATCH

# Appendix

# Sustainability Policy

Hatch's Manifesto defines our unwavering vision for our organization in one concise statement: *We are passionately committed to the pursuit of a better world through positive change.*

Delivering positive change for the clients and communities we serve requires safe, innovative, and practical solutions that are sustainable for the long term.

We define sustainability as the optimization of environmental protection, economic prosperity, social justice, and cultural vibrancy to ensure that businesses, ecosystems, and communities thrive, now and in the future.

This sustainability policy provides the basis for delivering sustainable solutions, and a framework for setting and reviewing sustainability objectives and targets in our work.

## Our commitment

- We protect the environment and prevent pollution while operating facilities in a sustainable manner.
- We fulfil all of Hatch's compliance obligations.
- We ensure the continual improvement of our environmental management systems to enhance performance.
- We seek innovative solutions that deliver sustainable results for our clients and communities.
- We encourage our suppliers to adopt sustainable practices.

## Our goals

- Optimize environmental, social, economic, and cultural performance in all aspects of our business.
- Plan, design, and implement projects that focus on creating sustainable value for our clients and their communities.
- Follow the Hatch Project LifeCycle Process, incorporating sustainability principles in all aspects of our services.
- Operate our own facilities in a safe, environmentally, and socially responsible manner while managing our footprint.
- Develop, employ, and disseminate innovative technologies and methods that integrate sustainability into our business and our clients' facilities.
- Contribute to the communities in which we live and work through initiatives such as volunteering and charitable giving, with a focus on educational scholarships.
- Provide employees with training and opportunities to integrate sustainability into their work.
- Establish goals, objectives, and key performance indicators to measure progress towards achieving our sustainability goals and commitments.
- Regularly review our projects and business sustainability initiatives to capture insights and promote continual improvement.
- Achieve carbon neutral operations by 2030.
- Communicate our achievements annually.

## Responsibility and accountability

Responsibility and accountability for sustainability begins with the CEO and senior leaders, but our success depends on every employee integrating sustainability principles into their daily activities.

John Bianchini
Chief Executive Officer
April 2021

# Health and Safety Policy

At Hatch, health and safety is a core value. Nothing is more important than the well-being of our employees, clients, partners, and the public. Our goal of No Harm, clearly stated in our Manifesto, requires us to deliver the highest level of health and safety performance in all work environments and communities with a focus on continual improvement and sustainability.

## To accomplish our goal of No Harm, we will:

- embed this policy into our business practices by establishing objectives, targets, and a plan that focuses on meeting our goal
- implement "Designing for Safety" principles as we plan, design, construct, and commission facilities for our clients
- implement a health and safety management system on all engagements that include the Hatch Safety Fundamentals
- provide healthy and safe workplace facilities and environments, which includes promoting mental wellness for our staff
- strive to continually improve our performance through innovative ideas
- comply with all applicable legislation
- regularly review our overall company performance, as well as our performance on individual engagements
- provide employees with the required training, opportunity, and support to recognize and manage hazards and risks by implementing control measures
- communicate and facilitate participation with our employees, clients, contractors, and other stakeholders

## Responsibility and accountability:

- the ultimate accountability for leading the implementation of this policy resides with the CEO, together with all senior business leaders and associates
- every Hatch engagement manager is responsible for including adequate time and resources for the implementation of this policy for their engagements

## Hatch employees are accountable for:

- being familiar with Hatch's health and safety requirements
- their own health and safety
- executing activities and actions so that they do not place other employees, clients, or partners at risk
- reporting all at-risk behaviors and unsafe conditions to their supervisor and/or senior leadership
- looking out for colleagues and intervening as required
- behaving in accordance with this policy

John Bianchini
Chief Executive Officer
January 2021

HS-POL-001

HATCH

Return to Policies

# Quality Policy

At Hatch, quality is a core value. We are passionately committed to the pursuit of a better world through positive change, making lasting contributions to our clients' financial, social, and environmental performance.

We deliver positive change by listening to our clients' requirements, then combining our exceptional ideas with exceptional service to provide valuable solutions across our clients businesses. We learn from organizational knowledge and analyze our business performance to sustain a culture of continual improvement.

## Our commitment

- We deliver excellence, as measured by our clients, when we study, plan, design, construct, and commission safe, sustainable, and innovative solutions.
- We build quality into our deliverables by adhering to the specific requirements outlined by our clients, complying with statutory and regulatory legislations, and observing all applicable codes and standards.
- We complete all client deliverables on time and on budget, and in accordance with our agreed-upon parameters, to deliver stated business outcomes for our clients and for Hatch.
- We uphold a culture of caring for our people.
- We maintain organizational knowledge at every stage of the employee lifecycle, including recruitment, training, and mentoring.
- We are internally motivated to apply a risk-based approach to how we plan, review, and continually improve the Hatch Business System and tools. We ensure these are efficient and effective for delivering practical solutions to our clients.

## Responsibility and accountability

The ultimate responsibility for leading the implementation of this policy resides with the CEO, together with senior business leaders and Associates. However, our success depends on every project manager actively implementing this policy on their projects, and on every employee applying a disciplined approach to preparing, checking, approving, and delivering quality deliverables for our clients.

John Bianchini
Chief Executive Officer
March 2021

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# Our commitment to Diversity and Inclusion

We are committed to diversity and inclusion because of the simple belief that a diverse and a fully inclusive work environment fosters a plurality of thought and perspectives that solves challenging problems and creates value for our clients, for our communities, and for the world at large.

Hatch's vision for diversity and inclusion builds on our core values, including the belief that we are entrepreneurs with a technical soul. Entrepreneurship speaks to a mindset, a way of thinking and acting like an owner, and a passion to pursue goals others might not have the courage to take on. Building from our core as engineers, scientists, and technologists, we use our skills and this mindset to tackle the world's greatest challenges. A diverse workforce allows us to unlock the complete potential of our team who will improve our clients' businesses, thereby shaping the future of the world we live in, contributing in a meaningful way to society's advancement, and creating positive change.

Our commitment to diversity and inclusion intends to enable that positive change. We are proud that our organization is home to 9,000 employees who—regardless of gender, ethnicity, race, sexual orientation, disability, and way of thinking—are celebrated and their unique strengths harnessed to create outcomes that leave a positive legacy in the communities we serve and call home.

The purpose of all our diversity and inclusion initiatives is to support the continued nurturing of a collaborative workforce that leverages its diversity at every level of our organization and cultivates an inclusive work environment for all. In addition to our global programs, each of our six regions (Eastern Canada; Western Canada; USA; South America; Australia and Asia; Africa, Europe, and the Middle East) also educates and empowers our diverse workforce through relevant local programs.

John Bianchini
Chairman & Chief Executive Officer
January 2021

HATCH

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# Indigenous Peoples Policy

Hatch's relationship with Indigenous Peoples is based on the values of honesty, respect and transparency. Our ability to deliver reliable, innovative solutions for our clients globally is enhanced by our knowledge and understanding of the histories, cultures, protocols, values, aspirations, and governments of Indigenous Peoples.

## Our Commitments

- To engage early, openly, and honestly in a sustained manner with Indigenous Peoples.
- To build long-term and mutually beneficial relationships with Indigenous Peoples and businesses.
- To promote opportunities, within our organization and also with our clients, that foster engagement and participation with Indigenous Peoples.
- To respect the rights of Indigenous Peoples to maintain and strengthen their own institutions, cultures and traditions, and to pursue their development in keeping with their needs and aspirations.

## Our Goals

- Attract, train and retain Indigenous employees at all levels of our organization.
- Provide programs and build partnerships that facilitate access to educational opportunities for Indigenous Peoples in communities where we operate.
- Identify opportunities for meaningful and targeted community investment.
- Support the development and success of Indigenous businesses.
- Work with clients and partners to build sustainable economies in Indigenous communities.
- Promote awareness and understanding of Indigenous Peoples' rights, cultures, values, and histories in our workforce.
- Review our projects and business practices on an ongoing basis, building a framework for engagement and participation with Indigenous Peoples.

## Responsibility and Accountability

Responsibility and accountability for Indigenous Peoples engagement begins with the CEO, senior leaders and project managers. We will encourage our employees to learn about and understand the traditions, values, and aspirations of Indigenous Peoples.

John Bianchini
Chief Executive Officer
March 2018

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# Hatch Climate Change Statement

December 2020

HATCH

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# 1 Vision

We are passionately committed to the development of a future shaped by a sustainable[1] global society. We recognize that climate change is largely caused by human activity and hinders this vision by negatively affecting natural ecosystems, economic returns, and community development. The resolution of this complex global problem will require multiple simultaneous strategies. As "entrepreneurs with a technical soul" actively participating in the metals, energy and infrastructure sectors, Hatch is uniquely positioned, and obligated, to affect positive change on this issue as it is amongst the toughest challenges of our era.

1. Hatch sustainability definition: the synergistic relationship between economic performance, environmental protection, and community engagement for all stakeholders.

# 2 Mission and Goals

Using our exceptional diverse teams, we aspire to apply our vast technical and business knowledge to designing and building practical, safe, and innovative solutions to combat climate change. Hatch takes a scientific, evidence-based approach to develop solutions pursuing the twin goals of:

1. Reducing the release into, and ultimately the presence of greenhouse gases (GHG) in our atmosphere
2. Adapting our built and natural environments for climate change impacts.

While we pursue these objectives, we recognize that society must also maintain the rights and aspirations of communities in developing economies to prosper, requiring access to affordable, cleaner energy, and energy transitions that help lift people from poverty. One objective cannot take priority over the other – both are essential to sustainable development. Under all currently plausible scenarios, carbon-based fuels will continue to play a significant role in the energy mix for the near term, and into the transition to net zero emissions by 2050.

Hatch intends to take a leading role in achieving these objectives by investigating, developing, and implementing the following strategies simultaneously, over what may be a prolonged period of transition away from carbon:

1. Avoidance of carbon combustion (including the reduction in demand for energy and products requiring carbon)
2. Reduction of $CO_2$ generated by improving the efficient use of carbon
3. Removal and sequestration of carbonaceous gases from our atmosphere (either at point source or directly from the atmosphere)
4. Improvement of society's resilience to the Earth's changing climate.

We also recognize that changes to policy and legislation are required to achieve the goals and objectives outlined in the Paris Agreement[2]. Even though governments will take leading roles in achieving these objectives, we intend to take part, work collaboratively, and actively participate in climate change-related activities.

We operate our business and carry out engagements for our clients with methodologies, tools, and teams consistent with these goals, and we seek to continually improve them.

2. A landmark agreement to combat climate change and to accelerate and intensify the actions and investments to a low carbon future created the United Nations Framework Convention on Climate Change (UNFCCC) on December 12, 2015.

# 3 Context – The Science of Climate Change

Climate change is defined as the change to long-term weather patterns brought on by the accumulation of carbonaceous gases in our atmosphere, forming a greenhouse effect. The science behind this phenomenon comprehends that the cycle of oxidation and reduction of the Earth's carbon inventory has been taking place for billions of years (Figure 1). In the current epoch, these processes resulted in a concentration of GHG that was in a relatively steady state, allowing the development of life, including human civilization. Carbon was initially oxidized by natural processes, and later by human intervention; carbon dioxide was reduced by the natural process of photosynthesis in plant material, fixing carbon as biomass both on land and in our oceans.

## The Carbon Cycle

Figure 1: The Carbon Cycle

Since the onset of the Industrial Revolution, when the combustion of carbon sources was increasingly done to enable industrial processes and the urbanization of society, the rate of carbon oxidation has far exceeded the rate of carbon reduction. As a result, the concentration of GHGs in the atmosphere has risen continually and has not yet reached a new steady state as more and more carbon has been used to support the Earth's growing population. Natural processes of carbon reduction (i.e., fixation as biomass) cannot keep up–this has been exacerbated by the reduction of land and ocean ecosystems containing plants. Figure 2 illustrates this trend and the increasing rate at which carbonaceous gases are entering the atmosphere. It also shows the sheer magnitude of the challenge to move the Earth's carbon balance in a positive direction.

Figure 2: Carbon Oxidation vs. Reduction by Year (Global Carbon Budget 2019, Friedlingstein et al.)

These mechanisms have been widely studied by the scientific community and the findings are indisputable. Hatch therefore accepts this data, the resulting analyses, and many of the recommended strategies. Specifically, we recognize the Intergovernmental Panel on Climate Change (IPCC)'s scientific findings that climate warming is unequivocal and caused by human activities. We welcome the United Nations' Paris Agreement on climate change, which came into effect on November 4, 2016, seeking to limit global warming to between 1.5 to 2 degrees Celsius above pre-industrial levels.

Recognizing that over 1 degree Celsius of this warming has already occurred, immediate and sustained actions are required to significantly reduce atmospheric GHGs and we acknowledge that many of our clients' businesses are among the biggest contributors to GHG emissions (Figure 3) :

- Large mining and metals extraction companies,
- Oil and gas producers
- Power generators and utilities
- Urban transit operators
- The major municipalities of the world
- Large industrial rail and marine operators.

Source: IPCC (2014). Based on global emissions from 2010. Details about the sources included in these estimates can be found in the *Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*.

Figure 3: Global Greenhouse Gas Emissions by Economic Sector

Most if not all of these clients understand their contribution to GHG emissions and are also among the most active in looking for solutions to minimize them. It is also recognized that their businesses represent major contributions to the global economy and that they support the advancement of growing populations in developing nations. The challenge is to balance the need for energy, materials, and transport to run our society while emitting less GHGs.

The pursuit of this balance will inevitably result in a prolonged and difficult phase of transition for industries, communities, and environments. Several studies investigating plausible future scenarios indicate the energy and materials supply system of the future will be something of a patchwork. Some countries and sectors of the economy could de-carbonize in the coming decades (e.g., the OECD countries), while others will likely require more time to develop techno-economic solutions (e.g., developing countries and some energy-intensive heavy industries). This suggests that the world will require a means of achieving "negative" emissions in some geographies and sectors to offset remaining emissions.

Accomplishing this goal is a global challenge that requires our Hatch team to combine innovative engineering with business knowledge to create transformative change across all sectors of the economy

# 4 Our Role

Hatch has the opportunity to play an important role in finding and implementing solutions to climate change challenges. We are a multi-disciplined professional services firm, that chooses, and has built capabilities, to support our clients across the life cycle of their business–from concept development, through design and construction, to operations and, if needed, close-out.

The role we have chosen is to be a **participating leader,** continuing to support our clients in the metals, energy, and infrastructure sectors, as they seek sustainable development in their businesses in the face of climate change, ultimately assisting them in transitioning to a much lower carbon footprint. This support is not a passive one but a visible, proactive, evidence-driven, and sometimes provocative one, based on passionate energy and a positive attitude focused on delivering new ideas with exceptional service.

Like our clients, we recognize that the environment and the communities in which we live are stakeholders in this pursuit, leading to complex and sometimes seemingly contradictory objectives. This has the potential of putting stakeholders at opposite ends of a debate, creating conflict. As evidence-based decision-makers and experts with many of the skills needed to find solutions, we choose to participate, advise, collaborate, influence, and implement. Our opinions are respected and our voices are loud, so we choose to use them from within the debate, and not from the sidelines as protestors, nor as absent observers.

In these difficult situations, we will use the values in our corporate Manifesto as our guide. We also look outside of Hatch to help develop our practices and methodologies and will strive to continuously improve them. Importantly, we are an active participant in the UN Sustainable Development Goals (Figure 4) into the way we work and conduct business.

Figure 4: UN Sustainable Development Goals

## 4.1 External – Clients

Our solutions have the greatest positive impact on climate change when incorporated directly into the life cycle of our clients' businesses. As a result, we are active in collaborative, targeted, action-oriented, multi-sector initiatives that address our clients' specific technical, environmental, social, and financial issues. We apply a disciplined approach to the climate change challenges our clients face by integrating scientific-technical evaluation and socio-economic analysis into our projects from conceptual development, through design and construction, to commissioning and operations.

Specifically, we aspire to support our clients in reducing their net carbon footprint by:

- Helping our clients be responsible stewards of the resources that people need and want to improve their lives, and that society needs for a sustainable future while helping them shift their product mix to a more sustainable one
- Working as partners to design, procure, and construct assets that produce the minimum volume of GHGs
- Developing and introducing new technologies that mitigate climate change
- Enhancing their shift to cleaner energy generation
- Supporting the operation of their facilities to enhance the efficient use of carbon
- Working with their stakeholders, including employees, investors, and community participants to achieve consensus on climate change issues.

## 4.2 Internal – Hatch

Operating our own business sustainably helps to achieve our climate change goals. This means running a safe, efficient, and socially and professionally responsible business that is profitable. An important aspiration is to transition to net-zero carbon emissions in running our own business by 2030.

Operating in this fashion is consistent with our Manifesto and has the benefits of building trust and a positive reputation with our clients, our employees, and the communities in which we live and work. Our sustainable operation will allow our voices to be heard and enhance the adoption of our solutions, ideas, and opinions, especially in situations of conflict. It also helps to build team spirit and our appeal as an employer of choice.

## 4.3 For Communities

As agents of positive change, we aim to play a positive role in the communities where we operate and in the wider society. In partnership with our clients we contribute to the awareness and understanding of climate change through the enhancement of STEAM (Science, Technology, Engineering, Arts, and Mathematics) education, development of skills and capabilities in the wider community, uplifting of local economies and creation of jobs, development of local suppliers, support of cultural institutions in their education mission, and the active engagement of community support services for those affected by climate change.

# 5 Specific Pathways

An enormous undertaking will be required to achieve the objective of mitigating climate change, particularly in light of a population growing to about nine billion by mid-century. Our specific contribution will be to work with our clients in implementing measures around the four key strategies noted above:

1. Avoidance of carbon combustion
2. Reduction and efficient use of carbon
3. Removal and sequestration of carbonaceous gases from our atmosphere (as point source or directly from the atmosphere)
4. Improvement of society's resilience to the Earth's changing climate

We recognize that the value of the solutions developed in each of these strategies decreases from 1 to 4. Hatch seeks to actively engage in projects and initiatives that address the climate change challenge using these strategies.

Specific industry approaches and examples are given below.

## Avoidance of Carbon Combustion

**Power**
Solar, Wind, Water, Nuclear, Storage, Microgrid

**Transport**
EV (from NCP), Hydrogen (from NCP)

**Oil & Gas**
Solvents (Nsolv)

**Materials**
H2 as reductant, electrolysis

**Agriculture**
Plant-based protein (less mammals)

## Reduction and Efficient Use of Carbon

**Power**
More efficient thermal cycles, Transfer to $CH_4$

**Transport**
New combustion technologies, hybrid

**Materials**
Better use of reductants

**Oil & Gas**
Capture flare gases, SA-SAGD

# Carbon Capture and Utilization/Sequestration

**$CO_2$ Concentration**
Enzymes, $CO_2$ solutions, ammonia – SkyTree, amines

**$CO_2$ Mineralization**
High pressure autoclaves

**$CO_2$ Sequestration**
Weyburn EOR

**Biomass Enhancement**
Genetic-engineered trees and diatoms

**$CO_2$ Scrubbing**
Amines, KOH or $Ca(OH)_2$,

**$CO_2$ Reduction**
$CO_2 \rightarrow CO$ or CO & $H_2$ – Opus 12

**Adv. Bioconversion**
Algae reactors

# Improved Resiliency

**Communities**
Sea walls, levy schemes, green protection areas

**Buildings**
Storm resistant structures

**Industry**
Coastal storm protection, emergency planning protocols, fires safety, new control systems, waste structures, water usage

**Marine**
Adapt ports to higher ocean levels

**Urban Plans**
Local farming, mass transit, recycled water, fire breaks

# 6 Required Skillsets

The four pathways of our approach to mitigating climate change require a comprehensive set of skills that reside throughout Hatch, as summarized in the table below.

| | | |
|---|---|---|
| **Heavy industries**<br>***Metals, Power, Oil & Gas*** | • Renewable power generation<br>• Process engineering, modeling and simulation<br>• Gas handling and scrubbing<br>• Chemical reactor design<br>• Effluent management<br>• Tailings management<br>• Biotechnology<br>• Data management | • Electrical grid management<br>  • Nuclear design<br>  • High-voltage Design<br>  • Master planning for government and regulators<br>• Energy efficiency auditing<br>• Operational efficiency auditing<br>• Automation/digital |
| **Cities and Urban Infrastructure** | • Urban economics<br>• Master planning<br>• Land usage<br>• Transit planning | • Transport electrification<br>• Coast resiliency<br>• Ecosystem management |
| **Discipline engineering** | • Civil<br>• Structural<br>• Mechanical | • Piping<br>• Electrical<br>• Instrumentation |
| **Project implementation** | • Project execution and delivery methodologies, particularly for unique first-of-a-kind projects<br>• Brownfield execution | • Program management<br>• Innovation, R&D, and technology management |
| **Associated skills** | • Government relations<br>• Policy design<br>• Investor relations<br>• First Nation relations<br>• Climate-related risk and investment analytics | • Sustainability strategy design<br>• Permitting<br>• Lifecycle analysis<br>• Environmental and Social Impact Assessments |

## 6.1 Working with Others

We recognize at Hatch that our objectives cannot be achieved on our own so collaboration with partners and other stakeholders is essential.

Some of the key partnerships needed include the following:

- Universities undertaking fundamental research into emerging technologies
- Suppliers of emerging technologies
- Policy makers.

# 7 Hatch Organization

We are introducing a new practice around climate change; it will function across all three of our main sectors and will be established as a new business practice. The objectives/responsibilities of this new practice are outlined below:

- Create a center of focus for the delivery of climate change-related services to ensure:
  - A coordinated market approach to foster client engagement, including for a new base of clients that is expected to emerge
  - Efficient and consistent delivery of climate change services
  - An integrated platform of tools and methodologies, technical expertise, and a home for our growing roster of qualifications.
- Develop and maintain specific expertise around:
  - Tools and methodologies for greenhouse gas related calculations/assessments and development of abatement strategies
  - Status of applicable commercial and emerging technologies,
  - Subject areas not presently ingrained in our current business, such as carbon capture, utilization and storage
  - Business impact assessments, economic analysis, and risk management strategies under different transition and physical impact scenarios
  - Policy and regulatory barriers, enablers, and engagement strategies.
- Incubate the development of tools, methodologies, and service offerings for continuous improvement and external thought leadership with eventual integration across all our sectors, business units, and practices.

A great deal of activity is already occurring, and our clients will benefit from a coordinated and integrated approach of these core skills across all of our market sectors, business units, and business/delivery practices.

The new practice will be called the Climate Change and Sustainability business practice. It will be sponsored by John Bianchini and led by Frank Porretta.

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HATCH