



STUDENTENERGY

# YOUTH SKILLS IN THE ENERGY TRANSITION

Closing The Gap



**SE** RESEARCH & YOUTH ENGAGEMENT

# ACKNOWLEDGEMENTS

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We sincerely thank the 50 young people, 15 leaders in the energy sector, and 2 Indigenous Knowledge Holders from across Canada who took part in the Closing the Gap interviews, sharing their perspectives on the opportunities and challenges in working in 'green jobs' related to Canada's energy sector.

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# INTRODUCTION

This research report “closes a gap” in the knowledge of how youth in Canada are accessing the clean energy industry and the skills required to do this, building off of Student Energy’s “*Energy Transition Skills Project*.” Through compiling youth’s stories and perspectives on entering into the clean energy industry, below is a picture of what youth need in order to expand the work they are doing, the work they want to do, and the work that is needed in the clean energy industry.

Firstly, this report will highlight the research questions that outline this report around youth skills, perspectives, and supports. Then follows a literature review, diving into the background on existing research about the clean energy transition in Canada, youth perspectives on accessing jobs in clean energy, and clean energy transition supports that are currently at play in Canada. Then, the methodology is outlined, explaining how this research was conducted and analyzed. The bulk of this report is the findings and analysis, beginning with the major findings and running through the information collected from both youth and industry actors throughout this research. Before summing up in the conclusions, there is a section on the knowledge transferred to us from consultations with Indigenous elders and knowledge keepers.

Immense appreciation goes to all of the participants in this research. Without the youth interviewees sharing their stories so openly and comprehensively, we could not produce this report. Similarly, the perspectives granted by the industry actors interviewed were monumental in gaining industry insights and advice informing this report. The foundational perspectives granted from interviews with elders and knowledge keepers keep the bigger picture in mind and provide words of wisdom and guidance to anyone reading this report. Thank you all for your time, knowledge, and energy that made this contribution to the industry possible.

From whatever perspective you are reading this report from— whether you are a youth interested in clean energy, an industry employer looking to support youth, or someone who can influence policy—this report can act as a first step in guiding the changes youth need to see in the industry. After reading this report, we hope to see actions across the industry to make the clean energy future possible.

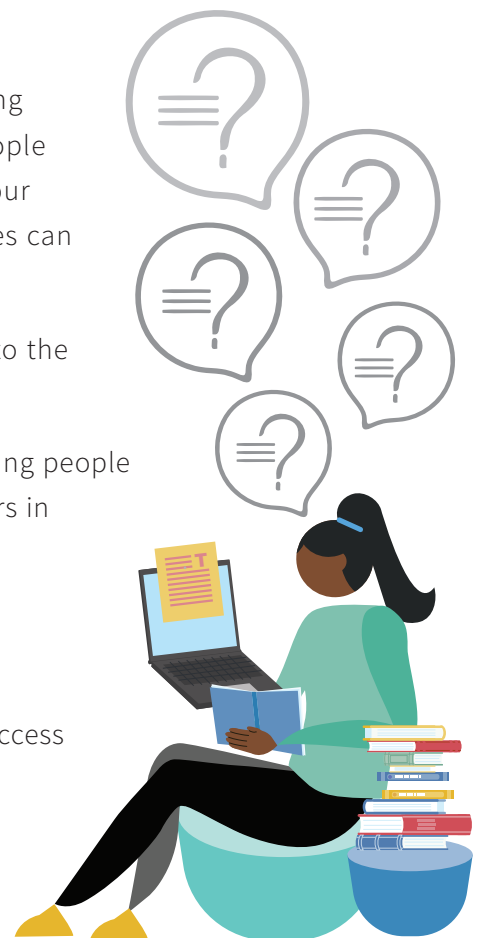
# RESEARCH QUESTIONS

The clean energy industry in what is currently known as Canada is seeing rapid expansion on the path towards a net-zero economy, and youth are central to this transition. Yet when youth attempt to access the clean energy labour market, they often face barriers to accessing these jobs for a variety of reasons. Central to the clean energy transition are the skills needed by workers to make it happen. Youth are in a unique position to gain skills, reskill, and upskill for the jobs needed and that they want in the clean energy industry. But there has been limited research conducted on what these skills are that are most needed by the clean energy industry.

Student Energy aims to close the gap in this research. This research will serve both youth in, or looking to get into, the clean energy industry, as well as clean energy industry actors. One of the research aims is to develop a thorough understanding of the gaps in skills needed to enter the clean energy industry. There is a known mismatch between the skills that youth have and the skills energy actors are looking for, but there is limited research conducted on this topic in Canada. The secondary research aim is to gain a deeper understanding of what the challenges and obstacles are that young people in the clean energy industry face when entering the labour market, and how supports through programs and policies can be put in place to ease some of these barriers for youth.

The overarching goal of this report is to find an answer to the following research questions:

- **What are the gaps** between the skills that young people have, and the skills that clean energy employers in Canada are looking for?
- **What are young people's perspectives** on Canada's clean energy economy, and on the availability of opportunities and pathways to access careers related to clean energy?
- **What supports do youth in Canada need, and from whom,** in order to access the clean energy industry?



# LITERATURE REVIEW



To compile and organize the existing research on this topic, as well as identify research gaps in this area, this literature review is structured through the following questions:

- What does the existing literature say on youth perspectives in Canada on their skills and accessing jobs in the clean energy sector?
- What does the existing research say on career development, workforce transition support, or other relevant policies currently exist in Canada to support youth in entering the clean energy transition labor market?

While the existing literature points to a gap in the skills youth need to access jobs in clean energy, there is limited research on what those skills are. Drawing on existing reports from Canadian and International organizations, news articles, scholarly articles, and government sources, we first examine the landscape of the clean energy transition and youth's roles in it. Then, we identify research on the skills youth currently have, and what barriers they encounter when accessing opportunities in clean energy. We then examine the existing research on transition supports and the roles of industry and governments to support youth in the clean energy transition. We conclude by discussing the gaps in the research that the Closing the Gap: Youth Skills in the Clean Energy Transition primary research aims to find.

# What does the existing research say about the clean energy transition in Canada?

The clean energy transition is already in the works in Canada, and will be a central component to industry and government shifts in the coming years. Most governments worldwide agree that the clean energy transition is necessary and inevitable for our climate and subsequently for workers who will be the ones to enact this transition. Globally, by 2030, approximately 25 million jobs will be created in the energy sector, and seven million will be lost (International Labour Organization, 2019, p. 8). Approximately five million of those lost jobs will be able to be reclaimed by those same workers with labour retention and reallocation programs (International Labour Organization, 2019, p. 8). In Canada, the clean energy labour force will total around 640,000 people by 2030, growing by about 50% from 2021 (Clean Energy Canada, 2021, p. 3). Moreover, by 2030, between 235,000 to 400,000 more jobs will be added to the clean energy sector (Guldimann & Powell, 2022). In the same time, the Canadian green economy is expected to see a labour force shift of about 3.1 million jobs, or 15% of the labour force, signaling an economy-wide unravelling in our very near future, with major increases in green jobs (Guldimann & Powell, 2022). Ultimately, what we are seeing now, and will continue to see, is rapid job creation and the need for reallocation of labour in the energy industry.

While the number of jobs to be created globally is projected to increase rapidly over the next few years, there is currently a gap in skilled workers entering the industry. As the energy transition shifts towards more sources of clean energy,

jobs in oil and gas will decline and workers will be needed in new areas. Some of these areas include research and development, engineering, design, technology, trades specifying in clean energy sectors, business, and marketing, among others (Clark & Matthews, 2023, p. 7). While some areas of the transition may be fairly straightforward, for example, business and research jobs, other areas will require much higher levels of organization and training for the jobs to successfully transition to a clean energy job, such as trades, technology, and design. The pathways for reskilling and industry shifts vary based on occupation, location, and skills required of workers (Sonmez et al., 2022). Overall, there are major shifts in the energy sector workforce already occurring, creating a larger gap in skilled workers to match this pace, which is why reskilling, upskilling, and skills development programming will be a necessary driving force of the clean energy transition. Existing literature on this topic

**In Canada, the clean energy labour force will total around 640,000 people by 2030, growing by about 50% from 2021**

(Clean Energy Canada, 2021, p. 3)





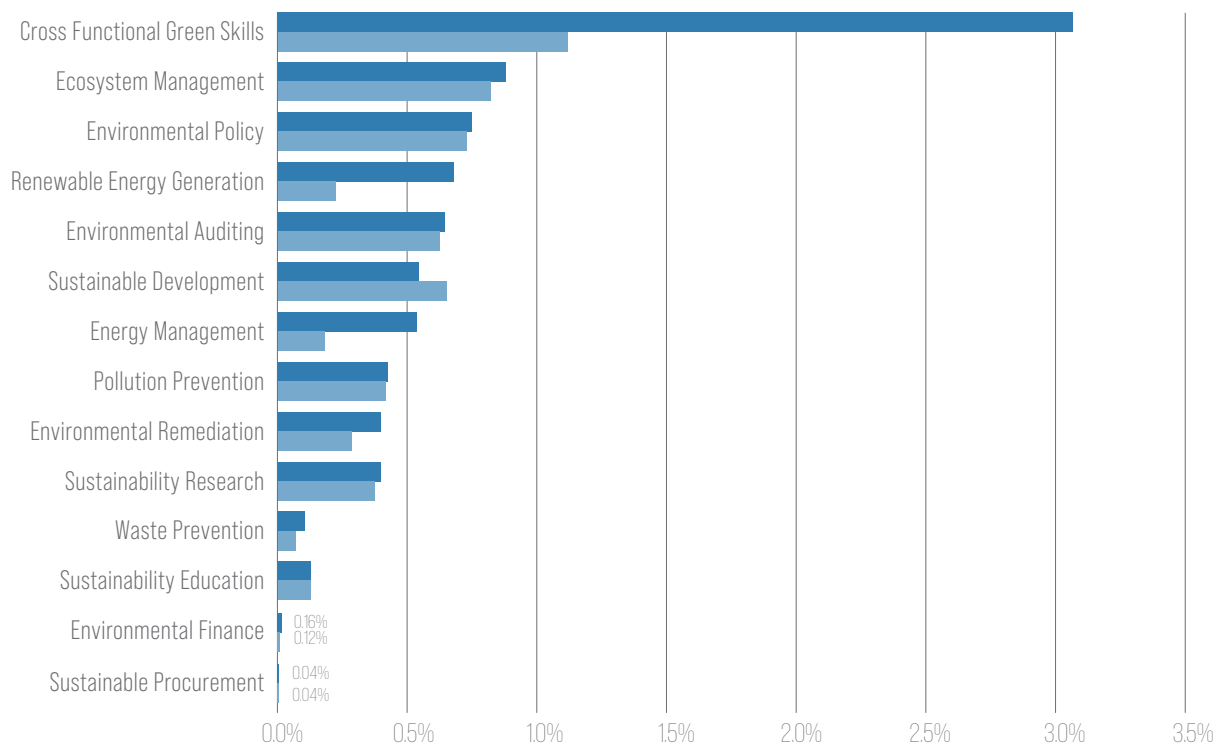
showcases an emerging skills gap for green and clean energy skills in particular. A LinkedIn global survey showed that only one in eight workers have a green skill, identified as a skill that enables the environmental sustainability of an economic activity (Khan, 2022), on their profile. This indicates that about seven out of eight workers do not possess one or more green skills, at a time when there is a rapidly growing environmental and economic need for these skills (LinkedIn Economic Graph, 2023, p. 5). Between 2022 and 2023, the share of workers who possessed green skills grew by a median of 12.3%, whereas the share of job postings requiring one or more green skills grew twice as fast, at 22.4% (LinkedIn Economic Graph, 2023, p.3). Already, there are clear indications that the demand for green skills is growing faster than

the supply of workers with such skills, leaving a gap that workers are currently unequipped to fill.

In a study conducted on Canadian occupation pathways, jobs with a high risk of automation and limited career mobility (referred to as high-risk, low-mobility jobs) were studied across the country regarding their potential for a green transition. It was found that with six months of specified skills training, 20.2% of the 1,472 occupation transition pathways can be realized (Sonmez et al., 2022, p. 9). When this skills training is expanded to one year, this number triples to 57.7%, allowing workers to double their options for transition pathways (Sonmez et al., 2022, p. 9). Moreover, if workers can dedicate three years of training, just under 80% of possible transitions to

### SHARE OF LINKEDIN MEMBERS WITH AT LEAST ONE GREEN SKILL FROM EACH CATEGORY

Median across all countries



[LinkedIn Economic Graph, 2023, p. 5].



green jobs are feasible (Sonmez et al., 2022, p. 9). Skills training can directly lead workers in industries that might be shrinking to those in the clean energy sector. With more skills training, more job transitions open up for workers, with one year of skills training leading to the most opportunity with the lowest level of time committed. Unfortunately, access to skills training is not equitably accessible for workers. Approximately two in five workers have been offered skills training from their employer, with training normally only given if an employer thinks the worker already possesses adequate experience and skills (Sonmez et al., 2022, p. 18). The majority of training opportunities offered to workers are given to those with high levels of formal education, often at the master's level and beyond, leaving those with limited formal education or transferable skills with limited on the job training opportunities (Sonmez et al., 2022, p. 18). Reskilling and upskilling can often take a good amount of time and resources, such as paying for education or training programs or foregoing income while training (Sonmez et al., 2022, p. 18). Ultimately, it is evident that reskilling or upskilling creates huge opportunities for transitions to green jobs, but it remains inaccessible and therefore not viable to the majority of workers.

The clean energy industry is currently comprised of an aging labor force (International Labour Organization, 2022, p. 86). Similarly, within the oil and gas sector, more than 20% of workers are over the age of 55, whereas only 4% are between the ages of 18 to 24 (Czako, 2020, pg. 42). With an aging workforce comes the possibility of skills, knowledge, and abilities being lost as people retire. Because of this, young people need to be considered when discussing pathways to a clean

With six months of specified skills training, **20.2%** of the **1,472** occupation transition pathways can be realized

(Sonmez et al., 2022, p. 9)



energy transition. It is known that young people are more concerned with equality, purpose of work and are generally more tech-savvy compared to older generations (Czako, 2020, pg. 42), and with their unique skill sets, young people should be empowered to lead change in the industry (Elmasllari, 2022). Failing to employ young people as workers in the clean energy transition due to an inadequate assessment of their skillset or experience can lead to bottlenecks in progression, which has already been seen in adjacent sectors like the construction industry (Czako, 2020, pg. 38). Many of the prevalent skills required to work in today's energy sector will also be essential for the clean energy solutions of the future. A workforce composed of diverse individuals who are trained in green skills and share the same employment values as young people will play a crucial role in implementing existing technology solutions, creating new clean energy technologies, and encouraging industry-wide transitions in the energy sector as a whole (Mishra, 2023). The following section will explore youth perspectives on their role in the clean energy sector, the skills they possess, and the common barriers they may face in finding an energy sector job.

# What does the existing research say on youth perspectives in Canada on accessing jobs in the clean energy sector?

Young people want to work in green jobs. In a study done on youth in the Asia Pacific region, over three-quarters of youth responded that they would like to work in the green economy in the next 10 years (Student Energy, 2022). In the United Kingdom, it is reported that young people have a negative perception of oil and gas production, with young engineers highly favouring jobs in clean energy as opposed to oil and gas (Pozniak, 2021). It is clear that youth across the world are prioritizing climate justice when planning their career paths.

Young people want to work in the clean energy industry specifically. In a study of 312 university and college students across Canada, 43% indicated that they are interested in a career in the green economy (Clark & Matthews, 2023, p. 59). Similarly, in a 2023 study conducted by Student Energy on energy transition skills, 38.87% of youth respondents indicated they wanted to work in the clean energy sector or a job that supports the energy transition, and 41.5% of respondents said that working at a renewable energy company was their

ideal job (Student Energy, 2022). That said, there appears to be an awareness gap of just what these occupations entail and how to get into the industry in general. One-fifth of students surveyed by the Information and Technology Communications Council indicated they believe they would not be able to find entry-level jobs in the clean energy industry (Clark & Matthews, 2023, p. 59). And in Student Energy's survey,

36.55% of respondents indicated that while they are interested in energy transition work, they do not know what jobs exist or how they can get into the field (Student Energy, 2022). Fear has also been cited as a central concern for youth and other workers in general who are hoping to enter the clean energy sector. This fear of not knowing what clean energy jobs would look like and the instability of a new, rapidly growing industry can be a disincentive for youth interested in the sector (Sonmez et al., 2022). Youth and other workers are also not confident that there will be the support they need from various levels of government to make the smooth transition into the clean energy industry (Gordon, 2023, p. 9). The

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**41.5% of youth said that working at a renewable energy company was their ideal job**

Energy Transition Skills Project, study conducted by Student Energy

literature shows clear trends of young people's desire to work in the clean energy field, but this is hindered by multiple barriers to entry.

Additionally, young people do not feel equipped with the skills they need to embark on their ideal green career path. According to the World Economic Forum, more than half of youth who were surveyed globally felt inadequately skilled for the jobs they were interested in attaining in the next 10 years (World Economic Forum, 2021, p. 4). While this may be true for some careers in the clean energy sector, the industry is more encompassing than many youth may know. Young people may be able to apply the skills they already have to some jobs in the clean energy sector and can be easily upskilled for certain other positions of interest to them.

Unfortunately, there is limited research on the exact skills that youth entering the clean energy industry have. While the clean energy labour market is wide, encompassing many different jobs and careers, there has been little research conducted on the skills youth need when entering the sector. There is a highlighted gap between the skills young people have and those that industry actors are looking for (Clark & Matthews, 2023). That said, the existing literature fails to address this mismatch of skills needed to work in the clean energy sector.

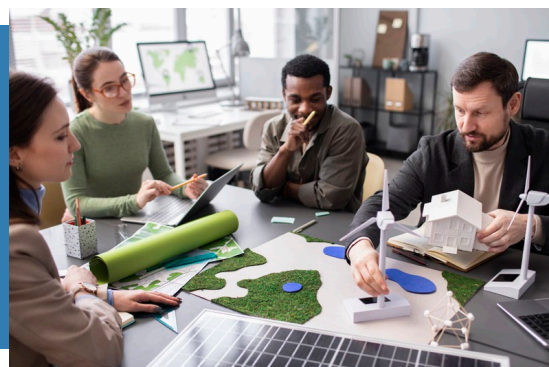
## What skills are industry actors looking for?

There is existing literature on the skills industry actors are looking for, but this data does not focus specifically on the Canadian context or youth. Much of this data is focused on the “green economy” as a whole, encompassing but not providing the unique picture of the clean energy labour market. In an ECO Canada report, research was conducted on the top skills sought after by employers in the green economy, including jobs in clean energy. The top five skills employers look for are communication, collaboration, project management, report writing, and attitude and professionalism (ECO Canada, 2021, p. 8). The top five most sought-after technical skills were policy and legislation, industry knowledge, sustainability, site assessment and reclamation, and climate change (ECO Canada, 2021, p. 8).

LinkedIn has conducted research, using artificial intelligence, of their global users on skills needed for workers in the clean energy sector, as well as clean energy professionals. At the top of both lists were technical skills, including design, installation, operation, and maintenance of various types of technology, which are often very specialized skill sets (LinkedIn, 2023a). Besides technical skill sets, communication, business, ethics, innovation, and soft skills were also listed in the top skills categories for all clean energy

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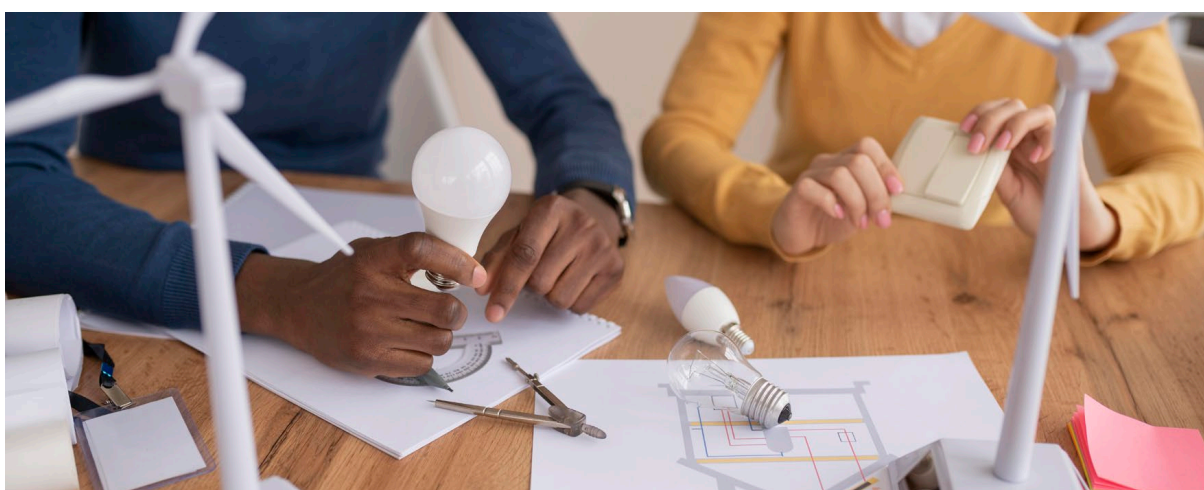


positions (LinkedIn, 2023a; LinkedIn, 2023b). This included skills such as collaboration, project management, adaptability, finance skills, entrepreneurship, privacy, negotiation, media competency, and adaptability. This range of skills is wide-reaching and showcases the diversity of jobs that support the clean energy labour market.

While some workers will need specific technical skills for their energy sector job, many will not. It is reported that technical skills alone are not enough to thrive in the renewable energy sector (LinkedIn, 2023a). Many workers feel that soft skills are what put them above and beyond in the eyes of employers, as is soft skills such as the ability to adapt and learn that are foundational in the industry (Clark & Matthews, 2023, p. 46). It is when multiple skillsets are paired together that one can potentially access more jobs in the clean energy industry (Clark & Matthews, 2023, p. 46). For example, the clean energy sector is quite project-based

and thus requires more workers with project management experience. Project management courses and credentials are highly in demand for people entering the clean energy sector (Clark & Matthews, 2023, p. 63). Project management skills bridge the gaps between soft and technical skills. Some projects will require workers to have skills such as technology installation or software skills, but could not be effective without relevant soft skills, such as leadership and organization.

There is an emphasis on skills needed for the clean energy transition that are transferable, meaning that many youth may already have skills employers are looking for, even if they do not have experience in the clean energy field. Five commonly sought-after transferable skills include problem-solving, which is needed in jobs such as engineering, supply chain management, and project management; collaboration, required in a relatively new and rapidly growing industry; analytical thinking, needed for energy analysts, risk analysis, and data-driven research; an innovation mindset,



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[LinkedIn, 2023]

required to rethink and create new technologies and systems; and, a sustainability mindset, which underlies many of the theories and technologies of the clean energy transition (ENEL North America, 2022). There is a need to connect youth with these skills they've already developed, with employers or training programs that can launch young people's careers in clean energy.

**Globally, 81% of workers who transition into green jobs have had some prior green job experience or have some green skills**

[LinkedIn Economic Graph, 2023, p. 6]



## What barriers do youth experience getting into the field?

Youth in particular experience many barriers to entering the clean energy labour market. In a study conducted on youth perspectives in Canada on the labour market in general, barriers to the workforce included a scarcity of entry-level jobs, salaries that are not high enough for the cost of living, lack of access to professional networks, and a lack of career development opportunities (Canadian Heritage, 2021). Furthermore, skill-building opportunities are often unpaid, such as career development courses or internships,

making them inaccessible for many youth (Canadian Heritage, 2021). Globally, 81% of workers who transition into green jobs have had some prior green job experience or have some green skills (LinkedIn Economic Graph, 2023, p. 6). Youth are not as likely as older generations to have already had a green job, therefore, it is harder for youth to attain green jobs without green skills development opportunities. These reasons, among others, make it systemically more difficult for youth to enter clean energy jobs.

In a study conducted on high-risk, low-mobility workers' perspectives on transitioning to clean jobs, barriers to exploring transitioning to green jobs was studied. Out of 500 respondents, the highest perceived barriers were lack of specific skills needed to succeed, lack of retraining time, lack of information about the labour market to know if a transition would guarantee them a good job, and lack of financial support to facilitate a transition through training (Sonmez et al., 2022, p. 17). These identified barriers can be applied to the clean energy industry more specifically, and provide a good picture of what some of the barriers are in the green jobs transition overall.

Youth need to be informed, supported, and encouraged through their search for jobs in the the clean energy transition labour market that was not designed for them to find success in. Youth also need to be informed of their job options, have accessible and relevant labour market information, and receive support for entering and continuing through sustainable careers in clean energy (Gordon, 2023). Part of this responsibility lies in young people themselves to stay informed and continue to develop skills. However, much more of this responsibility lies in industry actors and governments to break down these barriers.

## Are there demographics of youth in Canada who experience unique barriers?

While youth in Canada experience similar barriers to entering the clean energy labour market, there are unique barriers for underrepresented youth in the clean energy industry. In Canada as of 2019, 31.3% of the clean energy labour market are women, 68% are men, 29.3% are immigrants, and 18.4% are visible minorities (Canadian Centre for Energy Information, 2022). This means that the energy workforce is very white, and very male, with the majority of workers being non-immigrants. Women in the energy sector will continue to be disproportionately underrepresented in the clean energy labour market unless there are measures taken to promote their access to skills development and jobs (International Labour Organization, 2019, p. 10). Additionally, men in mid-skilled occupations that are male-dominated, such as oil, gas, and construction workers, will be a large population that could participate in reskilling and upskilling to enter into the clean energy labour market (International Labour Organization, 2019, p. 10).

Notably, 4.9% of overall energy sector workers are Indigenous people (Canadian Centre for Energy Information, 2022). Yet, Indigenous people account for 6% of the clean energy workforce, showcasing that they make up a large demographic of workers in the clean energy sector (Cuenco, 2022, p. 18). Indigenous people are well-positioned to lead and direct the clean energy transition and maintain knowledges essential for clean energy to succeed. That said, systemic barriers to accessing jobs, such as generational traumas, ongoing colonialism, and anti-Indigenous racism persistent in Canada

need to be taken into consideration and further reconciled to improve Indigenous representation in the clean energy sector labour force.

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[Canadian Centre for Energy Information, 2022]



Regionally, some areas across Canada are better positioned to participate in the clean energy transition than others. Nunavut, Yukon, and the Northwest Territories combined have only 1% of Canada's current environmental workers, as of 2021 (ECO Canada, 2021, p. 29). Yet with their small population size taken into account, they have the largest proportion of environmental workers to total workers of all the provinces and territories, meaning that the territories have workers who are more interested in the green economy than Canada's average province (ECO Canada, 2021, p. 29). There is both more interest and potential in the North to involve youth in the clean energy transition. Within

In Alberta, the **clean energy sector jobs are projected to grow by 164%** between 2020 and 2030, the largest projected growth in any jurisdiction in Canada (Cuenco, 2022, p. 11)



northern, rural and remote communities, there are also fewer employers and technologies on average, and limited consistent access to the internet, making accessing the clean energy jobs market more difficult (Canadian Heritage, 2021, p. 60). This can act as another serious barrier when ensuring the transition to clean energy is just and accessible. Atlantic Canada, including Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland and Labrador, is also a region that will have limited options for transitions to green jobs, including clean energy, without support from industry and governments.. This region has lesser options for workers to transition from high-risk, low-

mobility jobs to green jobs due to the structure of its economy and the projected green occupations in the region (Sonmez et al., 2022, p. 11). In Alberta, the clean energy sector jobs are projected to grow by 164% between 2020 and 2030, the largest projected growth in any jurisdiction in Canada (Cuenco, 2022, p. 11). This means that Alberta will be a key region for training, reskilling, and upskilling programs, and that intentional supports are needed for youth to enter the rapidly growing workforce. Barriers to employment in the clean energy sector vary regionally, meaning supports should be intentionally planned on a geographic basis to ease the transition for workers.

# What does the research say on career development, workforce transition support, and policies currently in Canada to support youth entering the clean energy industry?

To date, there has been some progress on workplace transitions, reskilling, and career development support in Canada through government policies and programs, as well as through non-profit organizations and energy industry actors. Yet, it is evident that more still needs to be done to facilitate a smooth, rapid transition to clean energy that includes and centres youth. According to a report from the Canadian Labour Congress and the Pembina Institute, there will need to be about \$275 trillion in both private and public spending to reach net-zero by 2050 (Krishnan et al. 2022). This indicates that public and private sectors in Canada will need to invest their time and money to help develop technologies and reskill workers.

There is some existing research outlining the policies and programs needed to facilitate a just transition for current energy workers, and young people, to enter into the clean energy industry. Throughout the existing literature, it is clear that collaboration between businesses, post-secondary institutions, and governments is a necessary complement to this transition to ensure that youth and other groups are considered and adequately supported along the way (Guldimann & Powell, 2022). In addition to cross-sector collaboration, support systems such as on-the-job training, paid internships, and subsidized education provided by employers can help reduce barriers to entry for young people interested in an energy sector job (Sonmez et al., 2022). Moreover, providing skill-building workshops within the

According to a report from the Canadian Labour Congress and the Pembina Institute, **there will need to be about \$275 trillion in both private and public spending to reach net-zero by 2050**

(Krishnan et al. 2022)



community is another way to improve access to workplace transition plans that require reskilling (Canadian Heritage, 2021, pg. 61). Allowing youth to stay in their communities, where they may have access to culturally relevant skills training and may feel safer, would allow for deeper learning and encourage more youth to participate in the training, thus increasing their likelihood of succeeding in attaining the energy industry job they were interested in. Furthermore, increasing access to labour-market information, such as real-time data on the transferable skills needed for certain roles, as well as showcasing essential information regarding the job itself, would also be a beneficial addition to these transition plans as they provide the necessary direction and encouragement for youth to apply for roles



that they are both interested in and qualified for (Sonmez et al., 2022, p. 19). This would be the responsibility of governments and industry actors alike to ensure that there is constant communication and dissemination of information on workforce needs and gaps. For youth and workers, adopting a mindset of constant learning will be essential in the clean energy transition (Guldimann & Powell, 2022). As the energy sector, and subsequently, the labour force, goes through rapid changes necessary for a just transition, reskilling and upskilling will be an inevitable facet of career development within the industry. Young people are responsible for keeping this in mind as they apply for jobs that support the dynamic clean energy transition.

## Clean Energy Transition Support Policies and Programs in Canada

Within what is currently known as Canada, there are some policies and programs in existence aimed at supporting youth skill-building and easing the clean energy transition for workers.

To achieve national net zero targets, Canada is showing increased support for workers going through labour transitions within the energy sector. The Sustainable Jobs Act was introduced by the Government of Canada in June of 2023 and it is slowly making its way through Canada's Parliament. This act, Bill C-50, would create a government agency dedicated towards sustainable jobs, introduce sustainable jobs plans every 5 years, and set-up an independent advisory body made up of workers, communities, and industry to recommend policies and programs to support a just transition (Rougeot, 2023). While this is a good start, and a sign that the Government of Canada is recognizing its role in supporting workers and communities in the energy transition, many labour and environmental groups do not believe the legislation is strong enough (Raycraft, 2023). Within this act, there is no set definition of sustainable jobs, and there is room for greenwashing, delaying on climate action, and disregard for Indigenous rights (Rougeot, 2023). As this legislation develops and is hopefully enacted, it is expected that this



**Canada's Sustainable Jobs Act (Bill C-50) aims to expedite a just transition to clean energy. It proposes a dedicated government agency, five-year job plans, and an advisory body to guide policy and programs, contributing to achieving national net zero targets.**

(Rougeot, 2023)

sustainable jobs plan will address these issues and lay out a comprehensive path to net zero, with support for workers and youth who remain central to the transition.

**The 2022 Inflation Reduction Act in the United States includes funding for creating green jobs. In the first six months, 100,000 new clean energy jobs have been created. The goal is to increase this number to nine million by 2032.**

(Climate Power, 2023)



The Government of Canada has offered a few skills development programs for youth interested in clean energy and green jobs. The Youth Employment and Skills Strategy is designed to partner youth with green job openings, providing funding to environmental industry actors to support youth positions and allowing them to build skills on the job (ECO Canada, 2022, p. 11). The Science Horizons Internship Program, hosted by Environment and Climate Change Canada, aims to partner youth with job placements in STEM fields, with placements specifically in the clean technology sectors (ECO Canada, 2022, p. 12). Canada's Digital Skills for Youth program, hosted by Innovation, Science, and Economic Development Canada, places youth with small-to-medium-sized employers in areas where they

can develop digital skills (ECO Canada, 2022, p. 12). While many of these programs provide placements with clean energy industry actors or areas where they can develop transferable skills, there is a lack of focus specifically on the clean energy sector.

Outside of the Federal Government of Canada, some local governments and civil society organizations have been developing programs to support youth in the clean energy labour transition. In Alberta, the Town of Drayton Valley and the University of Alberta established the Zero-Fee Education Initiative in 2021. Drayton Valley was an oil-producing town and saw the boom and bust of oil production as unemployment jumped by 80% in recent years. To address the high unemployment rate, the town and university partnered to introduce an economic recovery initiative to bring cost-free education into the community to retrain workers and students (Cuenco, 2022, p. 19). This has allowed people to gain new skills in areas of the economy where there are persistent gaps while also allowing them to remain located within their community. As the first program of its kind in Canada, the Zero-Fee Education Initiative provides the foundation for more programming like this to come to communities where many workers will have to reskill or upskill to maintain employment in their sector. Civil society organizations have also been leading the way in creating programs for youth and workers to enhance their skills. Energy Safety Canada has created a project called Skills Match - The Energy Fit. Combining career support and skills development with virtual reality and games, this program helps workers identify their existing skills and match them with career paths that align with their skills and interests (Cuenco, 2022, p. 11). Meeting people where they are at whilst allowing

them to explore their options in the clean energy field makes this program an important showcase of what is possible in reskilling and upskilling for the clean energy transition.

The clean energy labour transition is not a uniquely Canadian phenomenon. Countries and nations around the world are supporting workers, to varying degrees, in the transition of labour from oil and gas to clean energy.

There is much to learn from the successes of programs and failures of inaction that can be seen in other countries around the world. Global success stories of supporting workers through the energy transition are often hand-in-hand with comprehensive government structures for green skills development (Krell et al., 2021). The smoothest transitions are seen when governments direct resources to help workers develop the skills they need and ensure that jobs are available for those skills generated.

Looking at economies most similar to Canada, we can see programs and policies in the United States and the European Union to support workers transitioning to clean energy jobs. In the United States, the recent Inflation Reduction Act in 2022 allocates funding towards green jobs. It is estimated that within its first six months, the Inflation Reduction Act led to the creation of 100,000 new clean energy jobs, with the potential for this to expand to nine million by 2032 (Climate Power, 2023). The United States has also implemented the American Climate Corps, which will be opening up 20,000 youth positions in skills-based training placements for climate-resilient

**In the United Kingdom, their Ten Point Plan and Net Zero Strategy have incorporated a robust job market planning and skills development strategy, further contributing to their goal of creating two million green jobs in the country by 2030**

*[Guldimann & Powell, 2022]*

and clean energy jobs (Garden, 2023). With no education barriers for entry into the program, and guaranteed well-paying jobs after the program, this is an initiative that will provide effective skills-based support to American youth. The United States is also taking measures to ensure that 40% of this program's beneficiaries will be disadvantaged communities. There is potential for a similar program in Canada, which would connect young people

with the green jobs they are interested in while also providing skill-building opportunities to benefit green industries (Sanders, 2023). A Private Members Bill in Canada's Parliament was recently introduced by MP Laurel Collins to potentially bring a similar Youth Climate Corps program to Canada (Collins, 2023).

In the United Kingdom, their Ten Point Plan and Net Zero Strategy have incorporated a robust job market planning and skills development strategy, further contributing to their goal of creating two million green jobs in the country by 2030 (Guldimann & Powell, 2022). While skills training for workers is essential for the overall economy and supporting youth entering the clean energy labour market, it is also of major benefit to employers to invest in their workers through skills training. In a 2020 World Economic Forum report, on average, employers expected to offer reskilling or upskilling training to 70% of their employees by 2025, hoping to bounce back from impacts of COVID-19, with 66% of employers expecting to see a return on their investment into workers within one year of skills training (World Economic Forum, 2023).

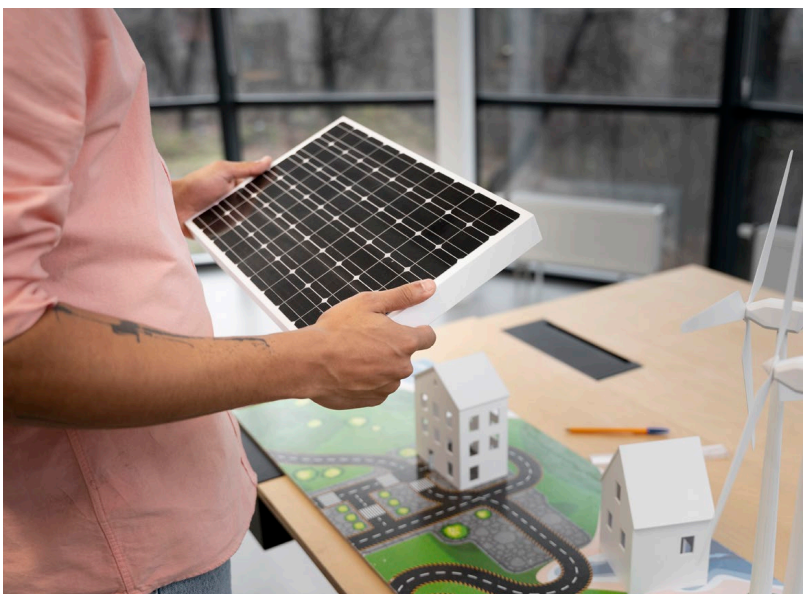
## What is the role of governments in closing the clean energy skills gap?

All levels of government have a major role to play in ensuring that youth are supported through the clean energy transition. Many of the current policies and programs that support youth skill-building are happening at the regional level, with civil society organizations attempting to fill the gaps in youth skill-building. Around the world, national policy coordination for green skills development is rare, with the majority of countries failing to implement comprehensive strategies for skills development and adequate monitoring of policies if they are implemented (International Labour Organization, 2019, p. 21). The Government of Canada needs to play a role in developing national coordinated policies to ensure that green skill-building can occur in ways that are accessible to youth and support national plans for a clean energy transition. A national skill-building strategy could work by designing skill development programs with youth input, structured around the types of skills youth want to acquire as well as those that are needed in the labour market (Canadian Heritage, 2021, p. 62). Clear and

cohesive strategies for Canada's plans to achieve net-zero by 2050 will also need to be developed and shared with Canadians to facilitate a greater understanding of where and how the energy transition is expected to occur (Gordon, 2023).

## A Youth Climate Corps in Canada is something that many young people are showing interest in.

The literature also highlights the importance of labour market information on the clean energy transition and a labour market that is up to date and relevant (Cuenco, 2022, p. 14). Research, skills mapping across the industry and country, analysis of the labour market, and consistent public reporting on clean energy are all necessary components to getting youth and workers the updated data they need on the skills they need to develop and where the job gaps are (Elmasllari, 2022, p. 5). While research such as what this report aims to achieve is important for giving youth and industry the direction they need, it is important that consistent, comprehensive, and ongoing research is provided for youth to develop skills the clean energy industry is looking for.



**Clear and cohesive strategies for Canada's plans to achieve net-zero by 2050 will also need to be developed and shared with Canadians to facilitate a greater understanding of where and how the energy transition is expected to occur.**

(Gordon, 2023)

## What are the gaps?

Ultimately, the literature is showing that there are major gaps in the research for youth in the clean energy industry. There is a lack of research in what skills youth entering the clean energy industry have. This knowledge will be useful for exploring reskilling and upskilling pathways for youth, as well as information on how youth can market their transferable skills. There is a lack of research in which skills clean energy industry actors need in their workers, specifically for youth within what is currently known as Canada. This is essential in the planning of reskilling and upskilling programs, to ensure that the demand for skills in the industry is being met with the supply of skilled-youth. There is a lack of research into what barriers youth face when entering into the clean energy industry, and how these barriers differ based on demographics and

regions. This information is key to ensuring that youth, especially marginalized youth, are fully supported through the clean energy transition. Lastly, there is limited research on the role of industry actors in facilitating smooth transitions for youth in the clean energy transition. This is important to determine for ensuring that all parties within the energy transition know what their roles are and are held accountable to facilitating this transition equitably for youth.

Through the research conducted in Closing the Gap: Youth Skills in the Clean Energy Transition, we hope to provide the information and tools needed for youth, industry actors, and governments to work together to support youth in building the skills needed for the clean energy transition.



# METHODOLOGY





# METHODOLOGY

This project began with a literature review, starting off broadly on the topic of youth skills in clean energy. Literature was sourced both within Canada and internationally. Thirty-five sources were referenced in total, including reports from other national and international organizations, news articles, and journal articles. The literature was used to get a wider understanding of the topic and identify the gaps in the literature. From there, the research questions for this report emerged.

We then decided that for the purposes of this study, interview-based qualitative data would be collected and analyzed. Due to the story-based and nuanced data we wanted to collect, we decided upon semi-structured interview methods to collect this data, opting for more open-ended questions rather than closed-ended questions. We went through multiple iterations of research questions, settling on seventeen questions for youth participants and sixteen for industry actor participants, with a few that were the same for both sets of participants to have data to directly compare to one another.

To source youth participants, we first looked for connections within the Student Energy community. We posted a callout and application on social media, which collected 50 responses, from which we selected participants using a scoring system. We asked partner organizations within Canada, such as Iron and Earth and Indigenous Clean Energy to circulate the callout for participants in their network. In order to fill gaps in our target criteria of participants, based on demographics data such as location and gender, the last step was reaching out to youth on LinkedIn who met the outstanding criteria for participants. In total, we interviewed 50 youth participants.

A similar process was used to source industry actors to interview. We aimed to find a mix of non-profit or youth- and worker-centered organizations, as well as for-profit employers. The questions asked of each group were similar, but slightly different based on if they were an employer speaking to their own practices or an organization speaking to trends they see in the industry. Overall, four partner organizations and six industry actors were interviewed for this project. Each of our partner organization representatives were involved directly with clean energy skills training, and industry actors were involved in training or were the heads of their respective companies. These participants were sourced through a similar callout on social media and individual outreach to target companies, aiming to get a wide range of sizes, locations, and specialties in the clean energy industry.

At the recommendation of Student Energy's Interview Specialist and in order to obtain a bigger picture perspective on the issues discussed, we also conducted interviews with two Indigenous Knowledge Keepers, whose reflections are included towards the end of this report.

Next, the interviews were hosted. Two interviewers conducted all 60 virtual interviews in February and March over Zoom, capturing the entire conversation with a recording and transcript. Each interview lasted between thirty minutes to an hour, with the average interview taking approximately fifty minutes.

Once all the data had been collected, we cleaned and reduced the data to make it accurate and manageable. AI software captured the majority of conversations, but transcriptions were reviewed alongside the recording to make sure all words were true to the interviewee. All irrelevant conversations, the set-up of the conversation, and the concluding remarks of the interview were removed, leaving the team with the raw data.

Raw data was then uploaded into the qualitative data analysis software, MAXQDA. A brief profile was made for each interviewee, and self-identified demographics variables were added to each participant's interview transcript.

To code, we used an inductive coding system. This was used as we wanted to pull the data out into themes to make sense of, not impose preconceived codes onto the data set. Responses to different questions were initially grouped into general themes from the interviews, with overall trends being pulled unrelated to specific questions as well. Then, the data was analyzed a second time, broken down into further subcodes, to ensure that the codes were accurate, not repetitive, and relevant. Overall, just under 3000 coded segments were organized into 196 codes and subcodes.

Then, each of the coded segments were analyzed to see which quotes portrayed an accurate representation of a few perspectives, or provided a unique viewpoint on a question. Quantitative analysis was also derived from the data by comparing the frequency of themes or answers to questions. Quotations and quantitative analysis of the data were brought together to structure the overall narrative of this report. We decided to include many direct quotations from youth, with their identities anonymized, to ensure their direct messages remained central to this report.





# FINDINGS AND ANALYSIS

# MAJOR FINDINGS

The key findings from these interviews are described below. In the following sections, these major findings are explained further and connected to the direct words of youth.

- **Youth find that communication skills and technical skills are the top skill sets** needed to get a job in clean energy.
- **Industry actors seek soft skills and communication skills as the top skill sets** in potential youth employees.
- When self-identifying, **youth's top skills are commonly soft skills, including adaptability, relationship building, project management, curiosity, drive, and self-awareness.** Other top skills include various energy technologies, data skills, public speaking, writing, critical thinking, climate communications, and networking.
- **The top skills that industry is looking for most commonly fall in the soft skills category, including a passion for clean energy and the environment, reliability, self-awareness, independence, teachability, and relationship building—**skills that are good foundationally and can be honed without too much professional experience. Other skills industry look for in entry-level positions include basic computer skills, active listening, communication skills, and trustworthiness.
- **Youth obtain their skills most commonly in jobs and post-secondary institutions,** but skills are also built through extracurriculars, hobbies, self-learning, pushing oneself out of their comfort zone, life events, or community knowledge.





- **Over half of youth feel it is very difficult to enter into the clean energy industry**, and a quarter felt it was moderately difficult, mostly due to unavailability of entry-level jobs, lack of connections, and not having enough experience. This can depend on who you are, how much experience you have when applying, and where you are applying.
- **Two-thirds of youth have held back from applying to jobs in clean energy** because they felt they did not meet skills requirements, experience requirements, or have the correct qualifications. While there were no significant differences on the basis of gender, youth who identified as Indigenous or racialized were more likely to hold back from applying to jobs than youth who were not.
- The **most common barriers identified by youth** entering into the clean energy industry are: employers looking for more experience than youth have; the costs of education and training; pay and benefits being too low in the industry; lack of entry level jobs; location of jobs; not having a technical background; and, not knowing where to search for jobs in clean energy.
- **General supports youth need in order to enter the clean energy industry are:** mentorship; more coordination and cooperation between energy industry, employers, educational institutions, and governments; training programs; current information about trends and the future of the clean energy industry; central spaces to look for jobs in clean energy; spaces for youth; and, more accessibility in the field.

- **Youth stated that the role of industry actors in clean energy is to:** build relationships and engage youth directly on campuses, in extra-curricular clubs, with youth focused associations, and by hosting youth focused engagements; create more entry-level jobs and hire youth; more co-ops and internships; more skills training opportunities; and, support workers as full people through encouraging work-life balance.
- **Youth stated that the role of academic institutions in clean energy is to provide:** greater job search supports; hands-on learning opportunities; accessible co-ops and internships; access to industry-desired certificates and micro-credentials; and a decreased importance on needing post-secondary degrees and certifications.
- **Youth stated that the role of governments is:** more funding for entry-level positions; more government-directed and -funded clean energy projects or programs; more funding for education; more funding for all forms of training needed for the industry; and, implementing employment policies to benefit youth.
- Overall, **about three quarters of youth believe that the clean energy industry offers promising career paths.** However, this percentage drops to 50% of low-income youth and 62% of Indigenous and racialized youth.
- All of the **industry actors interviewed agreed that clean energy is a promising career path** for youth.
- When asked about the **future of the clean energy industry in one word, two thirds of youth gave positive or positive but hesitant responses**, with some youth remaining skeptical or negative about the clean energy future.
- **Industry actors were almost all positive or positive but hesitant about the future of the clean energy industry**, and did not use any negative terms about the future of the industry.



Over half of youth feel it is very difficult to enter into the clean energy industry.

# Skills

Skills are often one of the first things brought up in an interview. They are requested on job applications, asked about by mentors, listed on resumes, and named on LinkedIn profiles. For the purposes of this study, **we defined skills as an overarching term for the knowledge, competencies, and experiences an individual uses to perform a specific task or job well.**

This can include manual, mental, and emotional activities, acquired through learning or practice.

For this study, we grouped skills into a few categories. We defined the following five skill sets below:

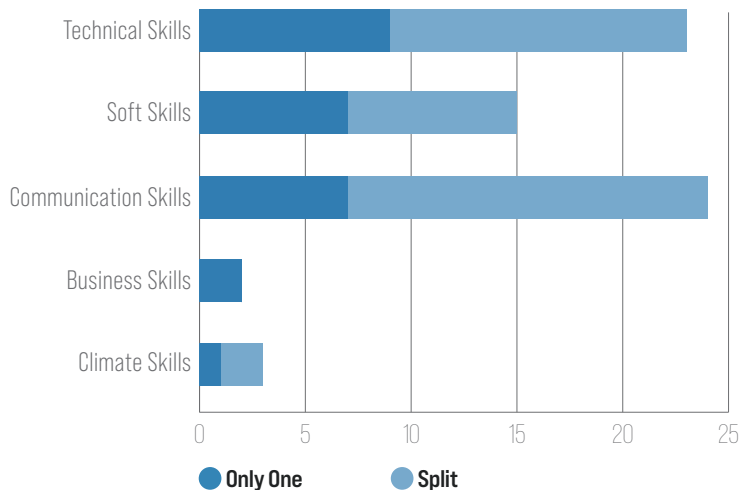
- **Technical Skills:** Having specialized knowledge or expertise required to use or operate certain technologies, tools, and programs to complete tasks and solve specific industry-related challenges.
- **Soft Skills:** Personality traits and interpersonal skills developed

throughout different life experiences that characterize one’s ability to interact and collaborate with others.

- **Business Skills:** The knowledge and proficiency needed to keep an organization running smoothly. Business skills include a combination of hard and soft skills to inform bigger-picture strategic planning to support an organization’s current and future needs.
- **Communication Skills:** Techniques used to effectively convey information, ideas, and feelings to another person or group of people, and being able to adapt the messaging depending on the context, audience, and situation.
- **Climate Skills:** Having a working knowledge of past and current climate challenges and the tools, policies, or practices needed to solve them.

## MOST IMPORTANT SKILL SET FOR YOUTH

What is the most important skill set needed for getting a job in clean energy?



*“I feel like it’s a five circle Venn Diagram.”*

**Youth Interviewee**

## Skill Sets

We asked the following question to both youth and industry actors: Which of these five skill sets (technical, soft, business, communication, and climate) do you believe is the most important for getting a job in clean energy?

*“At the end of the day, there’s many ways into the industry and I think it’s about finding your strength and really being able to sell that to an employer.”*

### Youth Interviewee

#### Youth identified communication skills and technical skills as the top skill set needed to get a job in clean energy.

Many youth reflected on their experiences looking for jobs, being in interviews, and getting into their first jobs that these were the top skill sets required. Youth noted that communication skills were important, not just within jobs while working with others and writing reports, but also for getting jobs through networking and interviewing. Those who indicated technical skills were often from a background that required some sort of engineering, science, or technology background. Many of the jobs sought after in clean energy are within this field

*“ [Communication skills] go into all of these skill sets, whether it’s technical, soft, business, or climate... It doesn’t matter if you have the skills if you can’t tell others about it.”*

### Youth Interviewee

of work, so technical skills were highly ranked amongst interviewees.

Soft skills were ranked as the third most important skill set, closely behind communication and technical skills. It was reflected by multiple youth that soft skills are harder to teach. Intentionally cultivating soft skills can be imperative to finding success searching for and starting in new roles.

Climate and business skills were ranked the lowest of these possible five skill sets. While many youth mentioned that they were helpful to have, they were not essential in helping to get a job in the clean energy industry. Business skills were noted as being useful for networking or being in specific jobs, such as clean technology sales, marketing, or accounting. Some of these skills were noted to be very transferrable, such as customer service and relationship building. Climate skills were ranked low as well, but many youth noted they were intrinsic to a lot of the roles they were applying for. Instead of it being a top skill set, these skills are baked into their general knowledge and passion for entering the field.

Many youth struggled to choose just one skill set to rank at the top—many combined skill sets when reflecting on the top skills needed to get into the industry. Nine youth ranked technical and communication skills together, and six ranked communication and soft skills together. This demonstrates the interconnection of these skill sets, and how **a variety of skill sets should be demonstrated to employers by youth looking for jobs in clean energy.**

We asked this same question to industry actors, and they had some slightly different results. **The highest ranked skill set identified by industry actors were soft skills, followed closely by communication skills.** Industry actors consistently mentioned soft skills as being the top skill set they looked for, as often, they were looking for someone who possessed skills that could make them a good fit for their

company or team, not necessarily someone who already possessed all the technical skills they would need. One industry actor mentioned reports from both RBC and Google that employers consistently rank technical skills lower than soft skills when looking for employees to join their teams, and this resonated with them in their position.

*“The funny thing is that it’s not always the person with the best skills... If they don’t have a good vibe, and I don’t think they’re gonna vibe with the team, then they just won’t be working with us, unfortunately.”*

**MOST IMPORTANT SKILL SET FROM INDUSTRY ACTORS**



Skill Set	Only One	Split	Total
Technical Skills	● 16.6%		16.6%
Soft Skills	● 16.6%	● 25%	41.6%
Communication Skills		● 33.3%	33.3%
Business Skills		● 8.3%	8.6%
Climate Skills			0%
Total			100%

**Industry Actor Interviewee**

Technical skills and business skills were ranked lower, but were still mentioned by some industry actors as being the top skill sets needed for getting a job in clean energy. For both of these employers, they mentioned these skill sets for their specific organization, noting that this might vary for other areas of the industry. Climate skills were not identified in the answers to this question as a top skill set.

It was also reflected that these are the top skill sets for entry level positions that youth are typically coming into. Further into one’s career, these skill sets might change in regards to what is most important for potential employees to have, notably mentioning technical skills as being more important later on in one’s career.

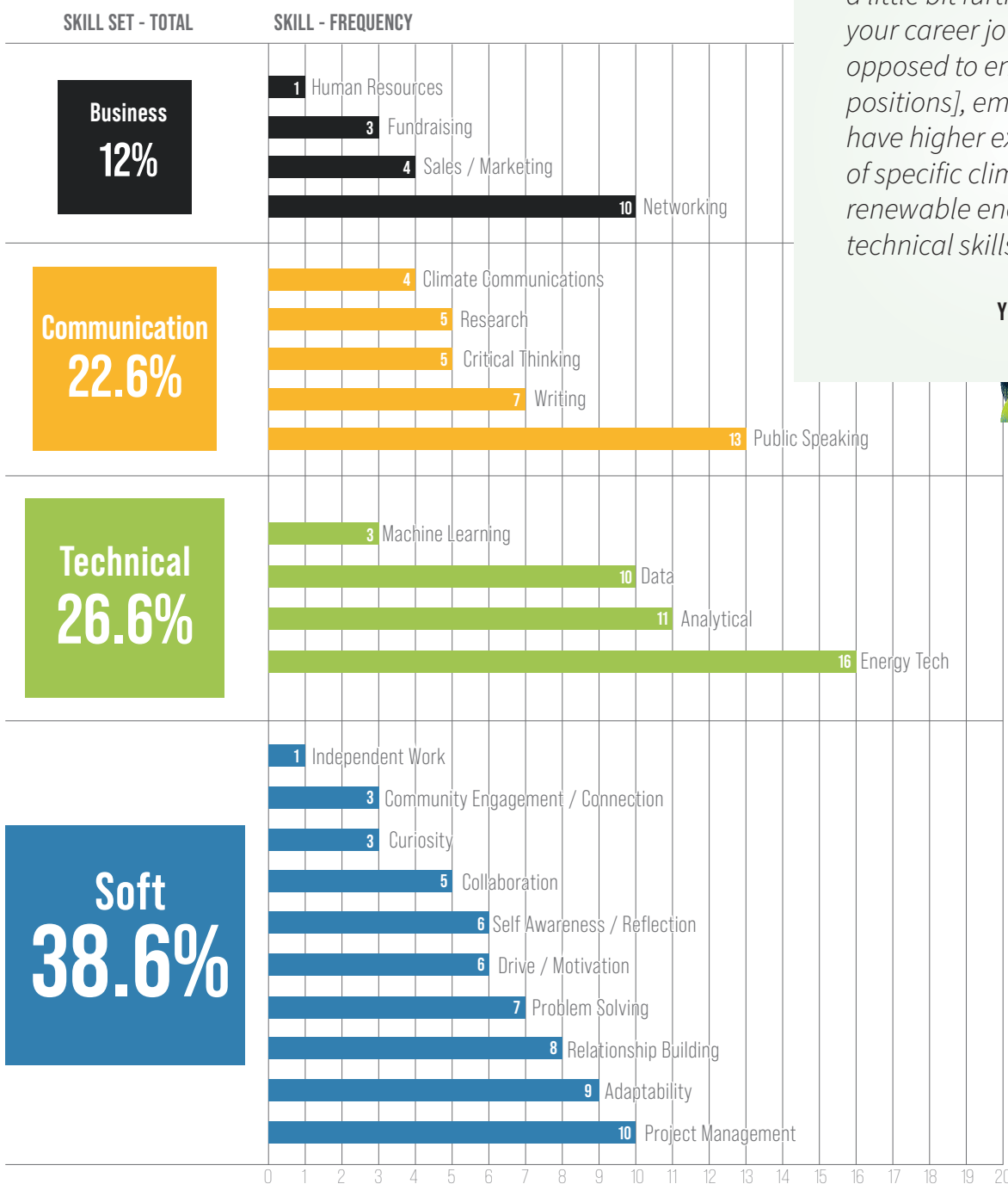
## Specific Skills

Beyond skill sets, **we wanted to get an understanding of what youth believe their top skills are, and what the specific top skills employers are looking for.** Each named skill was associated with the skill set it was most often

connected to by youth interviewees. Every youth interviewee mentioned more than one top skill that they possessed, often mentioning skills in a variety of skill sets.

## YOUTH TOP SKILLS

Skills that youth identified as their top skills



*“I think once you go a little bit further into your career journey [as opposed to entry-level positions], employers have higher expectations of specific climate, renewable energy or technical skills.”*

**Youth Interviewee**





In regards to their top skills, **youth most commonly mentioned skills that were classified as soft skills.** Next were skills that were technical, followed closely by communication, and then business skills.

*“[Youth need to be] adaptable, open to change, especially in this industry... things are changing and shifting, things could change any day.”*

**Youth Interviewee**

Within soft skills, youth mentioned project management, adaptability, and relationship building as the top skills most frequently. Project management was noted as a top skill by many youth in various areas of the industry, as much of the energy field is project-based. Adaptability was noted as core key, as the industry is still growing and changing. Many projects arise based on funding opportunities, so remaining flexible was seen as a key skill youth possess. Relationship building skills were also identified often in relation to community engagement, stakeholder relations, and networking.

*“I think curiosity is really important, genuine interest in learning and helping to shape those systems is important... [youth can show we are]excited about it.”*

**Youth Interviewee**

*“Knowing when to respect your own boundaries, and your own limitations [is a key skill].”*

**Youth Interviewee**

*“[One important skill is] the quest for self improvement. I never believe that I know everything... I still feel like there’s room to learn more.”*

**Youth Interviewee**

Another group of soft skills identified were self-aware, drive and motivation, and curiosity. When thinking of skills, these are sometimes not the first or most easy to identify. Yet 30% of youth interviewed identified one of these as a top skill. This is important to note, as the clean energy industry is one that is growing, innovating, and enhancing. Knowing oneself and one’s place in the industry, while simultaneously seeking to grow one’s knowledge and skills of the industry is an important skill youth can hone.

Skills that were technical were also identified quite often by youth as being top skills. Energy technologies were mentioned sixteen times. This included skills that were both broad and niche in their specific jobs, such as life cycle assessment tools, autoCAD, Helioscope, solar panel cleaning, nanotech, modeling software, measurement and verification, chemical synthesis, coding, electrochemistry, 3D printing, physics, and drilling engineering. While not all of these skills would be relevant to all jobs, many of these skills are what youth have been able to develop as some of their top employable skills.

*“Data analysis is a basic skill that you should have if you’re looking for a white collar job in the green energy sector. You don’t have to be a wizard at Excel or wizard at coding, but understanding data sets and how to sort things and add things up [is important].”*

#### Youth Interviewee

Data and analytical skills were also mentioned frequently, to varying degrees. While some youth mentioned it in their day to day work as a data analyst, others mentioned it in relation to just having the foundational knowledge of data and Excel.

*“A skill that is very useful is being able to clearly talk about environmental subjects. Sometimes it’s intimidating - you’re the youngest person in the room, and you have to explain, we shouldn’t be doing X or Y, because it’s not good for the planet - that in itself is a skill.”*

#### Youth Interviewee

*“First, master small positive climate messages, and then practice bigger explanations on why something is beneficial or not beneficial. The more you do it, the more confident you become. And we need more people who are confident and knowledgeable when they’re talking about climate issues.”*

#### Youth Interviewee

The top communication skills mentioned were public speaking, writing, critical thinking, research, and climate communications. While many of these go hand in hand, some may be more relevant for certain positions than others. Climate communications was a skill mentioned in connection with research, public speaking and writing, and intertwined with some technical skills as well. Having the communication skills to clearly talk about the industry, as well as climate change and the energy transition, can be a great skill for youth to develop. While specific climate skills were not mentioned in regards to youths’ top skills, climate communications was a prominent part throughout the entirety of the interviews.

*“Where I come from in Trinidad, we have a term for this and it’s called ‘links.’ You need to be able to link with someone to be able to get this position or have an opportunity.”*

#### Youth Interviewee

*“Networking has been my top skill in that sense and helped to actually get me in the space and get employed.”*

#### Youth Interviewee

Skills that were classified as business skills were not mentioned very often from interviewees. This main skill in this category of networking; 20% of youth participants identified this as a skill they possessed. As a top skill, the majority of youth who brought this up mentioned that it was this skill, alongside others, that really helped them to get to where they are. While combining parts of business skills, communication skills, and soft skills, this is an area that youth can practice and improve upon without having a position in clean energy.

### Top Specific Skill Industry Looks For

The data from industry actors again appeared to be different, with some similarities, in regards to the top skills they identified looking for in youth. The general frequency of the associated skill sets was the same as in the youth participants—soft skills appeared most frequently in response to this question, followed by technical skills, communication skills, climate skills, and business skills.



*“We’ve analyzed that when students or new graduates or youth struggle in the workplace, it’s usually not from the lack of technical skills, because this is something that employers often teach themselves. It’s because they’re missing some of those key, non-technical skills that are needed to perform the roles”*

**Industry Actor Interviewee**



Similar to how industry actors answered the questions on skills sets, many identified multiple soft skills as the top skills they were looking for. Skills like reliability, self-awareness, being independent, being teachable, and relationship building were all skills that were brought up by industry actors.

Many of the partner organizations we interviewed mentioned that according to their research, what they hear from their connections with employers, and general trends in the industry, it is the general “employable” soft skills that are sought after in entry-level or youth positions. Through our interviews, it is generally understood that many employers know that youth will not have as much experience or technical skills; employability for young people largely centers around foundational soft skills they bring to positions.

*“We don’t need a lot of specific technical skills, [we look for] just general employability skills.”*

### Industry Actor Interviewee

Other skills that were brought up more frequently were basic computer skills, such as Microsoft Word, Powerpoint, and Excel, as well as using artificial intelligence as a tool. Active listening and basic communication skills was also a top skill that employers mentioned as being essential to taking feedback and working within a team.

*“Practicing confidence, practicing networking, just engaging repetitively in building meaningful, and ultimately trusting, relationships is a skill.”*

### Industry Actor Interviewee

One of the most common skills sought after was a passion or interest in the environment or clean energy. Employers noted that they wanted potential employees to bring their own drive and passion to their teams, and demonstrate a dedication to being invested in the industry. This is something employers mentioned is part of the value of having youth on their teams. Youth often bring a unique passion and drive for creating a better climate and energy future, which is not always seen at the same levels in older generations. Leveraging this passion as a skill to demonstrate to employers is a significant advantage.

*“Passion—I think that what drives my industry and many in our industry is genuinely wanting to do good.”*

### Industry Actor Interviewee

One of the major takeaways from this question to employers is that many skills can be taught on the job—but some, especially general employability and soft skills like trustworthiness, reliability, and good communication, are the foundations of what employers are looking for.

## How Skills are Attained

Skills can be attained through a vast variety of means. Whether through formal education, learning on the job, hobbies, or life experiences, skills can be gained anywhere. Many skills are very transferable to the clean energy industry—it doesn’t matter where they are developed. Skills are built in all aspects of life, and skills built in a formal institution do not necessarily mean they are more concrete than others.

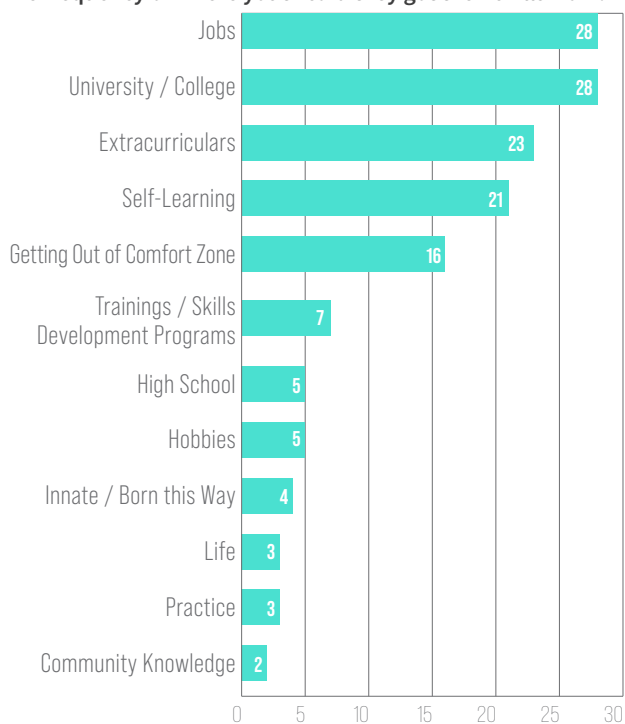
*“I think people actually forget that transferable skills apply to all realms of your life, not just your past work experience. Let’s say you’re a stay at home mom: you have amazing project management skills, communication skills, you can multitask, you can stay calm in stressful situations. Or, maybe you’re a student: you go to a bunch of climate rallies and you speak at them, you recycle in your home, you watched a bunch of webinars on microplastics -it doesn’t have to be a formal job experience to be useful and valuable [to skill-building].”*

### Industry Actor Interviewee

In this project, we asked youth where they developed their top skills from. Whether the skills they identified were those of collaboration or how to use AutoCAD, we were looking to see all the places that youth honed their skills.

### HOW SKILLS ARE ATTAINED

The frequency of where youth said they got their skills from.



The most common place for obtaining skills was tied between jobs and post-secondary institutions. This aligns with the general outlook on skills and how they were developed and enhanced. Post-secondary institutions, such as universities, colleges, and trades schools, can be a central spot for youth to gain skills relevant to the industry they hope to continue in. This can be an avenue youth can use to specialize their skills or gain transferrable ones for entering the workforce. This is not always the case, as some youth cannot access these spaces or develop skills in other ways. A few youth indicated that even though they attended university, they did not develop any of their top skills there—that was mostly done in the workforce.

Jobs are an obvious space to gain skills too. One youth interviewee reflected on how even if they were given the chance to practice using a modeling software in university, they would not have had an actual project to work on, with real building plans and working with contractors. Gaining skills on the job, such as learning new software or learning to be independent in a workspace, does not just have to be in the clean energy industry either. Many youth indicated that they developed their skills at some of their first entry-level jobs no matter what industry they were in.

*“I worked at McDonald’s for a year. Any of those skills to get you out of your comfort zone has been helpful, because I went from being a very shy kid, to being forced to speak to the public. You learn a lot of problem solving when you’re in some fast paced environments, learning how to keep your head above water, and how it feels to have a thick skin too.”*

**Youth Interviewee**

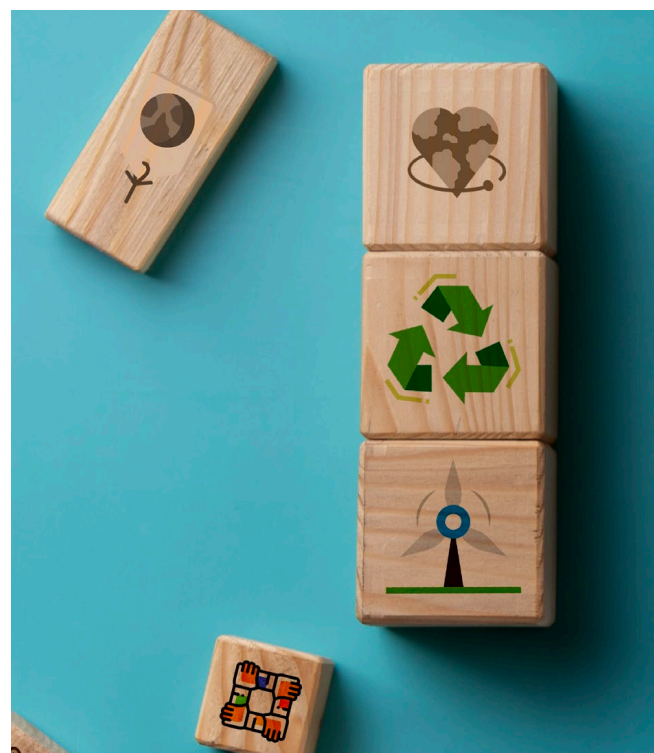
Extracurriculars and hobbies were also areas where youth developed their top skills. From piano lessons as a kid, to toastmasters in university, to playing sports, to joining a club on their university campus like Student Energy, many youth gained their skills through their passions and volunteer pursuits.

Self-learning and getting out of their comfort zone was a significant area of skills development too. Many youth reported that they successfully found training for various skills on their own. Some youth taught themselves how to code, or to use software, or read up on a certain topic.

It came up regularly that some youth felt like their skills were intrinsic and that they had always been there. This was especially true for soft skills and communication skills, such as independence or being a good public speaker.

Some of the youth attributed their skills coming from “life.” This category was all encompassing, containing things such as losing a loved one, or having children, or moving to a new country. Youth noted that life circumstances can push the development of certain skills, whether they’re for the industry or not.

One youth offered a thoughtful reflection on skills derived from skills coming from community knowledge and connections within the community. Having skills passed down through generations, or through connection with family, friends, and community members is very impactful.



*“You know what really opened my eyes -I actually applied to several jobs and kept getting the same negative responses. So, I started evaluating and asking what are the skills and experiences they need, and what are the skills I need to showcase and build? So, that was what pushed me to learn those new skills. Because if I had not applied for this job, I would have known that these are the skills needed in this industry.”*

**Youth Interviewee**

*“[Some skills are] gained through community knowledge and having an understanding of who you are and your teachings. I think those are skills that are passed down.”*

**Youth Interviewee**

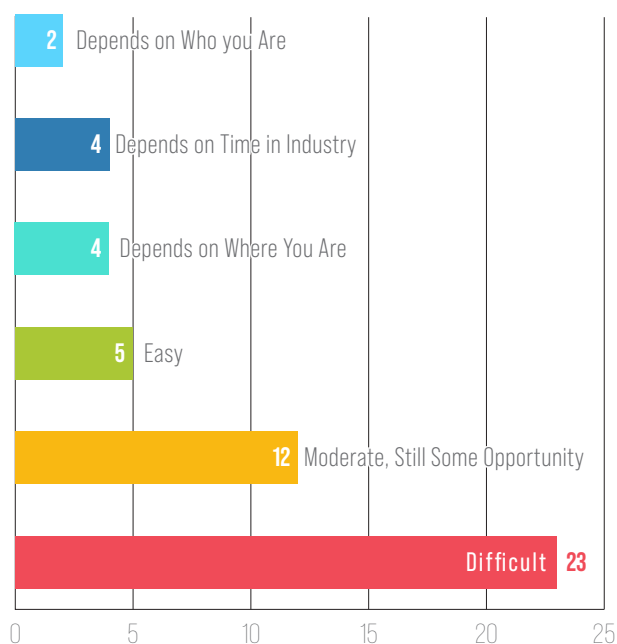
## Getting into the Field

For youth, entering a new field or coming out of any level of schooling without much relevant job experience is a challenge. One of the largest barriers identified by youth was being able to get their first job and get experience in the clean energy field. While a common experience for youth entering into any industry, many youth expressed increased difficulties based on the expectations employers had.

Only 5 respondents answered that it was easy, and also mentioned that they were lucky, or had privileges that many other youth hoping to enter the industry do not have. Some mentioned working hard to develop connections and relationships with people in the industry that they relied on to get their first job, and others developed their transferable skills to be in line with exactly what employers were looking for. Others said it really was just luck—applying for the right job at the right time.

### HOW EASY IT IS TO ENTER THE FIELD

How easy do you feel it is for you or other youth to find jobs in the clean energy industry in Canada?



*“It’s not easy [for youth to enter the industry]. It was for me, and I got honestly really lucky, it kind of landed at my feet... That’s a very, very rare occurrence. And although it was easy for me, the work that I had to do for it to become easy was hard work.”*

**Youth Interviewee**

When youth were asked the question “How easy do you feel it is for you or other youth to enter into the clean energy industry?” approximately half of the youth respondents answered “very difficult.” Reasons for these answers included there not being a lot of entry-level jobs available, not knowing where the jobs were, not having the connections yet, or employers looking for many more years of experience than they had.

Youth also included statements expressing that it really depends on who you are, where you are, or how much experience you have when looking to find a job in clean energy. Location was brought up, as it is harder in more remote areas to find jobs in energy. Being closer to cities, near big energy utility companies, or in energy-rich areas of the country were mentioned as factors

that make it easier to find jobs in clean energy. Who you are was mentioned as both being a help or hindrance to ease of access for clean energy jobs. Some youth mentioned that having Canadian citizenship and school or work experience was an asset for finding jobs, as many employers seem to want to hire those with Canadian experience over those without. Additionally, multiple youth mentioned that it is very hard to get your first few jobs in clean energy, but once you have that experience, it becomes a lot easier to get further jobs in the industry.

*“I would say certain demographics of youth struggle more than others [to get into the field]—low income, racialized youth, youth whose parents never had the opportunity to go to school previously.”*

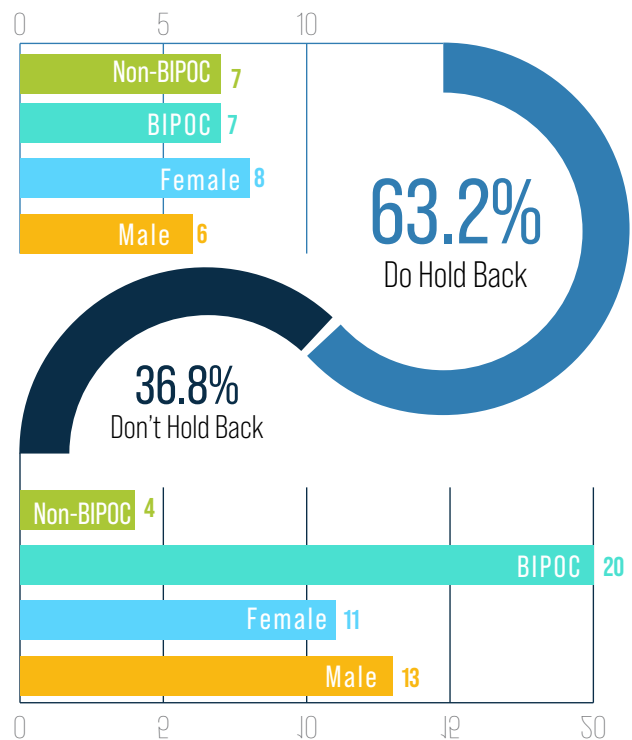
**Youth Interviewee**

Approximately a quarter of respondents answered it is moderately difficult—there are some opportunities out there, but they are hard to find or access. One youth cited that with the clean energy industry growing, there is an increase of jobs available, but the field is also growing in popularity with young people and older workers alike interested in joining the field.

Alongside this question, we also asked youth participants if they have ever held back from applying for a job in clean energy because they felt they did not meet the skills or experience requirements in a job posting. The responses varied; approximately two thirds of youth responded they have held back from applying for jobs in clean energy, and one third said they had not. Some youth did not respond to this question, as they had not gotten their jobs through applying or only had experience in academia thus far in their careers.

**HOLDING BACK FROM APPLYING TO JOBS**

Responses to the question “Have you ever held back from applying for a job in clean energy because you feel like you didn’t meet the skills requirements?”



Many reasons were cited as to why youth would hold back from applying to jobs. The most common reason was that youth did not feel like they had the skills that job postings and employers were looking for. The second most common reason was that youth did not feel like they had the right



amount of experience yet, where jobs would be asking for at least five to ten years of experience. The third most cited reason was not having the correct qualifications for job postings, ranging from a Certified Energy Manager qualification, a specific engineering undergraduate degree, a project management certification, or a PhD.

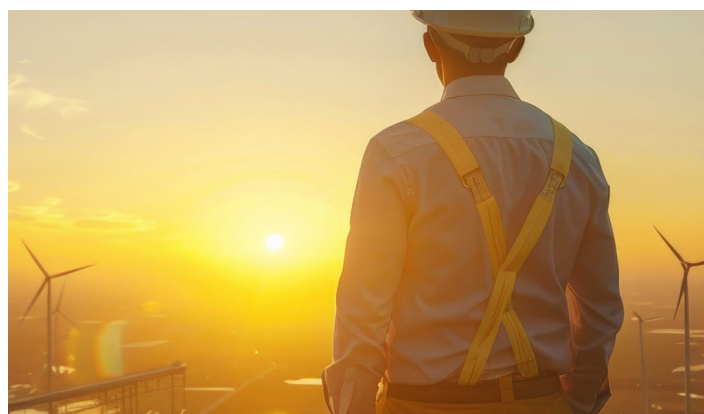
*“[Employers] always require some skills or qualifications that no entry-level person is going to be able to have, unless they have been looking at this one particular job since they were a kid and building just those skills alone.”*

#### Youth Interviewee



When looking at the answers from youth, we also determined that there were significant differences amongst the answers from different demographics. One statistic that youth also brought up was that, on average, men will apply for a job when they meet 60% of the requirements, whereas women will only apply if they meet 100% of requirements. Our data shows that there were no major differences between the answers of men and women in our study—many participants who identified as women stated that they purposefully apply to jobs they do not meet 100% of criteria for because they know of this statistic.

A key difference in statistics came from comparing youth who self identified as Indigenous or racialized, compared to those who did not. The data showed that the majority of



participants who identified as BIPOC did hold back from applying for jobs, compared to the majority of non-BIPOC participants who did not hold back from applying to jobs. This touches on some of the specific barriers that many BIPOC youth face—the need to achieve and showcase to employers more skills and experiences than non-BIPOC youth feel they need to show.

**Ultimately, the main piece of advice youth passed along in regards to this topic was to apply anyways. If you meet most of the requirements, or feel you can fulfill the role with your experiences and skills, apply!**

*“In recent years, I’ve seen more of ‘equivalent experience or equivalent competencies,’ those sorts of wordings that are more accommodating to different types of experience. So seeing things going in that direction helped me get over concerns that I would have had earlier in my job applying journeys and helped me just go for it.”*

#### Youth Interviewee



# Barriers

*“There’s just so many barriers. How do I make the time to share all of them?”*

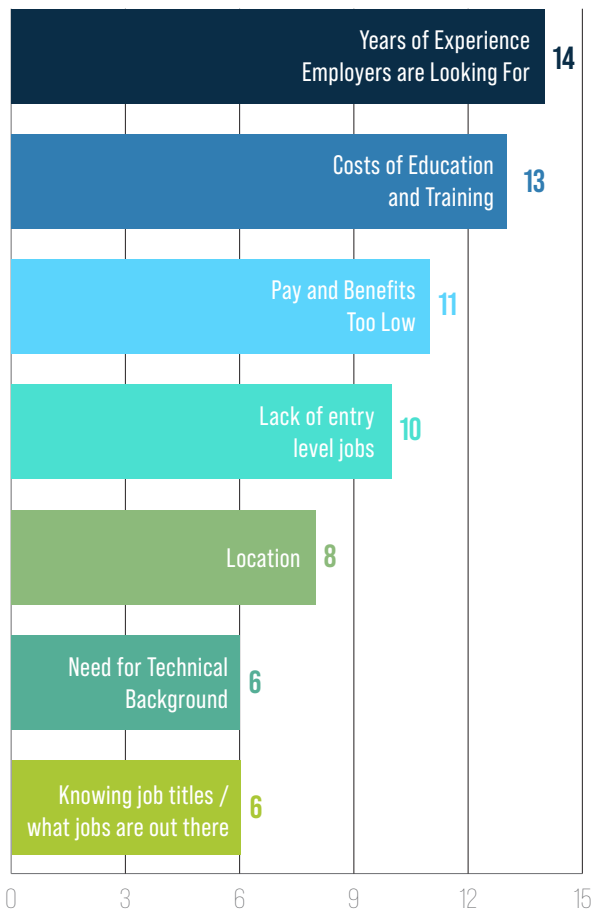
**Youth Interviewee**

Throughout conversations with youth interviewees, many brought up barriers they faced when trying to enter into the clean energy industry and find jobs. While no specific question was asked about barriers, almost every youth interviewee brought up at least one barrier they have faced on their own. These barriers were grouped by theme, and while with slight variations, the following chart shows how frequently these seven themes arose in our interviews.

## BARRIERS YOUTH IDENTIFIED

Youth brought up many of the barriers to accessing jobs in clean energy and entering the industry. This graph captures the themes in which those barriers were identified as, and how often they came up.

Barriers / Frequency



*“[Employers] have this requirement of having five or ten years of experience, whereas I know that there are many of us as students and fresh graduates who want to get into the clean energy space.*

*It’s just not possible because, the majority of companies are looking for people with experience.”*

**Youth Interviewee**

The most frequently mentioned barrier was employers looking for more experience than youth have. Many youth stated that job descriptions, no matter what level, were looking for between five to ten years of relevant experience for the role. Many youth entering into the industry do not have this amount of work experience, often coming right out of some level of schooling. Job descriptions which state this turn youth away from applying if they do not have the stated amount of job experience. Youth mentioned how as this is a growing industry, and being seen as a transitional job from the fossil fuel industry, older workers with more years of experience are entering the workforce, thus making the competition harder for youth to compete for jobs asking for a certain level of experience.

*“Make education more accessible, I think that’s the huge one. There’s a lot of barriers that comes with wanting to get an education. I know when I first started off in university, my bachelor’s, I was definitely a very broke in debt university student, and it was very discouraging because I’m trying to do this to improve my education, but you’re just falling behind and drowning in debt and trying to get out of that.”*

**Youth Interviewee**

*“A master’s is a prerequisite, but I don’t think the master’s equipped me with skills that I needed to do this job. I think I could do this job with a bachelor’s degree.”*

**Youth Interviewee**

The second most commonly stated barrier was the costs of education and training. All of the youth we interviewed had attended a post-secondary school or done a training program. To embark on studies or to get specific training on programs or skills often comes with financial costs, as well as costs associated with not working full time while doing so. It is also important to note that, while the majority of youth we interviewed were able to attend education or training programs, many youth who want to enter the industry, cannot due to the costs associated with required education or training. Some youth also mentioned how their degrees they pursued really weren’t necessary for the jobs they are doing, even though in their job description when applying, it was a necessity.

*“The problem that I found was that the income for these jobs that I wanted related to my field was so small, especially for entry level, that it was kind of impossible to just have the one job alone.”*

**Youth Interviewee**





*“Having a fair compensation is a really huge part, especially with inflation and the rising cost of living. I feel like a lot of these organizations should be striving towards doing things like becoming a living wage employer.”*

**Youth Interviewee**

The third most common barrier was pay and benefits being too low. Associated with the high costs of getting into the field, youth found that, on average, entry-level jobs do not pay very well, nor do they have the benefits they need to succeed. Youth indicated that they had to take pay-cuts or work multiple jobs in order to work in entry-level positions in clean energy. They also mentioned that many entry-level positions, like internships and contracts, do not offer stable benefits like health insurance, wellness days, or professional development opportunities.

*“There are pipeline jobs that are super available and easy to access -I have friends who are working in that space. But [it is not the same in] renewable energy. To be putting in solar panels, you need to have all this experience and degrees. So I question why one is so accessible for someone without post-secondary education, but the other one seems so unattainable?”*

**Youth Interviewee**



*“It’s also different coming from an oil and gas city like Calgary. My internship paid a lot. And I didn’t really want to level down for another first job [in clean energy].”*

**Youth Interviewee**

*“It’s almost like expected and built into these kind of more socially-minded businesses that you are kind of taking a pay cut, because you want to do good and it’s assumed that the pay doesn’t matter too much.”*

**Youth Interviewee**



Very important comparisons were made in relation to the barriers of costs and pay when it comes to fossil fuel jobs and clean energy jobs. Multiple interviewees mentioned differences they saw either themselves or in peers hoping to enter into the clean energy industry. They noted that the fossil fuel industry sometimes has fewer barriers to entry with education and training requirements. They also noted that the pay is higher in the fossil fuel industry compared to similar jobs in the clean energy industry.



*“One of the things I found was a lot of management positions were open that were asking for five to seven years of experience, and that was kind of the level that they were building out. There were really no entry level sustainable energy positions.”*

#### **Youth Interviewee**

*“It’s not an industry where you find lots of internships. That means that you have to somehow be experienced, but then without internships, how do you have the experience?”*

#### **Youth Interviewee**

Another commonly mentioned barrier was a lack of entry level jobs. Many youth indicated that the openings for entry level positions, either internships or junior positions, are hard to find and fairly rare. Youth mentioned it was intermediate or management positions that had the most openings in their searches for jobs. Youth stated how this made the job search harder, as they cannot get the experience needed for higher level jobs without first getting experience in entry level positions. Many youth indicated that they would be interested in staying with a company or organization that would take them on at the entry-level, so they can gain skills that the employer wants to see.

Location was mentioned as a barrier for some youth. Many jobs in clean energy are in person, making it harder for youth in rural or remote communities, or communities without large clean energy presences, to find jobs in the field. While some youth gave the advice to stay mobile and try to not limit the scope of their job search to a geographic area, other youth mentioned they cannot or do not want to leave their community to find work in clean energy.

*“As a business student, I was interested in energy and I did consider working in it. I was looking at the jobs but it was super technical.”*

#### **Youth Interviewee**

A barrier that was mentioned by some youth was having a technical background related to clean energy. Some youth who did not have a STEM background noticed it was harder for them to find jobs to apply to in clean energy, even if they had the relevant skills and knowledge to complete the job.

*“It took me a long time to learn what words to search for when applying for a job because I didn’t know what the job titles were like.”*

#### **Youth Interviewee**



A few youth also made reference to not knowing job titles or what the jobs in clean energy are as a barrier. As the clean energy industry grows and expands, job titles emerge and change. This means that this makes it more of a challenge for youth to find jobs in clean energy. Looking for jobs online requires key words or job titles in order to find jobs in the field you’re looking for. Youth also mentioned job descriptions not always matching job requirements and the day to day tasks of a job,

making it more of a challenge to determine what jobs might be a good fit for job seekers.

Overall, there were major barriers indicated by youth that made entering the clean energy industry more challenging. The themes emerging show that there is unequal access to the clean energy industry for youth, and there are changes the industry can do to make this a more accessible field for youth to enter into.

## Supports

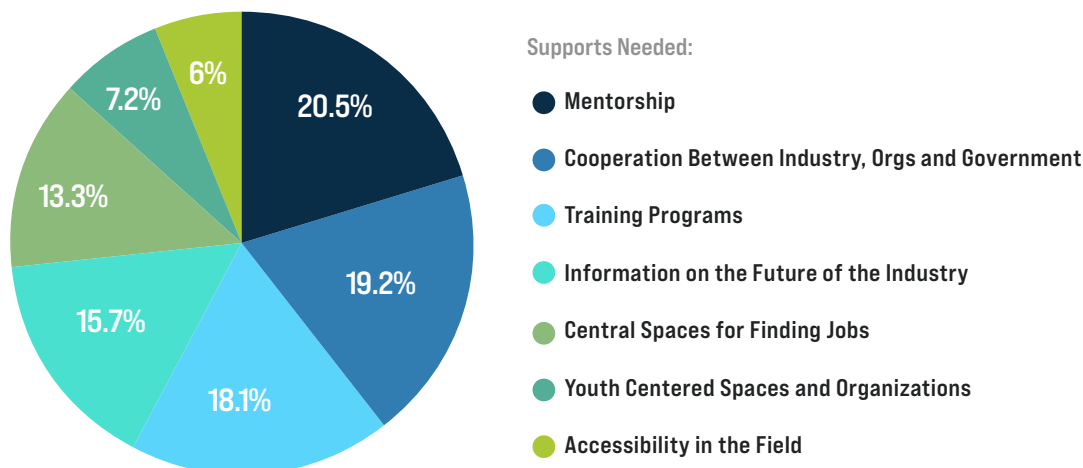
In typical youth fashion, the interviewees were solution oriented to discussing barriers into the field. With most of the youth we interviewed in, or on track to enter into, jobs in clean energy, we asked them what supports they and other youth need for improving access to youth jobs in the clean energy industry. Their answers were very informative, grouped below according to a few themes, and later as direct calls to action to industry actors, governments, and educational institutions.

*“There’s an aging workforce and a lot of people who are retiring. And a lot of the time, we bring retirees back as contractors or consultants to work for us on projects. But if we know that we have gaps that we need to fill, we could start that process earlier and have students come in and have them be mentored.”*

Youth Interviewee

### SUPPORTS YOUTH IDENTIFIED

Youth brought up many of the supports they would need to access jobs in clean energy. This graph captures the themes in which those supports were identified as, and how often they came up.





The most frequent support desired by youth was mentorship. Youth described this in various ways, commonly identified as having people to look up to and guide them through the industry. According to youth, mentorship helps them to figure out what career paths are out there and how to best approach them, a necessary step in a field that is consistently expanding. Youth described mentorship as being an aid both to youth throughout their journeys into their careers, as well as a solution to bridge gaps in an aging workforce to ensure that knowledge of the industry does not leave as older workers retire. Youth mentioned it was hard to find mentors in the clean energy and sustainability field, as it is a relatively newer industry.

Youth want both formal mentorship programs, as well as natural mentorships that happen out of creating relationships.

**Industry Recommendation:** Implement a mentorship program in your workplace, or encourage more experienced employees to form natural mentorship relationships with youth inside and outside of your organization.



*“Especially for Indigenous youth, having Indigenous role models who work within the industry or have experience in the industry can help with making sure that you’re fully aware of what you’re getting yourself into. Stuff like that is vital because there’s lessons learned to be passed on, and to just to know that you’re not alone in that too.”*

**Youth Interviewee**



Some youth also mentioned how it is equally difficult but important to find mentors who come from a similar background as them—either based on identity, education, or work experience. The importance of having representative mentors was stressed, as there is a lot to be learned from navigating the industry from someone like you.

“[Companies, educational institutions, and the government] need to be less siloed. Let’s work together.”

**Youth Interviewee**



The second most common support youth wanted to see was less tangible, but more holistic—the desire to see more cooperation between the clean energy industry, employers, educational institutions, and governments. This was referenced in many different ways, from wanting education programs to be more up to date with industry demands, to needing up to date information in the clean energy industry job trends, to wanting to see governments working closer with employers to boost demand for jobs in certain sectors to meet energy targets. Ultimately, youth are seeing that all these different actors are working too separately, at the detriment of youth and the clean energy future.

*“I feel like there’s a big gap between what the industry is looking for and what the schools are teaching. So I feel like there needs to be some sort of reconstruction of what the school is teaching.”*

**Youth Interviewee**

*“I find training actually so much more helpful than a formal education and to be able to just have different certifications to be able to get your foot into the door. It really does make a difference and it provides hands-on skills.”*

**Youth Interviewee**

The third most common support youth recognized was training programs. Whether hosted by governments, industry, or organizations, youth recognized the importance of training programs in helping them enter into the clean energy industry by working on skills needed in the industry and getting experience in the field. Youth mentioned the necessity to make these training programs accessible—either free, if a course, or paid if on-the-job-training or co-op opportunities. They mentioned that when hosted by companies and industry actors, they provide an opportunity both for youth to gain experience and connections in the industry, and can also be an opportunity for employers to train youth for the skill they will need in their company. Investing in youth through training programs can be a mutually beneficial opportunity.

**Industry and Government Recommendation:**

Encourage cooperation between industry, government, organizations, and educational institutions. Exchange data and information, regularly analyze educational programs, and see if needs of the industry are being met.



*“Right away accessibility comes to mind. I think training opportunities for remote communities, funding opportunities, whether that be scholarships, or through equipment donations or equipment funding, it’s all necessary.”*

**Youth Interviewee**



**Industry and Government Recommendation:** Invest in youth through accessible training programs that provide the skills and experience youth need to enter into the industry.



*“I think another thing [youth need] is just a sense of what’s going to be needed. I think people are floundering a bit because there is no large-scale plan for how many jobs we’re going to need, in what industry for how many years. I can’t really imagine how you would be planning your job as someone trying to decide what type of training to go into right now. I feel like we’re kind of lacking that insight.”*

**Youth Interviewee**

Another theme youth brought up in relation to support was up to date information on the future of the clean energy industry. This relates to needing to know how the industry is going to change and what the coming demands are going to be. While governments and industry are not omniscient, it is still important for youth to know all the information they can on the future of jobs, especially as most post-secondary education, apprenticeships, and training programs take a few months to a few years to complete. In a rapidly changing industry, it is

important for youth to have all the information they can. Youth mentioned how quickly jobs can change when governments implement or cancel programs, or when a large company switches gears, or when large investments are being made in a new form of clean energy and away from others. It can be hard for youth to keep up with these changes at the beginning of their careers, and having as much information as possible at their fingertips would make the transition into the industry much smoother.

**Recommendation:** Publish up to date information on the future of the clean energy industry for youth to access in order to inform their decisions on how they want to enter into the industry.



Another similar point was in regards to having central spaces for youth to find jobs in clean energy. This could look like a centralized job and opportunities board for employers to post on, either new or enhanced from existing green jobs boards. Youth expressed how this would simplify their job search, and make jobs that aren't as easy to find, either in smaller companies or jobs with titles that aren't common, more accessible. Currently, youth have stated that it is hard to know what jobs are out there, and job titles vary based on the company, so a centralized space for finding jobs would make this much simpler.

Youth also mentioned a need for youth spaces and organizations for them to gather, organize, support, and learn together. While some of these exist, such as Student Energy, there was a desire for more of these spaces and for more

funding to support and advocate for the needs of youth.

Lastly, youth noted an overall need for more accessibility in the field. For some youth, this meant using simpler language in job postings for those whose first language is not English. For others, this meant making sure entry level jobs and training opportunities are paid well enough and have benefits for any youth to take on the opportunity. For others still, it meant ensuring there was access to networking and conference opportunities to expand their experience and skills.

These are some of the general themes to come out of the interviews with youth on what supports they want to see from the clean energy industry. Below are some of the direct calls to action youth have for industry actors, academic institutions, and governments.

**Government Recommendation:** Create and maintain an up to date clean energy jobs board.



*“[We need] youth representation and advocacy, advocacy groups and places for us to feel heard and that our actions and words [are heard] and our climate existentialism is also being taken care of.”*

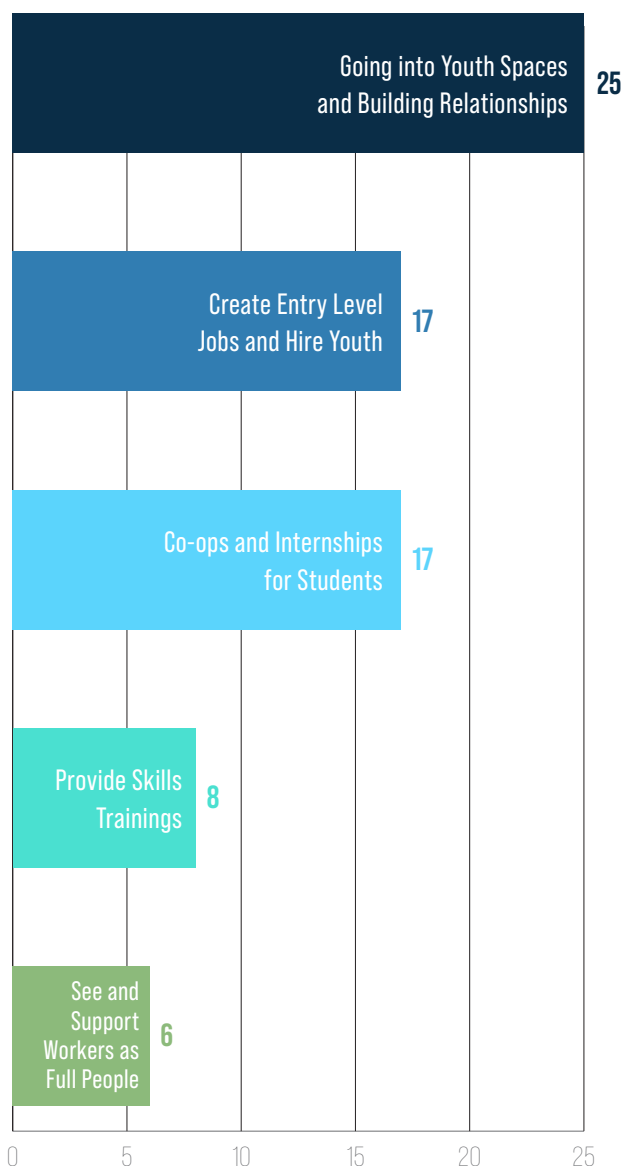
**Youth Interviewee**

# Roles of Industry

“We asked youth what role companies, firms and organizations play in supporting young people entering the clean energy industry.” While responses varied, we saw five themes emerging from this question that industry actors need to take action on.

## ROLE OF INDUSTRY (YOUTH PERSPECTIVE)

This graph showcases the themes that youth brought up in relation to the question “What do you think industry actors can do to help young people enter into the clean energy industry?”



*“Once students are able to see that and have a physical and practical knowledge of what clean energy jobs look like, then even students who are not interested in it beforehand will begin to gain an interest.”*

**Youth Interviewee**

*“When you come to an event and you actually speak with the students one-on-one, you’re able to build those connections with those students and help them understand what your company does and why the job or your company is beneficial for them So reply to students when they email you about events!”*

**Youth Interviewee**

The most frequent support youth wanted to see from employers and the energy industry was to build relationships with youth and go into youth spaces. Half of our participants identified this as a top support they would look for, in a variety of ways. The ideas youth had on how this could happen were plentiful. Youth encouraged industry actors to attend events student clubs invite them too, and to reverse and invite students

to visit their workspace on field trips and site visits, showcasing what the jobs actually look like. Youth networking events and conferences aimed towards youth in energy were also noted as spaces that industry should be consistently showing up in. Attending post-secondary career fairs and posting on post-secondary jobs pages for recruitment would help show their presence. It was also recommended that some of this outreach be done with students while they are still in high school, to showcase some of the opportunities out there, as some youth noted experiencing this with other industries. A presence on social media, especially in spaces where youth already are like Instagram and Tik Tok were recommended as a great opportunity to connect with young people remotely. Ultimately, getting the company or organization out into youth spaces and viewing relationship building as a two-way street is an important factor youth are looking for from employers.

**Recommendation:** Build relationships with youth—attend their events, be in youth spaces, and invite them into your spaces!



*“Fresh graduates have a lot of energy compared to people who have 15 to 20 years of experience, so companies can really utilize that eagerness to learn and the eagerness to make an impact - all this energy. It can be a win-win.”*

**Youth Interviewee**

*“Once you give young people the starting point, they can succeed.”*

**Youth Interviewee**

The second most common support youth want to see is perhaps the most obvious: create more entry-level jobs and hire youth. Youth were able to see the bigger picture in relation to this recommendation too. They noted that, while many clean energy companies are just starting up and getting their footing, there is a risk of not having enough younger workers to gain the experience and work their way up in the industry as older workers retire. It is also noted that youth specified a need for jobs to not just be for students as co-ops and internships, as some youth hoping to enter the industry have not come from a postsecondary program or have been working in a different field, hoping to transition in. While fixed-term were mentioned as better than no jobs, many youth noted these entry-level jobs should have good working conditions, mentorship, technical skill-building, benefits, and a longer-term contract or indefinite position. Ultimately, youth need a place to start in the industry. Entry-level positions for youth can be to the benefit of youth themselves, employers, and the industry as a whole!

**Recommendation:** Create more entry-level positions and hire youth!



*“I feel like [internships and co-ops] are low risk for employers because if they don’t like the person they hired [in the short-term], they don’t have to keep them. It’s really just like a trial period, opening their doors, see how this works.”*

**Youth Interviewee**

*“Start showing that commitment to supporting recruitment of new students and youth into their organizations, doing things like Co-op programs, summer student programs, giving people an opportunity to get exposure to the company, get work experience, and then have a win-win situation where, okay, you’ve had almost a year long interview with somebody who’s worked for you as a student, and then going into those programs with the intent to then hire these students for meaningful employment afterwards.”*

**Youth Interviewee**

Equally as recommended from youth was more co-ops and internships for students in post-secondary institutions. Many youth credited these work opportunities in their education journeys for building their skills for the job, and getting a job right out of school. These opportunities would be best as paid opportunities as well, as when youth are in school, finances are a huge barrier, and having well-paid positions would mean more equitable access for youth. To have mentorship and guidance alongside student placements would ensure that students are getting the most out of their experience, and can build relationships at the same time. Youth also noted the importance of programs like the “Canada Summer Jobs” program, funded by the government of Canada, where clean energy employers could apply to have subsidized wages for youth employees. Ultimately, clean energy companies and organizations should strive to create internship and co-op opportunities for students as a low risk way to help them.



**Recommendation:** Open up more opportunities for co-ops and internships for postsecondary students.

*“One of the easiest ways I could see that happening is by providing opportunities for young employees to go get certifications or additional training in areas that they want to grow their careers”*

**Youth Interviewee**

Skills training opportunities was the fourth most recommended support youth could gain from clean energy industry actors. When youth are employed, they are often at the beginning of their careers and have some professional or technical skills they could enhance to further their skillsets. Training could take many forms, from small certifications, to higher education, to job shadowing and having the opportunity to try out different roles in the field. While training is an investment in youth workers, it is to the benefit of the company currently employing them, as well as for youth’s career paths and the industry as a whole.

**Recommendation:** Provide upskilling and training opportunities to youth employees.

*“Prioritizing work life balance, not focusing on overworking and instead just a livable wage, and a livable amount of hours to work.”*

**Youth Interviewee**



The last theme recommended as a need from industry actors is to see and support workers as full people. While youth did not use this term directly, they mentioned things such as fair wages, good benefits, and an understanding of commitments that matter outside of work, such as family, mental health, and wellbeing. Youth mentioned that these things matter to them a lot, and they do not want to structure every part of their lives around work. Youth are seeking changes in the industry to make the work they do more sustainable, to the benefit of both workers and employers.

**Recommendation:** Support youth as full people, not just as workers, by providing fair pay, benefits, and an understanding of balancing their life outside of work.



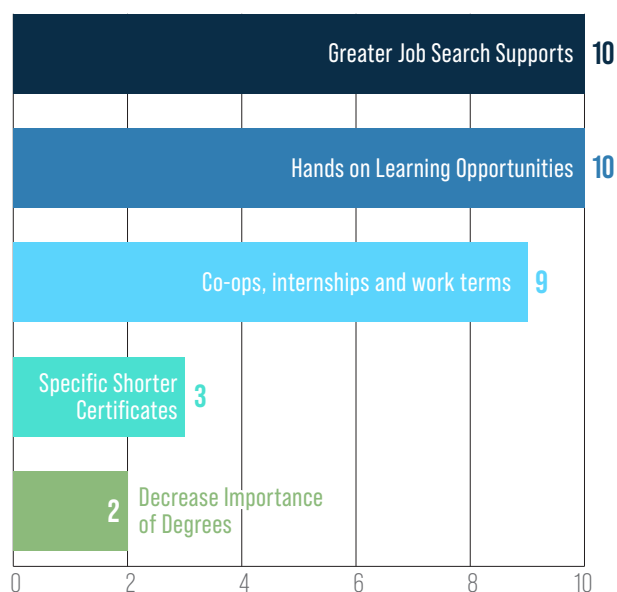
# Roles of Academic Institutions

Alongside the roles of industry, we asked youth if they could identify any supports they need from academic institutions to help enter into the clean energy industry. While not every youth had experience with, or thoughts on, the role that academic institutions have on helping youth enter the clean energy industry, five themes emerged from those who provided responses. For this report, academic institutions included any institution that provides post-secondary education or credentials in Canada.

The first theme youth identified is wanting to see greater job search support, during and beyond their education. This includes things such as tailoring resumes, job fairs, connecting youth with industry professionals, relevant career navigation support, up to date information on how to navigate the job search with increasing uses of AI. All of these suggestions would ensure that youth are getting the support they need to enter into the clean energy industry after graduating, and academic institutions are well-poised to provide these resources.

## ROLE OF ACADEMIC INSTITUTIONS

This graph showcases the themes that youth brought up in relation to the question “What do you think academic institutions can do to help young people enter into the clean energy industry?”



*“In school, you’re not taught things like the software that the industry uses... So I feel like if institutions and schools are more tailored towards practical things that the industry is looking for, that would have been really useful for me.”*

**Youth Interviewee**

*“When I was in university, I don’t really remember anyone ever talking about how to get a job, or what you could do when you graduate, or who you should talk to, or what you should do.”*

**Youth Interviewee**

Hands-on learning opportunities were tied as the most frequent suggestion from youth. This mostly focused on experiences during their education focused on enhancing tangible skills, such as gaining experience with relevant tools

the industry currently uses and skills such as data analysis that are prevalent in the industry. These could be incorporated into classes youth are already taking, or as additional programs to run alongside their classes. This also included support for entrepreneurial endeavours, such as microgrants, tools, or guidance for youth interested in creating something. Events such as pitch competitions and challenges hosted by schools can give youth hands-on experience to then translate into the clean energy industry.

*“As for academic institutions, finding ways in which they can partner students with employers, having more Co-op opportunities to get that firsthand experience, as opposed to just learning everything through theory, reading books, and writing papers.”*

### Youth Interviewee

The third most common support youth are looking for from academic institutions was accessible co-ops, internships, and work terms. Ideally, these opportunities should be accessible to any students, and not just those who maintain the highest GPAs or those who can accept an unpaid internship. Many youth indicated that it was through their work experiences in school that they gained the most skills, or gained relationships that helped them land jobs after graduating.

The fourth theme recommended by youth was a desire for specific certificates or micro-credentials that are in demand by the industry. Many youth do not have the time or money to get a full degree or diploma, and some jobs do

not require all that comes with a full degree or diploma. Youth would want to see educational institutions work with industry and develop multiple smaller certificates or micro-credentials that youth could attain to up-skill or get more relevant skills for the industry without the high price tag or time commitment.

The last theme youth wanted to see, that was directed less at academic institutions but more at the industry and society overall, was a decreased importance placed upon attending a post-secondary institution. Some youth we interviewed who attended university or college programs stated that they did not gain much from their degree and do not use much of what they learned in the workspace. They mentioned how many jobs in the industry may ask for a specific degree, but once in the job, youth do not feel their degree gave them any more of an understanding as to how to do the job.

*“I look back, I’m like, oh, yeah, I got my undergrad, I got my masters, and I use none of it. But, I never would have been able to get to where I am if I didn’t have that certification beside my name. So how can we get society to trust people who don’t have pieces of paper attached to their names, but have skills to do the projects.”*

### Youth Interviewee



Ultimately, they signaled a desire to decrease the importance that we place on degrees and diplomas, and instead on the skills youth can develop from a myriad of places.

*“[What I want to see is] large institutions like these divesting from fossil fuels in order to make these jobs really not dependent on fossil fuels and not entwined in the fossil fuel industry.”*

**Youth Interviewee**

One statement that really stood out was the desire to see academic institutions divest from fossil fuels. Youth noted a sad irony to graduating from college or university with a degree related to clean energy, only for their tuition to go towards investing in oil and gas. As an overarching suggestion for academic institutions, and any institutions with commitments to a clean energy future, divesting from fossil fuels and fossil fuel intensive industries is a key step.

## Roles of Government

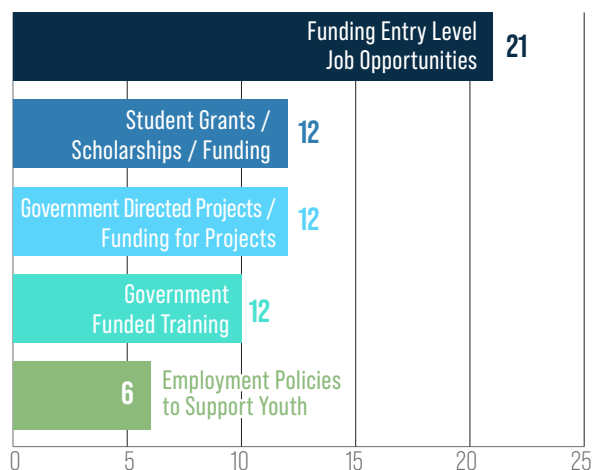
To conclude our conversation on roles of various actors in the clean energy industry, we asked youth what they saw various levels of government’s roles in supporting youth entering the clean energy industry. Youth gave a variety of answers directed at federal, provincial, territorial, and municipal governments, summed up in the below five themes. While not all are relevant to each levels of government, there can be takeaways from these needs for all levels of governments.

*“Canada Summer Jobs, that sort of thing is useful for organizations that have space for people, have training opportunities for people, but don’t necessarily have the funding.”*

**Youth Interviewee**

### ROLE OF GOVERNMENTS

This graph showcases the themes that youth brought up in relation to the question “What do you think governments can do to help young people enter into the clean energy industry?”



The main support youth wanted to see from the government is more funding for entry level positions. Many youth expressed an understanding towards smaller industry actors who may just be starting, or are not quite stable enough to fund many entry level jobs for youth. Youth mentioned programs like Eco Canada’s funding program, or Canada Summer Jobs program as ways that can support smaller businesses and organizations as well as youth by providing part of the funding for youth employment. More programs such as these, specifically for clean energy jobs were recommended by youth. Introducing a Canadian Climate Corps was also mentioned by three youth as a way for this funding to reach youth and the clean energy industry in a holistic and sustainable way.

*“I feel like this could be achieved through the Youth Climate Corps. So if the government actually provided funding for these energy companies and was able to offer a program like that it’d be very helpful.”*

### Youth Interviewee

*“A lot of businesses are restricted by the funding that they can get. So it’s tough for organizations in the renewable energy space to hire folks, if they’re relying on unreliable government funding.”*

### Youth Interviewee

Following these sentiments from youth, the second theme that appeared was more government directed or funded clean energy projects or programs. Youth noted that for many smaller industry actors, funding and policies can be inconsistent, meaning that there can be huge fluctuations for employers and thus they will not be able to consistently hire youth. Government investment in bigger clean energy projects and programs can encourage more jobs to open up for youth in the industry. If there are more projects in clean energy, more workers are needed, and youth are well poised to step in.

“If we could just do away with tuition that would be great. Honestly that is something when I look at my journey that has astronomically changed my trajectory... And so the more that I think you can decouple people’s financial situation in academia from the people who have power over their career trajectory, the better I think.”

### Youth Interviewee

Another major theme youth brought up was in relation to funding for their education—youth want to see more grants, scholarships, and loans accessible for youth to upskill. The second most common barrier youth mentioned was that of the costs of education and training. By providing more funding for youth to access education barrier-free, the more youth may be able to upskill in formal programs. Even better, youth wanted to see education for programs leading to jobs in clean energy or any post-secondary program out there free, meaning that costs would not be a barrier for anyone.

“Funding needs are endless. I feel like we need more opportunities for expanding our education without barriers”

### Youth Interviewee

Government funded training in general was another recommendation youth had for governments to support them further. Beyond aiding with the costs of education, youth wanted to see governments step up and introduce programs to support sections of the clean energy industry that need more workers, such as solar panel installing or welding for wind turbines. This could be aimed at youth even in high school, while they are deciding what paths they want to take after graduating. Additionally, it could be smaller courses for students finishing a diploma or degree that can add on a specialization to their training subsidized by the government. Making in demand jobs more accessible and appealing for youth is another role that governments can fill.

Lastly, youth recognized that governments are in strategic positions to implement policies around employment that could be of benefit to youth. One of these ideas were mandates around a certain number of employees being under 30 for new projects with government investment. Another idea was to shift the valuation of work from high carbon intensive jobs to valuing low carbon intensive jobs more, including jobs that are not in clean energy,

such as teachers or caregivers, through higher wages, subsidized education, and better working conditions. One youth noted that these policies could be even simpler and more holistic, such as making sure that getting IDs and documents are easily accessible for youth who don't live near urban centers or face more barriers accessing government services. Various levels of government have unique positions to introduce overarching policies like these that would have dramatic benefits for youth and do not directly include funding.

It should be noted that four of five of these themes involved funding from governments, either directly to youth or into the industry overall. While this funding may not be able to happen overnight, it is doable to fund all of this and more based on prioritizing the clean energy industry. Currently, various levels of government in Canada fund the oil and gas sector, either directly or through tax breaks. If this money was reallocated, and instead was used to support the flourishing clean energy industry, Canada would be poised to be a leader in the field and youth would have better prospects in the clean energy industry.

## Youth Demographics

Through our interviews, there were defined experiences that youth shared based on demographics they had in common. Many of these experiences shared by youth were of the increased barriers they faced while trying to enter into the industry. Below, we outline some of the major barriers, as well as suggestions made by three demographics groups we interviewed—Indigenous youth, international students and new arrivals to Canada, and women.

### Indigenous Youth

For this study, we engaged Indigenous youth directly on their experiences entering into the clean energy industry. As mentioned in the literature review, Indigenous people make up a major part of the clean energy workforce, and are well-poised to lead it. But, from the research and from our interviews, Indigenous youth face more barriers than non-Indigenous youth in Canada getting jobs in clean energy. Throughout

the interviews, Indigenous and non-Indigenous students alike stated that Indigenous youth should be at the forefront of the clean energy future.

### **Collaboration with Indigenous Communities:**

One of the major themes stressed from these interviews was the importance of collaboration with Indigenous communities. Many energy projects, both in clean energy and in oil and gas, are based on lands either currently or traditionally belonging to Indigenous nations. The energy industry brings with it extraction and lifelong damages to ecosystems and communities, impacting the health of people, communities, and the land. Clean energy industries, while cleaner in some senses, can cause damages to lands, such as the extraction of minerals for solar panels, or hydroelectric dams flooding previously dry lands.

In order for clean energy to be truly clean, Indigenous communities need to be consulted, collaborated with, and see the benefits of any clean energy project on or near their lands. While many clean energy projects do environmental assessments and consultations when engaging with Indigenous communities, these consultations are often designed with non-Indigenous knowledge and values applied, meaning they may not be inclusive of all the concerns and needs that Indigenous communities have, even if they “are approved.” Collaboration must extend beyond consultation with Indigenous communities. One youth noted that in their research on extractive industries in the North, oftentimes energy companies, including clean energy companies, enter communities after consultation, extracting resources without employing community members in their work. After their work is complete, these projects leave without adding monetary or skill based community benefits.

*“You think about development and these mega projects and how, it’s a little bit more talked about when we’re talking about developing oil, but it brings a whole host of problems into the community, and if energy projects are undertaken at that same scale on the same speed, there’s a risk that it could translate into clean energy projects. There’s lots of opportunity, but I think it has to be done in a good way that’s community led.”*

**Youth Interviewee**

*“A lot of these environmental assessment and impact assessment processes are not designed by us. So they’re not actually gathering information for us to know and us as a community, we want to be healthy.”*

**Indigenous Youth Interviewee**



When collaborating with Indigenous communities, industry needs to ensure that people in those communities, especially youth, are benefitting. This means that revenue from the project should go to the community, jobs need to first be given to the community, and decision making needs to be in the hands of Indigenous people. One Indigenous youth interviewee spoke of a clean energy project that their nation specifically is leading on, providing good jobs to people in their community, with community leadership solely in control of the project. In their words, this is a clear example of energy projects working for the benefit of Indigenous youth, as they can be employed in clean energy jobs without leaving their community.



*“To work with other nations and communities, bringing them to the table... I feel like it’s promising because we’re accessing the land with our communities and nations. We’re no longer taking this from them. We’re building opportunities for everyone.”*

**Youth Interviewee**



Ultimately, collaboration should be pursued for any clean energy project with impacts on Indigenous communities. This should be led by Indigenous people, with the consent of whole communities, and provide tangible benefits for youth.

**Valuing Indigenous Traditional Knowledge:**

Many youth noted the value that Indigenous traditional knowledge can bring to clean energy, and how youth should view this as a pertinent skill

to lean upon. To address the climate crisis and the future of the clean energy industry, leaning on Indigenous traditional knowledge is essential for leading decision-making in the industry.

*“I really think Indigenous knowledge is a hard skill and I think it should be valued as such, but I think most people consider that a soft skill because it’s lived experience and knowledge”*

**Indigenous Youth Interviewee**



One youth even mentioned incorporating Indigenous traditional knowledge into curriculum or making specific training courses taught by Indigenous people about how to incorporate

respect for sustainability the land corresponds with energy. This could be an innovative way of incorporating Indigenous traditional knowledge into the industry.

*“What I always like to talk about is how Indigenous people respect the land and the give-take nature of the earth... Pretty much all spiritual systems of North American Indigenous folks I think, have some semblance of respecting the Earth. And it’s very contrasting with, for example, capitalism, which has led to the reason why climate change is such a big problem. It’s interesting to note that, if these methodologies or ways of looking at life, or even priorities, were incorporated into broader ways of thinking, we probably wouldn’t be here today.*

*There could hypothetically be the creation of actual technical programs that specifically prioritize the Indigenous knowledge aspect [of clean energy and energy in general].”*

### Indigenous Youth Interviewee

**Access to Education and Jobs:** For some Indigenous youth, jobs still remain inaccessible if they want to stay in their community. Many clean energy jobs are place-based, meaning that to get a job, one may need to relocate. Additionally, some Indigenous youth may need to leave their communities to attend school, whether that is high school or postsecondary education. This separation from family, community, and land can be a very hard decision to make for youth, and choosing to stay in their community may limit their access to clean energy jobs. While hard to mitigate, some jobs training, post-secondary education, and jobs can be hosted remotely to ensure youth do not have to choose between the two options.

**Working Within a Colonial System:** Some youth noted that working as an Indigenous person in a colonial industry was difficult. At times, they were made to feel like they could not share their knowledge and experience fully. Additionally, some workspaces can feel toxic or unsafe if measures are not taken to ensure that Indigenous youth have the support and resources they need, and the workspace is not educated enough to follow suit. Employers need to ensure that Indigenous workers are not tokenized and that their work is taken seriously. Multiple Indigenous youth we interviewed said they felt impostor syndrome being in their workplaces. This can dissuade youth from wanting to enter into the industry if they know there will be consistent challenges in the work that they do.

*“I think it’s difficult sometimes because we’re still not far enough ahead where we can really propose a lot of the things that we want to related to how the world works. It’s still a colonial system.”*

*When we’re talking about Indigenous research and Indigenous ways of knowing, I think we could push this so much further, but we’re still working within the bounds of the colonial system and it’s really hard to feel like you’re making change without having to go back and simplify a lot of the things and take out a lot of the nuance that really makes it what it is in order for it to be palatable for people that don’t understand.”*

### Indigenous Youth Interviewee



**Indigeneity as Power:** For some youth, they found a lot of power in their Indigeneity when entering into the clean energy industry. Many clean energy employers are looking for Indigenous youth to join their teams in order to make strides towards reconciliation. Some of the advice Indigenous youth gave was to lean into their knowledge as Indigenous people as a skill when entering into the industry, as it is an essential part of clean energy

work. It is important to note that simply hiring Indigenous youth is not enough—workspaces need to be made safe for youth to express their Indigeneity and have their knowledge respected.

We gained additional perspectives and advice on Indigenous youth participation in clean energy from Indigenous Elders and Knowledge Keepers. This can be referenced in a further section on page [73](#).

*“I find I’m in this very special time as an Indigenous young person, we’re in the era of ‘reconciliation,’ they want me especially because I’ve had a background in it... Companies have to acknowledge that they need Indigenous peoples within the fabric of their organizations to actually move forward with sovereignty and reconciliation.”*

### Indigenous Youth Interviewee

## International Students and New Arrivals to Canada

Many of the youth we interviewed were either international students studying in Canada, or youth who had recently moved to Canada. Coming to the country as a student and looking for work, navigating the industry having done their education in another country, or navigating the specifics of the Canadian industry and immigration system yielded major barriers for these youth when applying for roles in clean energy. Outlined below are two themes emerging from these interviews.

*“If you’re an international student, it’s a bit more difficult because I think you need to prove yourself more, and as an intern or as a new graduate youth, it’s always a bit harder to do that.”*

### Youth Interviewee

#### Experience and Education Outside of

**Canada:** For many youth who attained their post-secondary education or work experience outside of Canada, seeking recognition of qualifications and experience is not easy. Multiple international youth highlighted employers did not recognize relevant degrees from institutions outside of Canada. This means that many youth have had to acquire qualifications in Canada, either through another post-secondary degree or more specialized training. Similarly, youth who had multiple years of relevant experience faced barriers gaining employment in the clean energy sector when coming to Canada. Youth noted that employers state that knowledge of the Canadian system or Canadian policies around clean energy were essential to getting into a role, not acknowledging that this could be learned while on the job. This can cause delays to qualified youth getting positions in clean energy, or having to pay money out of pocket for increased education or qualifications. Ultimately, governments and employers in Canada need to improve recognition of the qualifications, experiences, and unique perspectives youth from countries other than Canada can bring to the clean energy industry.

*“One of my mentors who is an engineer told me that the big companies, precisely here in Canada, when they look at your resume and they see that your education is not from Canada or the US, they will discard your resume right off.”*

### Youth Interviewee

#### Finding Jobs as an International Student:

As is clear from this report, finding entry-level positions as a youth is a challenge, but for international students, this is even more challenging. Many summer jobs and internships are funded through various levels of government, such as the Canada Summer Jobs program. Yet programs like this do not allow international students, or anyone who is not a citizen or permanent resident of Canada to apply. This limits the already small pool of clean energy roles for international students. International students may only have work experience outside of Canada, creating an additional barrier to their perceived employability by members of Canadian industry. Ultimately, employers and governments should consider changing hiring rules to allow international students the opportunities to build experience while in Canada.



*“I think jobs at the moment aren’t that easy to look for, especially for international students. There are so many jobs that are related to sustainability and the climate that, because they are funded by the government, are only eligible for Canadian citizens and permanent residents.”*

**Youth Interviewee**



## Women

Interviewees also highlighted that certain positions in the clean energy sector remain male dominated. While some women answered that their gender was an inhibitor to getting roles in clean energy, others mentioned they view being in the field as a woman as powerful and an inspiration to other women interested in clean energy.

*“In the workforce, there still really aren’t that many female engineers, so I feel like every female engineer at my company is seriously a mentor to me.”*

**Youth Interviewee**



**Barrier to the Workforce:** Some women interviewed expressed that their gender acted as a barrier to entering the clean energy workforce, which is a typically male-dominated field. Women expressed that it is hard to express confidence in their interviews or roles, be in managerial positions, and excel in male-dominated networking events. Youth expressed that they have often been the only woman in a room before in workplace settings, which can be a challenge to navigate.

*“I have been very fortunate, at least in the last five years, to have supervisors and managers who are strong female leaders... It makes mentoring all the better, because they’ve gone through similar experiences, and they know what you’re up against sometimes.”*

**Youth Interviewee**

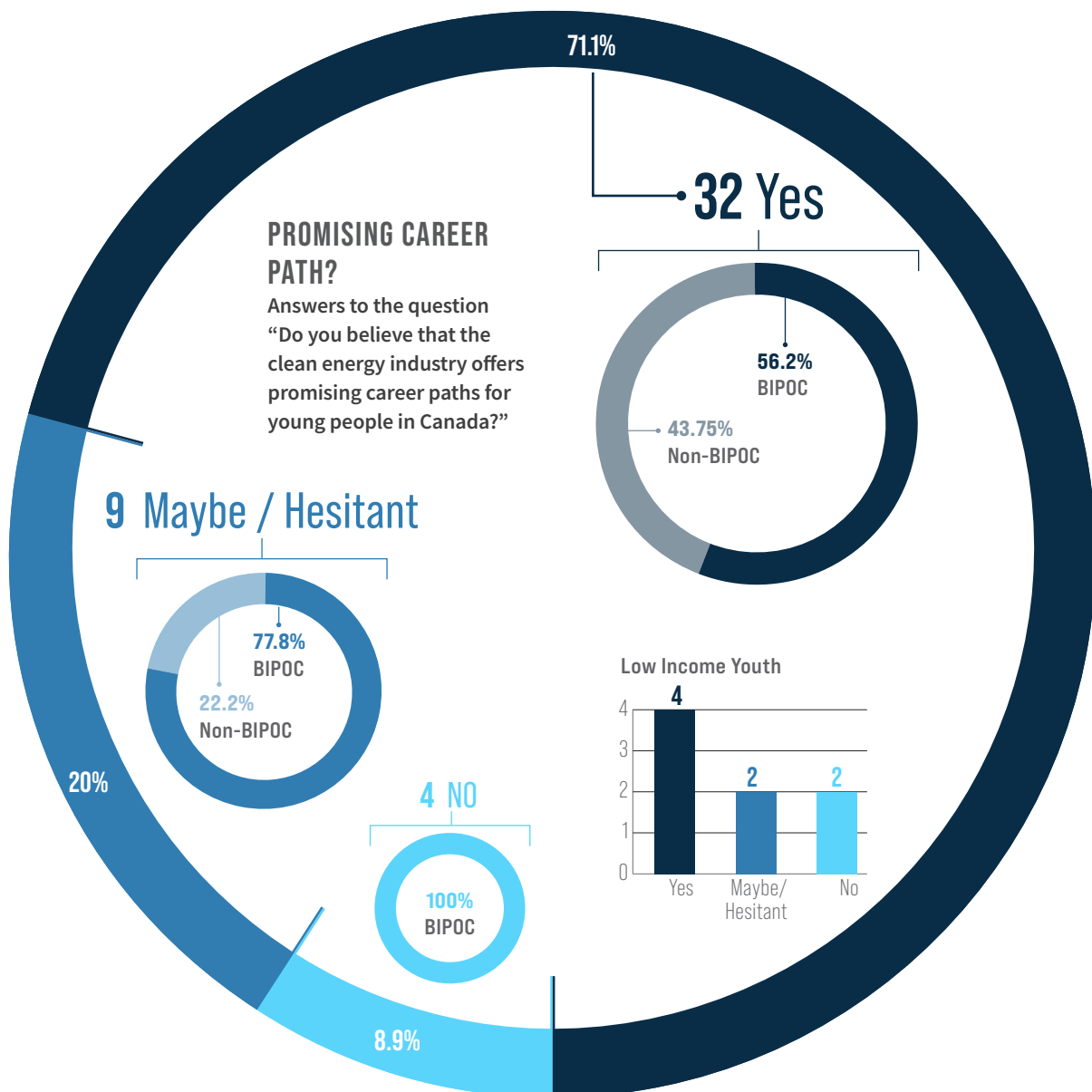


**Women Mentors:** Many youth also indicated that having women mentors is very important for entering the clean energy industry, as having a mentor with similar identities and experiences can help you navigate the workforce smoother. Some interviewees also mentioned how their presence in the clean energy industry is also an example for future women in the clean energy industry, and how they seek to set a strong example for the women to come after them.

# Perspectives on the Future of Clean Energy

At the end of our interviews with participants, we asked two questions to gauge the general outlook on the future of the clean energy industry in Canada. These questions were included to get an understanding of

if participants felt this is an industry youth should aspire to enter, and to understand their perspectives—whether they were optimistic, pessimistic, or neutral about the future of clean energy in Canada.



The first question we asked was “Do you believe that the clean energy industry offers promising career paths for young people in Canada? While the answers varied slightly, almost three quarters of participants answered “Yes”. Many

youth expressed that they thought the industry would continue to grow, was more reliable than a career in fossil fuels, and noted that we will always need energy, so there is a good chance of longevity once you’re in the field.

**IN RESPONSE TO THE QUESTION ‘DO YOU BELIEVE THAT THE CLEAN ENERGY INDUSTRY OFFERS PROMISING CAREER PATHS FOR YOUNG PEOPLE IN CANADA?’ YOUTH SAID:**

*“I am a big advocate [for clean energy]. All my friends who are looking for jobs, I tell them to look in the clean energy industry, it’s going to be around for our entire lifetime, you could retire here, you can grow your skills, all these other things. So I think there’s a very positive outlook for the industry as a whole and I think it’s going to continue to grow.”*

**Youth Interviewee**

*“Absolutely. I really think it does. And for all the different types of jobs in the green sector - they can be white collar, or they can be blue collar - as long as they’re green collar jobs. There’s so much opportunity out there. It’s an exciting time, and once you’re in, you’re set for life, because sustainability is not going anywhere. Climate change is not going anywhere in our lifetimes. We’re going to keep fighting climate change, for the rest of our living days.”*

**Youth Interviewee**

About 20% of youth were hesitant, and landed somewhere between answering “yes” and “no.” Some of these reasons included it still being difficult for many youth to get into the field, and the future of the industry being too political or variable. Some youth also expressed doubts around Canada specifically in relation to growth in the clean energy industry, and indicated they may be looking elsewhere for work in clean energy.

*“I think the ways in which young people want to get these jobs, there’s just a lot of barriers in the way in making that happen. Especially for low-income racialized youth, folks with disabilities, newcomers, women, folks who identify as part of the LGBTQ plus community. So I guess finding more ways to make that space more inclusive, and equitable, would be helpful.”*

**Youth Interviewee**

Lastly, about 10% of youth answered “no” to whether the future of the clean energy industry in Canada was promising. This was mostly based on their experiences struggling to get into the industry, low wages, and a limited job market in Canada specifically. This is significant, as it did not align with our expected results. This shows that while many youth, especially those already engaged in clean energy, maintain positive perspectives on the future of the industry and their role in it, it is not all youth who feel this way. Many youth who may have once been invested in entering the clean energy industry may turn away from the lack of opportunities and perspectives in the clean energy field.

*“I quite disagree. It’s not promising. It looks more like you fight your way through. You push your way through, you have to give it your all. It doesn’t look promising. It doesn’t. It just requires effort from your end as a young person to push and find your way and climb up the ladder.”*

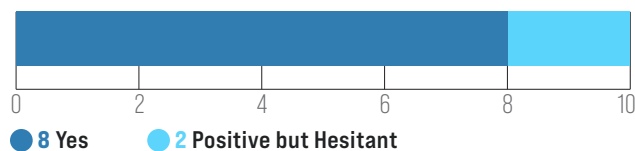
**Youth Interviewee**



When analyzed on demographic variables, we found some differences in the responses from youth. Only 50% of those who identified as low income youth, and 62% of those who identified as Indigenous or racialized answered “yes” to the question. This shows that significantly more youth who are low income or racialized are pessimistic or hesitant about the future of the clean energy industry. This data also shows that for those who are not racialized and/or Indigenous, the vast majority (87%) answered “yes” and none answered “no” when asked about whether the future of clean energy was promising. This correlates with the aforementioned systemic barriers that make it harder for marginalized youth to get jobs in clean energy, and easier for those with more privileges. This data indicates that there needs to be improved engagement from employers, governments, and organizations to improve access to the clean energy field for youth who are racialized or low income.

**EMPLOYER PROMISING CAREER PATH**

Industry actors were asked if they saw the clean energy industry as a promising career path for youth.



This same question was asked to industry actor interviewees, and we got slightly different responses. When asked if the clean energy industry is a promising career path for youth in Canada, every interviewee responded with a yes, and only two were slightly more hesitant in their yes answer. Most frequently, employers mentioned that the industry is continuing to boom, and is one of the most secure industries for youth to enter into. One interviewee mentioned that the more technical or specialized youth can get, the more opportunities may arise. Another interviewee compared the current boom in clean energy to Alberta during the oil expansion of the 1980s—a very exciting time to be getting into a newer industry with lots of growth to come.

*“[The clean energy industry is] probably the strongest career path today. I think that it’s an industry that’s just starting and that there is an unlimited future considering the amount of community scale energy infrastructure that needs to be created and operated.”*

**Industry Actor Interviewee**



Two participants said that the clean energy industry is a promising career path, but were more hesitant in their answer. One participant mentioned that they feared that getting into the industry could be a challenge, like it has been in their experience. They mentioned it is not a “get-rich-quick-scheme” but rather a lot of hard work to get into the industry and succeed—but it is still very doable for youth who are passionate about the field. Another interviewee mentioned how much more work there is to be done to make the field more accessible to all youth,

including international students and new arrivals, Indigenous youth, women, and disabled youth.

As a parting question to both youth and employers, we asked them to sum up their view on the future of the clean energy industry in one word or a few words. To gather these thoughts on the comprehensive view on the future of clean energy in Canada, we made a word cloud below. We gathered these responses and grouped them into four categories: positive, positive but hesitant, neutral, or negative.

### PERSPECTIVES ON THE FUTURE OF CLEAN ENERGY INDUSTRY IN CANADA

Answers to the question: In one word or a few words, how would you describe the future of the clean energy industry in Canada?

**Wordcloud: Answers created by repeating words.**





## PERSPECTIVES ON THE FUTURE OF CLEAN ENERGY INDUSTRY IN CANADA

Answers to the question: In one word or a few words, how would you describe the future of the clean energy industry in Canada?

Table: Total of Answers

25 total Positive	18 total Positive but Hesitant	14 total Neutral	5 total Negative
<u>The future of the world</u>	<u>Promising but politics</u>	<u>Developing</u>	<u>Slow</u>
<u>Abundant</u>	<u>Hopeful there could be a clean energy future</u>	<u>Growing [2]</u>	<u>Moving</u>
<u>Promising [3]</u>	<u>Only getting better</u>	<u>Immature</u>	<u>Highly Politicized</u>
<u>Hopeful [3]</u>	<u>Could be good if slow but holistic progress</u>	<u>Need more systems change</u>	<u>Not Promising</u>
<u>Optimistic [3]</u>	<u>Positive, but lagging behind other countries</u>	<u>Skeptical</u>	<u>Fragile</u>
<u>Progress</u>	<u>Going to grow if gov't changes strategies</u>	<u>Evolving [2]</u>	<u>Red Tape</u>
<u>Bright [3]</u>	<u>Lots of work to do that is slowly getting done</u>	<u>Needed</u>	
<u>Growth</u>	<u>Two edged sword—good if expends but Indigenous communities might be harmed</u>	<u>Necessary</u>	
<u>Exciting</u>	<u>Optimistic but aware of obstacles</u>	<u>Learning</u>	
<u>Community</u>	<u>Optimistic but uncertain</u>	<u>Improvable</u>	
<u>Youth</u>	<u>Evolving but depends on who's in power</u>	<u>Potential</u>	
<u>Productivity</u>	<u>Optimistic, but depends on elections</u>	<u>Indigenous</u>	
<u>Opportunity</u>	<u>Pessimistically hopeful</u>		
<u>Positive</u>	<u>Cautiously optimistic</u>		
<u>Progressive</u>	<u>Promising, need to put in effort</u>		
	<u>Hopeful, lots of areas for improvement</u>		
	<u>Hopeful, needs to be more accessible</u>		
	<u>Opportunity to get there, uncertainty if we're gonna try</u>		



Two thirds of the responses we got to this question from youth were positive, or positive but hesitant. The most frequent of the responses were words such as optimistic, hopeful, bright, and promising. This indicates that in general, youth have a very positive outlook on the future of the clean energy industry in Canada!

Eighteen responses we gathered were categorized as “positive but hesitant.” This means that they used a word or phrase that was positive, such as hopeful or optimistic, but followed it up with a statement that expressed some hesitation or wariness about their surety. For example, some youth indicated that their optimism was dependent on who is in power, how elections play out, and if Indigenous communities are at the forefront of this progress. Others expressed uncertainty about if we’re going to get to a net-zero energy future, frustrations at how slowly things are progressing, and awareness of how Canada is behind other countries in their progress. Ultimately, through these responses, it shows that youth have the foresight that a clean energy future is possible, and the critical thought to analyze what needs to change in order to get there.

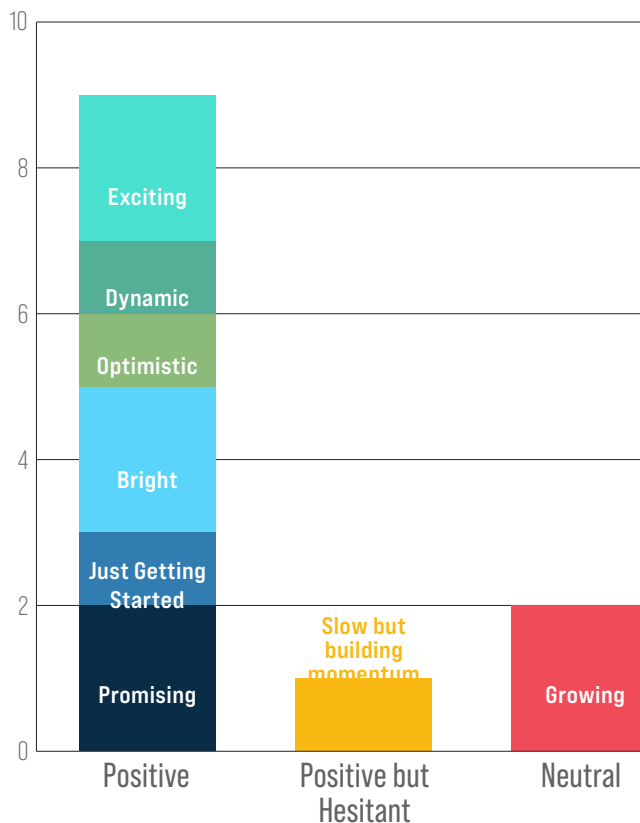
A few terms were used that were more neutral in character. This included words such as necessary, potential, immature, evolving, and Indigenous. These terms often indicated that there is some direction that the clean energy industry is headed, or could head, but it was not a word that was inherently positive or negative.

Lastly, five youth used terms we classified as negative, as they expressed a more pessimistic view on the future of the clean energy industry in Canada. These words included slow-moving, fragile, and highly politicized. While these

negative terms occurred at a much lower frequency compared to those that were positive, these answers show that there are some youth in Canada who do not have an optimistic view on the future of clean energy. Even removing themselves from the question and talking about the industry as a whole, some youth do not believe that Canada is on track for a positive clean energy future. This is telling, as it is also coming from some of the youth who are most engaged in Canada’s clean energy industry as a whole. This is a clear sign that there is much more progress that Canadian industry actors, organizations, and governments need to do to prove to youth that there is a clean energy future in Canada.

### INDUSTRY PERSPECTIVES ON THE CLEAN ENERGY INDUSTRY IN CANADA

Industry actors were asked: In one word or a few words, how would you describe the future of the clean energy industry in Canada?



This same question was asked to industry actors at the end of their interviews. The answers appeared in a similar frequency to the answers of youth. The majority of words used were classified as positive, with the most common words being exciting, optimistic, and promising. Other words such as dynamic and “just getting started” were also mentioned. For people who are in the industry and have been for a while, these words reflected a lot of the optimistic perspectives they shared on the importance of this industry and the integration of youth into the industry.

One positive but hesitant response that came up was “slow but building momentum” which referred to the pace of which clean energy projects and investments are headed. The word “growing” was classified as a neutral word and appeared twice in these interviews. There were ultimately no negative words used by industry actors. In comparison to the words used by youth, this shows us that youth are still slightly more skeptical of the progress of the clean energy future in Canada than industry actors and employers.







# ELDER AND KNOWLEDGE KEEPER CONSULTATIONS



## Elder Consultations:

While developing this report, there was recognition that this project could be enhanced with Indigenous traditional knowledge and perspectives from elders and traditional knowledge holders. Youth are a central part of this report, but there additionally needs to be historical and cultural understanding of Canada's colonial influence and the impacts this has on the clean energy industry.

After interviewing youth and industry actors, Student Energy interviewed two Indigenous knowledge keepers in hour-long, unstructured interviews. We proposed our initial findings from the report, highlighting some of the themes arising from the interviews and emphasized what Indigenous youth brought to the conversations. Additionally, we kept things open for the

knowledge keepers to share their thoughts on the clean energy industry, share what impacts they have seen on the land and communities they interact with, and recommendations on how youth and clean energy industry actors should work towards reconciliation and decolonization.

In the following pages are outlined some of the main recommendations from the Indigenous knowledge keepers Student Energy interviewed. Based on some of the themes, we have organized their major recommendations for Indigenous youth, allies, institutions, industry actors, and governments, keeping some of their direct thoughts in the boxes below. While many of these recommendations have been recognized, they often need to be reiterated in order to ensure accountability and action.

## Recommendations for Indigenous Youth

Oral knowledge transfer has been the basis of Indigenous knowledge since time immemorial. Indigenous practices are rooted in sustainable environmental stewardship. Knowledge keepers stressed that these wisdoms need to be at the forefront of all innovation within future development, and Indigenous youth are stewards of this knowledge. Elders noted that Indigenous youth should strive to retain and revitalize cultural teachings and spiritual values and integrate their learnings into business practices and project planning within clean energy development.

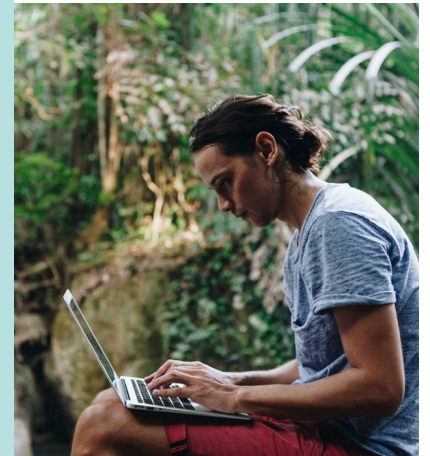
Knowledge keepers recommended that Indigenous people stay involved in proponents'

development applications and activities within their traditional territories and local policies in their municipalities and provinces. Holding clean energy projects and actors accountable to stewarding the land is of crucial importance.

A suggested way to implement these recommendations is through deep community consultations, focus groups, and 'What We Heard' reports. Community members, elders, and knowledge keepers can be assigned to communities to reach out to for these meetings, and youth should seek their knowledge as much as possible in the work that they do.

### Key Points from Knowledge Keepers:

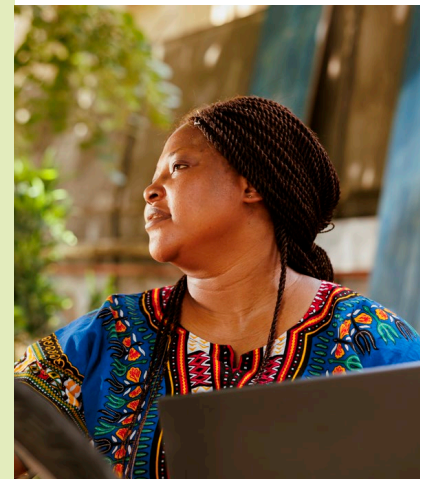
- Youth need to vote and be politically engaged
- Youth should try to learn cultural teachings and use them to guide all the work they do
- Youth should stay updated on projects and proposals within their territory
- Elders and knowledge keepers need to be identified, vetted, respected, and consulted for the projects and work that youth do



## Recommendations for Allies

### Key Points from Knowledge Keepers:

- There should not just be Indigenous struggle - all people of conscience need to step up and demand better. In such a wealthy country, Indigenous people should not face the types of inequalities that they do
- Allies in grassroots movements need to show leadership and to hold Indigenous communities up - they should not speak over Indigenous people, but raise up Indigenous voices
- Allies should step up and address injustices happening in institutions that hold power, such as when land protectors are criminalized



In the spirit of reconciliation, knowledge keepers are seeing more non-Indigenous allies within communities, organizations, and the clean energy industry. However, allyship needs to be expanded upon. Efforts are still unsatisfactory and allies need to continue to repair those historical and current injustices faced by Indigenous peoples through colonization and capitalism.

Knowledge keepers indicated that Indigenous communities and organizations count on allies within grassroots movements to hold

Indigenous communities up. While sovereignty is a strong skill that many Indigenous peoples and communities possess, allyship helps Indigenous peoples navigate the imposed colonial structures and raise Indigenous voices higher. Allies should never speak for Indigenous people, but instead hold other settlers and settler institutions accountable to the needs and desire for change coming from Indigenous people.

It was noted in the consultations that oftentimes, Indigenous peoples and communities are

criminalized for land protection, development interventions, and protests. Allies should use all the tools they can access, including power within legal and governmental institutions, to ensure the rights and knowledge of Indigenous people

are protected. Ensuring Indigenous communities are respected, heard, included, and honoured through just and equitable allyship will catalyze Indigenous-led and Indigenous involved projects and developments.

## Recommendations for Educational Institutions

### Key Points from Knowledge Keepers:

- Traditional education should be seen as equal to academic education, and opportunities to access this should be funded and encouraged
- There should be regular sources of funding for Indigenous youth to access education, not simply short-term, one-off funding opportunities
- In-community training should be prioritized - youth should not have to always leave their communities to access training programs
- Education needs to be fun - arts and culture are integral parts of education and social movements alike, and joy needs to be at the forefront of any learning



Knowledge keepers noted that institutions play a large role in the advancement of Indigenous youth within the clean energy sector. One of the barriers for remote communities is the capacity to provide training in communities. It is recommended that traditional and land-based education needs to be funded through regular funding sources for Indigenous youth to learn and for traditional teachings to be maintained. Oftentimes, funding is short term or small-scale.

Larger and consistent funding can ensure the sustainability of learning and capacity building.

To avoid burnout from the demands of colonial structures and the push for an energy transition, knowledge keepers expressed the importance of creativity and self care. Institutions need to promote arts, culture, and fun into the education youth receive, and will encourage youth to integrate joy into their work.

## Recommendations for Industry Actors

### Key Points from Knowledge Keepers:

- Companies need to study the impacts of any clean energy project they intend to do, including the mental, spiritual and physical health of people, communities, and the natural world
- When consulting for new projects, Indigenous people should be included right from planning and idea stages, and should approach the community and knowledge holders, not just elected officials
- Focus groups and meetings need to be held when new projects are being started - youth, elders, and knowledge holders all need to be involved
- Energy companies need to share any profits they make from these projects with the community being affected
- Indigenous people should not just be in labour positions - they should equally be represented in planning, management, and decision-making



Knowledge keepers emphasized that the energy industry, including the clean energy industry, has historically excluded Indigenous peoples and imposed environmental injustices on their territories, extracting and capitalizing on their resources with no profits shared or reparations given. In the spirit of reconciliation and working together for a just and sustainable energy future, it is recommended that industry honour and practice Indigenous rights to prior and informed consent.

There have been many publications and policies outlining recommendations on how to repair these relationships and how to move forward to ensure equality in future projects. The United Nations Declaration of Indigenous Peoples and the Truth and Reconciliation Commission of Canada's 94 Calls to Action were created for industry and governments alike. Knowledge

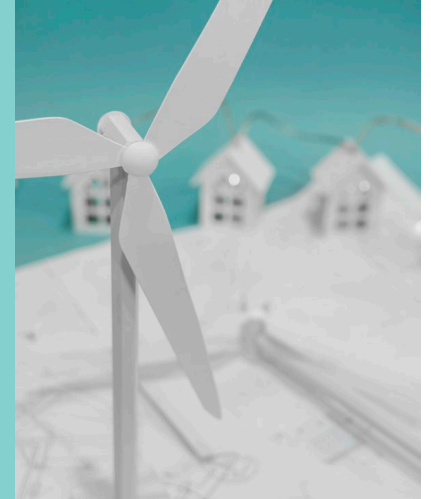
keepers reiterated these recommendations, and relayed that the clean energy industry must include Indigenous peoples at all levels of project development.

To ensure that projects are informed with Indigenous environmental knowledge and led by Indigenous recommendations, industry must intensively consult through community information sessions, stakeholder interviews, knowledge keeper consultations, consent conversations, land-use studies, and 'What We Heard' reports. Additionally, knowledge keepers stated that communities should be given resources to study, measure and mitigate the impacts of these new developments themselves, including on the impacts on plants, animals, and the mental, physical, and spiritual health of people.

# Recommendations for Governments

## Key Points from Knowledge Keepers:

- Indigenous people need to have more decision-making power and sovereignty over their lands and communities, including what clean energy projects go forward
- Governments need to consult with and gain consent from the community and knowledge holders for energy projects, not just elected officials
- Indigenous communities should see tangible benefits from any projects done on their lands or in collaboration with nations - this includes profit-sharing, employment opportunities for people in the community, and decision-making being kept locally



Similar points were made on the recommendations for and responsibilities that governments have to Indigenous people. Knowledge keepers emphasized that any decisions made in regard to how land will be used or impacted by clean energy projects should be made by the people Indigenous to that land. This means that decision-makers should be involved from the beginning by governments intending to approve or start clean energy projects on Indigenous territory.

Additionally, it was brought up that governments need to consult with the people of communities themselves, not simply Chiefs, councils, and elected leaders. Elders, knowledge keepers, and the people who make up communities need to also be able to take part in consultations. Government officials and political representatives need to build relationships with and listen to Indigenous communities, not just the leaders.

Knowledge keepers also mentioned how important it is for tangible benefits to make it to Indigenous communities who partner with or are impacted by clean energy projects. Any profits made by clean energy companies on Indigenous land should be shared with the people of the community. Additionally, work opportunities should be supplied to people in the community, and these opportunities should be meaningful and include decision-making.

Overall, knowledge keepers provided a wealth of knowledge for this report, and kept the bigger picture of Canada's history and current landscape in mind when discussing the clean energy industry. It is our hope that these recommendations can be taken up by Indigenous youth, allies, educational institutions, industry actors, and governments in order to build a more sustainable and holistic energy future that respects the knowledge of those Indigenous to the land we are on.



# LIMITATIONS

While this report has contributed to filling a gap in the knowledge on youth skills in the clean energy industry, there are some limitations to this research.

Firstly, the research participant pool was a small sample of the broader spectrum of youth in Canada. We chose a smaller sample size of 50 in order to get deep, qualitative data from our participants. Yet because of our smaller sample size, we were not able to get as wide of a sample to gather our data from. This means that, while still a proportionate sample size to the research we wanted to collect, some perspectives may be missing.

Additionally, the ways in which we collected our sample could have left out some perspectives. While we gathered insights from almost every province and territory, had a fairly equal balance of genders, and ensured we were seeking out racialized and Indigenous voices specifically, we may not have been fully represented.

When sourcing our youth we utilized connections within Student Energy, partner organizations, and open calls through our social media channels. Additionally, to get some participants outside of our network, we searched on LinkedIn for youth who were in positions in the clean energy industry. While these were the participant pools we were able to access, it is possible our sample was thus skewed towards youth who are already in, or very involved in, the clean energy industry. While this yielded some great data collected, it

is important to note that we only interviewed youth who were in, or have applied to, jobs in clean energy. This means we did not collect the perspectives of youth who are interested in the field but have not found a way to get involved yet. Additionally, the majority of the youth we interviewed had or were participating in some form of post-secondary education or training, most commonly at a university.

As for industry employers, due to the limited availability and responses, we conducted interviews with 10 participants. These conversations were very fruitful and yielded some very important conversations and perspectives. Yet we were not able to interview some of the largest clean energy employers in Canada, thus missing out on some valuable perspectives from large employers. Through our interviews, we were able to speak with folks who had a close hand at running and hiring their business or organization, which was really useful in gaining a thorough understanding of trends they are seeing.



# CONCLUSION

YOUTH	BOTH	CLEAN ENERGY EMPLOYERS
<b>What is the perceived most important skill set to get a job in the clean energy sector?</b>		
Technical Skills	Communication Skills	Soft Skills
<b>What skills do young people have, and what skills are clean energy employers looking for?</b>		
<ul style="list-style-type: none"> <li>• Adaptability</li> <li>• Project Management</li> <li>• Curiosity</li> <li>• Drive</li> <li>• Energy technologies</li> <li>• Data skills</li> <li>• Public speaking</li> <li>• Writing</li> <li>• Critical Thinking</li> <li>• Climate Communications</li> <li>• Networking</li> </ul>	<ul style="list-style-type: none"> <li>• Passion (for clean energy, environment, or in general)</li> <li>• Relationship Building</li> <li>• Self-awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Reliability</li> <li>• Independence</li> <li>• Teachability</li> <li>• Basic computer skills</li> <li>• Active listening</li> <li>• Interpersonal Communication</li> <li>• Trustworthiness</li> </ul>
<b>What are the perspectives on the future of Canada's clean energy industry?</b>		
<p>Youth are optimistic, but critical about barriers that may prevent a clean energy future. They need to see more commitments from employers and governments to accelerate growth in this industry.</p>	<p>Clean energy offers promising career paths for youth in Canada</p>	<p>Clean energy employers are optimistic about the future of Canada's clean energy industry, and recognize that they need to support youth as the next generation of leaders in the sector.</p>
<b>What supports do youth in Canada need in order to access the clean energy industry?</b>		
<ul style="list-style-type: none"> <li>• More entry-level jobs made available</li> <li>• Central spaces for finding jobs</li> <li>• Employers to build relationships with youth</li> <li>• Co-ops, internships, and hands-on work experiences</li> </ul>	<ul style="list-style-type: none"> <li>• More coordination between various actors in the industry</li> <li>• Timely information on the labour needs in the sector</li> <li>• Mentorship opportunities</li> <li>• Funded training opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• More government funded training and education</li> <li>• More consistent government funding for clean energy programs and companies to operate</li> <li>• Government support for youth wage subsidies</li> </ul>



Overall, this report aims to close some of the gaps in the existing research around youth skills and perspectives in the clean energy industry. To summarize the major findings in this report, we come back to the research questions that introduced this project.

### **What are the gaps between the skills that young people have, and the skills that clean energy employers in Canada are looking for?**

Youth in clean energy self-identify their top skill sets as being communication and technical skills. This is slightly different from the top skill sets industry actors are looking for: soft skills and communication skills. When showcasing skills or looking for new skills to develop, youth should pay close attention to the soft and communication skills required in almost all roles across the industry. Employers want to see young people who can integrate well with their teams and communicate effectively, not necessarily have all the technical skills that can often be taught on the job.

Employers are looking for youth who are passionate about clean energy, reliable, self-aware, and teachable—skills that can be developed outside of clean energy work experience. Evidently, there is a slight gap in the skills that youth showcase and the skills employers are looking for, but with this knowledge, youth can shift how they present their skills to future employers.

### **What are young people's perspectives on Canada's clean energy economy, and on the availability of opportunities and pathways to access careers related to clean energy?**

Overall, youth are optimistic about the future of the clean energy industry but remain hesitant about some of the issues preventing us from getting there. Two-thirds of the youth we interviewed expressed some level of optimism when speaking about the clean energy future and their role in it. Yet an element of criticality remained in many answers, with some doubts about our current pathway to progress. There are clear expectations from youth that the clean energy industry in Canada has a lot of work to do for a clean energy future.

### **What supports do youth in Canada need, and from whom, in order to access the clean energy industry?**

Youth in Canada require both industry actors, educational institutions, and governments to step up and provide support. While those specific needs vary based on the actor, common points include mentorship, more cooperation between siloed parts of the industry, training programs, and timely information on the industry. From industry employers, youth need to see efforts to build relationships with youth, more entry-level jobs, more co-op and internship opportunities, and supporting youth with proper work-life balance. From academic institutions, youth need more support with job searching, hands-on learning opportunities, accessible work opportunities, and specific, relevant credentials. From governments, youth want to see more funding for entry-level positions, more government-funded clean energy projects and programs, more support with scholarships, and employment policies to better support youth in the sector. Overall, youth were clear and directive about their needs and what supports would help them land jobs, and make sure the clean energy industry progresses.

Ultimately, there is a role for all to play in making the clean energy industry a more accessible space for youth. In order to work towards a clean energy future that is effective, we need to have youth at the forefront. And in order for youth to lead the way, we all need to act to ensure youth can take up their roles in the clean energy industry.





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