

ENERGY TRANSITION
SKILLS PROJECT

INITIAL FINDINGS

NOVEMBER 2022

STUDENTENERGY



INTRODUCTION

The Energy Transition Skills Project led by Student Energy, in partnership with Ørsted, aims to explore the emerging global skills gap in the energy transition, and how companies and governments can address this gap by investing in young people and by aligning with their needs and aspirations. As the world moves towards a more sustainable energy future, the employment demand in clean energy-related jobs is predicted to grow; with more than half of the global population under the age of 30, young people must be included in the energy transition workforce to bridge labour shortfalls and ensure decent jobs for youth. As such, the project aims to answer the following key research question: **How can energy actors align with the needs and aspirations of young people to meet the energy transition's workforce demands?**

The Energy Transition Skills Project explores this question through two components:

1. Surveying 5,000 global youth between the ages of 18-35 to understand what young people are looking for in a job that supports the energy transition and the barriers they face when pursuing these jobs;
2. Consulting key stakeholders in energy and labour such as energy companies, labour organizations, governments, and educational institutions to see whether the aspirations of young people align with the anticipated needs of the energy transition.

Since starting this project in August, Student Energy has conducted a literature review to better understand current energy and labour market trends and whether similar research has already been done to understand the needs and aspirations of youth when searching for employment that advances the energy transition. We have also launched the Energy Transition Skills Survey to address the first component of the project and have gathered 1,275 responses as of October 31, 2022. This report outlines initial insights the team has found from our literature review and the survey responses that have been collected so far.

LITERATURE REVIEW

When conducting our literature review, we aimed to understand what existing evidence, literature, and research indicate regarding:

- Current energy and labour market trends and the skills needed to meet labour demand
- The needs and aspirations of youth when searching for employment that advances the energy transition

The literature reviewed thus far includes sources from academic journals, energy companies and organizations, and labour and employment organizations. Below are some key insights.

ENERGY AND LABOUR MARKET NEEDS

- According to the IEA's Net-Zero Emissions (NZE) Scenario, over 30 million jobs will be created in low carbon technologies by 2030 (Cozzi & Motherway, 2021).
- The IEA's World Energy Employment report highlights that there is a large demand for high-skilled labour across the energy sector (Chen & Wetzel, 2022). Some specific, sought-after employment capabilities include interdisciplinary skills (ex. entrepreneurship, legal literacy, self-management, etc.), digital skills, sustainability skills, active listening, speaking, and critical thinking (Arcelay et al., 2021, p. 4 – 5).
- Multiple sources point to the energy sector's shortage of employees and skills as being due to the overall aging of the workforce and early retirement (Brunel, 2022, p. 8), high turnover, and competitive hiring environments for employees with skills that are in high demand across the sector (Chen & Wetzel, 2022, p. 21). The oil and gas industry also faces the challenge of workers leaving the industry and moving to other markets, such as renewable energy (Exarheas, 2022).
- Many organizations struggle when it comes to recruiting and retaining young talent, and diversifying their workforce.
- New graduates and young talent often do not have the right skill sets employers are looking for. For example, 70% of employers and educational institutions that were surveyed for Electricity Human Resources Canada's research felt students and new graduates had gaps in some of the skills needed for the Canadian electricity sector (Skill savvy: Professional skills needs for Canada's electricity sector, 2020, p. 18).

YOUTH NEEDS AND ASPIRATIONS

- According to the Deloitte Global 2022 Gen Z and Millennial Survey, young people generally prioritize salary, work/life balance, and opportunities for growth when choosing an employer. They are also more likely to stay at a company for their social and environmental impact, efforts to improve diversity and inclusion, and if their values align with those of the company (Deloitte, 2022).
- Some barriers youth face to employment include lack of access to resources, lack of knowledge about potential careers and what skills are needed, lack of opportunities, tools and training, others' lack of belief in the ability of youth, and other systemic issues (Armstrong et al., 2018, p. 11).

While there is existing evidence surrounding young people's perspectives on the general future of work and on their opinions on specific energy industries, there is a lack of research on global youth perspectives on jobs related to the energy transition as a whole. The Energy Transition Skills Project aims to address this gap to understand and highlight young people's perspectives specifically when it comes to working on the energy transition.

INITIAL SURVEY INSIGHTS

DEMOGRAPHIC STATS

- The majority of respondents are between the ages of **25-35 (67.84%)**. In our final report, this age group will be broken down and analyzed by splitting these into respondents aged 25-30 and 31-35, respectively.
- The highest level of education for most respondents is the **undergraduate level (40%)**.
- The **largest proportion** of responses comes from **Sub-Saharan Africa** with **15.39%** while the **smallest proportion** comes from the OECD Pacific region (Australia, Japan, New Zealand, South Korea) with **3.84%**.
- Respondents include **49.88%** of respondents identifying as men, **47.29%** identifying as women, and **1.8%** identifying outside the gender binary.
- In terms of experience and interest in energy, the most common response from respondents was that they are **interested in work that supports the energy transition, but don't know much about what jobs exist or how to get involved (38.67%)**. In addition, 6.2% of respondents said they currently work in the fossil fuel industry, 19.76% said they currently work in a job that supports the energy transition, and 14.75% said they are currently studying in a program related to the energy transition.

SURVEY QUESTION STATS

- About **88.94%** of respondents showed some sort of **interest in the energy sector**, the energy transition, or are already working in a job that advances the energy transition. Of these respondents who chose to answer, **45.13%** selected working at a renewable energy company as their ideal energy transition job.
- When asked to rank the importance of different aspects of a job, "Purpose of your work and ability to make an impact" was most commonly ranked as first (16.43%), followed by "Salary and compensation" (15.80%), and "Opportunities for growth" (14.22%). Overall, **46.5% of respondents ranked either Purpose of work, Salary, or Opportunities for growth** as most important.
- The **majority of respondents** think it is necessary to have a **STEM background** to work on the energy transition (**75.29%**).
- The most commonly selected answer for respondents when asked what barriers they have faced is **lack of awareness about existing job opportunities (48.39%)**, followed by lack of access to skills training (46.43%), and lack of available entry-level positions (44.16%) in close second and third.
- **57.33%** of respondents who received post-secondary education said that it has prepared them with the skills needed to pursue a career that advances the energy transition whereas 27.83% said it did not and 14.84% were unsure.

- The most common set of skills selected by respondents when asked about which skills they think are most important and valued in the labour market is energy-specific **technical skills and knowledge (38.04%)**.
- The majority of respondents (**61.10%**) **think skills training programs** would help them to pursue the jobs they are interested in. The second most common answer was internships, co-ops, or work-learn opportunities (47.61%).

DISCUSSION & INITIAL RECOMMENDATIONS

Initial insights from the data show that the needs and aspirations of youth in relation to energy transition jobs aligns with general research on what young people are looking for when it comes to employment considerations. Similarly to Deloitte's Global 2022 Gen Z and Millennial Survey, respondents of the Energy Transition Skills Survey prioritize **salary and opportunities for growth** when looking for work. However, when focusing on work that advances the energy transition, it appears that the **purpose of work and ability to make an impact** is also a top priority for respondents of this survey. When looking to attract and retain young professionals who are interested in working on the energy transition, **companies must offer positions that offer competitive salaries, opportunities for growth, and the ability to create a positive impact** that contributes to systems change.

It is also interesting to note that about 39% of respondents reported being interested in work that supports the energy transition, but that they are not aware of what jobs exist or how they can be involved. This aligns with the most commonly selected barrier that respondents face, which is a **lack of awareness about existing job opportunities** (~48%). Additional barriers noted by respondents was lack of access to skills training (~46%) and lack of available entry-level positions (~44%). This suggests that energy actors must not only **make more entry-level opportunities available** for youth, but they must also **improve the way they raise awareness about the existence of these opportunities** for youth to get involved.

While many respondents feel that their post-secondary education was helpful in preparing them with the skills needed to pursue energy transition jobs, it is important to note that there are still about 42.6% of respondents who feel their post-secondary education was not helpful or are unsure about how helpful their education was. This suggests that **employers and educational institutions should do more to prepare young people and equip them with the necessary skills for success**. Further analysis is needed to identify how certain demographics of respondents answered, particularly those who said they are in an educational program related to the energy transition.

NEXT STEPS

Following the project's official launch by Student Energy and Ørsted at COP27 in Sharm El-Sheikh in November 2022, the next phase of the project encourages youth to continue contributing their insights through our [Energy Transition Skills Survey](#), and invites organizations to take part in stakeholder consultations on the topic. Upon completion of the data collection, Student Energy's research team will analyze the data and develop a full report.

The final Energy Transition Skills report will be launched in early 2023, featuring deeper analysis of data from 5,000 youth respondents, qualitative and quantitative insights from youth and industry leaders, and a concrete list of recommendations for youth, governments, and industry to bridge the skills gap in the energy transition.

HOW TO GET INVOLVED

Youth

- If you are between the ages of 18-35, fill out the Energy Transition Skills Survey here: bit.ly/energytransitionskills-survey
- If you are a youth-led organization or group, reach out to megan@studentenergy.org to learn more about becoming an Outreach Partner to help promote the survey

Energy Actors

- Share the Energy Transition Skills Survey with your staff ages 18-35 and with your networks
- Reach out to megan@studentenergy.org if you would like to be considered for our stakeholder consultations
- Stay tuned for the final report of recommendations for energy actors in 2023

STUDENT ENERGY PROJECT LEADS

Megan Tran | Space for Youth Coordinator, megan@studentenergy.org

Shakti Ramkumar | Director of Communications and Policy, shakti@studentenergy.org

Lindsay Bell-Etkin | Manager of Partnerships, lindsay@studentenergy.org

ØRSTED PARTNERS

Nils Askær-Hune | Lead Public Affairs Advisor, Global Policy Engagement

REFERENCES

- Arcelay, I., Goti, A., Oyarbide-Zubillaga, A., Akyazi, T., Alberdi, E., & Garcia-Bringas, P. (2021). Definition of the Future Skills Needs of Job Profiles in the Renewable Energy Sector. *Energies*, 14(9).
<https://doi.org/10.3390/en14092609>
- Armstrong, K., Tetrick, R., Schwartz, J., Greenberg, R., Koziol, M., van Fleet, J. W., Burley, J., Santifort, S., & Parmelee, M. (2018, September). *Preparing Tomorrow's workforce for the fourth industrial ...* - deloitte. Deloitte. Retrieved September 13, 2022, from
<https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-preparing-tomorrow-workforce-for-4IR.pdf>
- Brunel. (2022). *2021/22 report - hiring.oilandgasjobsearch.com*. Oilandgasjobsearch.com. Retrieved September 13, 2022, from https://hiring.oilandgasjobsearch.com/hubfs/OGJS_Outlook_Guide_2022.pdf?hsLang=en
- Chen, O., & Wetzel, D. (2022, August). *World Energy Employment*. International Energy Agency. Retrieved September 13, 2022, from
<https://iea.blob.core.windows.net/assets/a0432c97-14af-4fc7-b3bf-c409fb7e4ab8/WorldEnergyEmployment.pdf>
- Cozzi, L., & Motherway, B. (2021, July 6). *The importance of focusing on jobs and fairness in Clean Energy Transitions – analysis*. IEA. Retrieved September 13, 2022, from
<https://www.iea.org/commentaries/the-importance-of-focusing-on-jobs-and-fairness-in-clean-energy-transitions>
- Deloitte. (2022). *The Deloitte Global 2022 Gen Z and Millennial Survey*. Deloitte. Retrieved September 13, 2022, from <https://www2.deloitte.com/global/en/pages/about-deloitte/articles/genzmillennialsurvey.html>
- Exarheas, A. (2022, August 24). *Oil and Gas Recruiters talk staff shortage*. Rigzone. Retrieved September 9, 2022, from
https://www.rigzone.com/news/oil_and_gas_recruiters_talk_staff_shortage-24-aug-2022-170092-article/
- Skill savvy: Professional skills needs for Canada's electricity sector*. Electricity Human Resources Canada. (2020). Retrieved September 13, 2022, from
<https://electricityhr.ca/wp-content/uploads/2020/03/EF-PS-Thought-Paper-English-Web-1.pdf>