

COMPETENCES FOR A SUSTAINABLE FUTURE REPORT

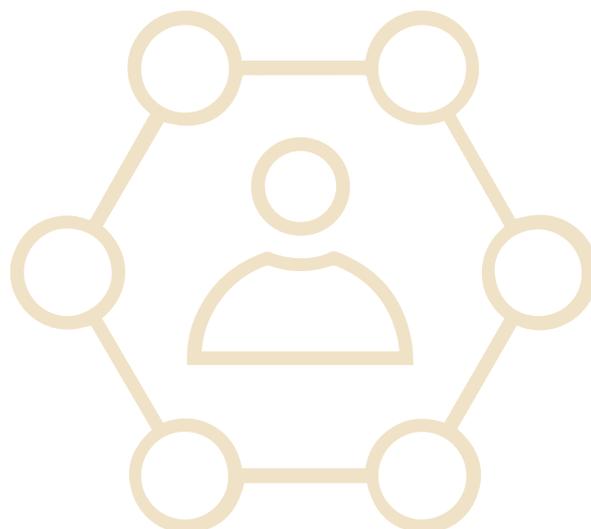


When we talk about the green shift or new tech solutions for addressing climate change, we proclaim engineers and other STEM professionals as the custodians of our smooth transition towards sustainability and net-zero emissions.

Politicians and industry are sounding the alarm about the catastrophic shortage of STEM talents to address the current and future challenges, but at the same time, it is unclear what concrete competences the industry needs to drive the green shift. In between are the higher education institutions, racing to adapt curricula to match the skills provision with the skills demand.

The Nordics have ambitious carbon-cutting strategies, and the region is considered a frontrunner in that regard. Each country has individual strengths in developing and deploying climate technologies. This report is a unique overview of specific technical and soft skills in demand for STEM professionals in the sectors such as Power-to-X, wind power, batteries, hydrogen, biomass, geothermal energy, and carbon capture storage and utilisation.

The report also identifies critical trends for climate technology development, including the electrification of society, systems thinking, data utilisation, soft skills, and attracting young talents in education. The recurring pattern in these key trends is the clear interdependency between the Nordic countries – the shared need for solutions and more robust value chains.



RECOMMENDATIONS FROM THE REPORT

Analyse the sector skill demand and align political incentives with the demands of the market

A stronger focus on securing the necessary competences and skills for climate technology is needed in the Nordics. Politicians talking in hypotheticals is not enough. Political strategies for the green transition must be better aligned with skills demand. There is a need for prioritising and investing in the large-scale mapping of the skills demand for the green technology sectors in the region. Securing the necessary competences and skills should be supported by relevant policies and research, development, and innovation subsidies targeted for the green transition

Adapt the higher education system to bridge skills gaps

Higher Education Institutions should benefit from public financial support to re-evaluate and adapt the educational programmes to secure the provision of specialists matching the skills demand. In addition, there is a need to enhance the cooperation between Nordic universities to bridge educational gaps as well as to incentivise educational and career measures that allow for a greater talent and knowledge flow between countries.

Invest in lifelong learning and reskilling in green technologies

Investing in education to upskill the existing supply of engineers and STEM professionals will be crucial to further the transition towards green solutions. The number of engineers already in employment far outweighs the output of new students, and the investment in green reskilling for the existing workforce will have an immediate and much more pronounced effect. Higher education programmes should be incentivised to offer more short courses and study modules on climate technologies explicitly developed for flexible upskilling and reskilling. Employers must also act in time to identify

upskilling needs and provide both space and time for competence development and life-long learning opportunities.

Use the green agenda to recruit and retain a diverse pool of young people for engineering and STEM programmes

The green transition provides an opportunity to motivate young people to make a difference by becoming STEM professionals. Many companies already use their green profile to attract the best talent. Similarly, higher education institutions could increase student retention and recruitment by adapting the profile of their engineering and STEM programmes. An explicit green profile may unlock a larger pool of applicants for STEM programmes and improve the diversity and gender balance.

Incentivise and increase Nordic knowledge sharing and collaboration

For the Nordic region to remain and become increasingly competitive within climate technology, there is a need for more substantial knowledge sharing and collaboration across borders, organisations, and sectors. It is essential to avoid a silo mentality to capitalise on the vast potential for exporting skills and know-how from the region. Expanding existing and building new collaborations between the private sector, STEM professionals, and universities is also recommended.

Harmonise climate tech legislation in the Nordics to create a broader market

Political collaboration across borders must increase. Shared energy strategies could, for example, be implemented bilaterally or across the whole region. The individual Nordic countries are small markets, but together they comprise almost 30 million people. Harmonising regulation for climate tech in the Nordics would help to scale up businesses in the Nordic market, which would then boost businesses in the global market.

Find the full report at nordicengineers.org

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