

SUMMARY

SKILLS NEEDED IN THE NORWEGIAN OFFSHORE WIND INDUSTRY TOWARDS 2035



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Preface

On behalf of Norwegian Offshore Wind and Tekna, Menon Economics has conducted a study related to the skills needed in the offshore wind industry. The aim of the assignment was to identify whether there is a gap between the skills that are in demand and the educational offerings, and further to assess how the potential gap can be addressed.

The study was led by Maren N. Basso with Henrik Motrøen Foseid and Ada Lunde as project associates. Even Winje was responsible for the assignment, and Sigrid Hernes was used as an expert resource. Erik Jakobsen was the quality assurer.

Menon Economics is a research-based analysis and advisory firm at the intersection of corporate economics, national economics, and industrial policy. We offer analysis and advisory services to companies, organizations, municipalities, counties, and departments. Our main focus is on empirical analyses of economic policy, and our employees have economic expertise at a high scientific level.

We thank Norwegian Offshore Wind and Tekna for the assignment. We also thank all respondents to the survey and interview subjects for their valuable input during the process.

This is the english summary from the published report *“Gigawatt krever megaløft - Kompetansebehov i den norske havvindnæringen frem mot 2035”*. The entire report is available in Norwegian on our website www.menon.no

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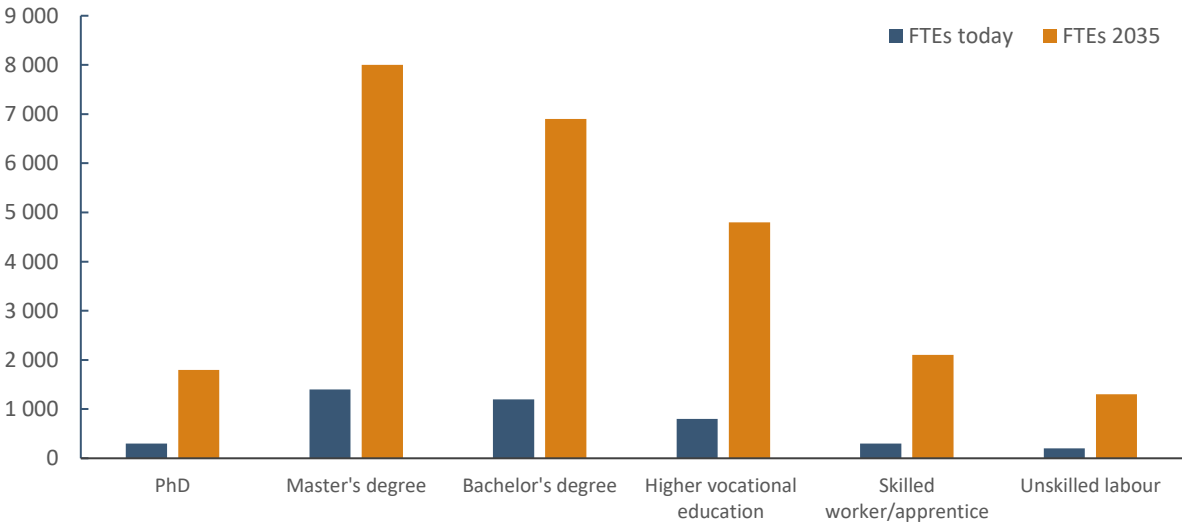
Maren N. Basso
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Summary

In May 2022, the Norwegian government launched an offshore wind initiative where the ambition is to allocate areas for the production of 30 GW offshore wind power in Norway by 2040. This equates an annual production of approximately 140 TWh, or Norway’s entire power consumption in 2021.¹ Later in the same year, in December, the authorities announced that the offshore wind industry would be included among the government’s strategic export initiatives in the export reform “Hele Norge eksporterer”.² In this connection, targets were set for the Norwegian supplier industry to take a 10 percent share of the global offshore wind market by 2030, which is estimated to entail a total international turnover of around NOK 85 billion a year. Given these ambitions, the offshore wind industry in Norway will grow significantly in the coming years. This will place new demands on the availability of qualified labour, both today and further into the next decade. To achieve Norway’s ambitious goals and to ensure further growth in the offshore wind industry, access to relevant and competent labour is essential.

Based on the authorities’ ambitions, i.e., the turnover target and the planned development nationally, we have estimated the employment needs in the offshore wind industry in 2030. Our estimates show that in 2030 there will be a need for close to 16,000 employees in the industry, while in 2035 there will be a need for close to 25,000³ employees. The figure below shows how the estimated employment need is distributed regarding education level.

Figure: Expected need for employees by education level for the offshore wind industry, today and in 2035. Source: Menon Economics



As shown in the figure above, an increased need for employees at all educational levels is expected, but it is at master’s, bachelor’s, and higher vocational level that this need is especially pronounced. In the period from today until 2035, it is expected that the number of employees with a master’s degree, bachelor’s degree and higher

¹ Andersen, I. (2022). Available [here](#).

² Regjeringen. (2022). Available [here](#).

³ It is expected that approximately 9,700 FTEs will be related to national employment, while the remaining employment will be export oriented.

vocational education will increase by 6,600, 5,700 and 4,000 FTEs (Full-time equivalent) respectively. Information on the expected level of education in the future workforce was obtained through surveys and interviews.

The value chain in the offshore wind industry is complex and consists of several activities, and there is great variation in the products and services supplied. A key finding in our mapping is that this is also reflected in educational needs and employment intensity. This has been considered in the aggregated figures above. EPCI suppliers, owners/operators and service providers have an expectation that employees with higher education (at bachelor's, master's, and PhD-level) will make up more than 75 percent of the workforce in 2035. On the other hand, actors in the value chain within areas such as ports and logistics or installation and assembly expect that employees with higher vocational education and skilled workers/apprentices will make up a larger proportion of the overall need in 2035, corresponding to slightly more than half of the workforce.

The need for skills and expertise, measured by field of study⁴ within the various education levels, spans a wide range of disciplines, but certain areas nevertheless stand out. Within higher education, there will be a particular need for engineering competence⁵. Mechanical, energy- and offshore engineering are the engineering disciplines that are needed the most. From higher vocational education the greatest need will be for employees with a background in technology and industrial subjects, as well as electricity and electronics and computer technology. The same applies to skilled workers and apprentices. Furthermore, we find that large parts of the skills that are in demand are in disciplines where a relevant education is offered by schools and universities already today. There are, however, some actors in the industry that have expressed a need to establish new subjects and fields of study that are specific to offshore wind.

Per now, our analyses indicate that the courses of study that are being offered are relevant with regards to the competence needs of the actors in the offshore wind industry. This applies to both generic fields of study such as engineering, technology, economics, and information and computer technology, as well as fields of study specifically aimed at the offshore wind industry. What we do find, however, is that there will be a *significant gap*, i.e., a deficit in relevant competence, because of too few places being available at the relevant educational institutions. To illustrate this, we have prepared two examples, one related to study places in engineering and technological subjects (bachelor and professional studies⁶) and one related to study places in higher vocational education. The first example (engineering and technological subjects) shows that there will potentially be a need to increase the number of study places by 380 places annually in the period from 2024 up to and including 2028. This means that in 2028 there will be a need for around 1,900 more places compared to what is available today. To put this in perspective, the number of study places in the respective subjects has increased by an average of 77 places annually in the period from 2012 to 2022. The example for higher vocational education shows that the need for the number of study places at the relevant institutions, all other things being equal, will be lower than for universities and colleges, as the course of education is shorter.

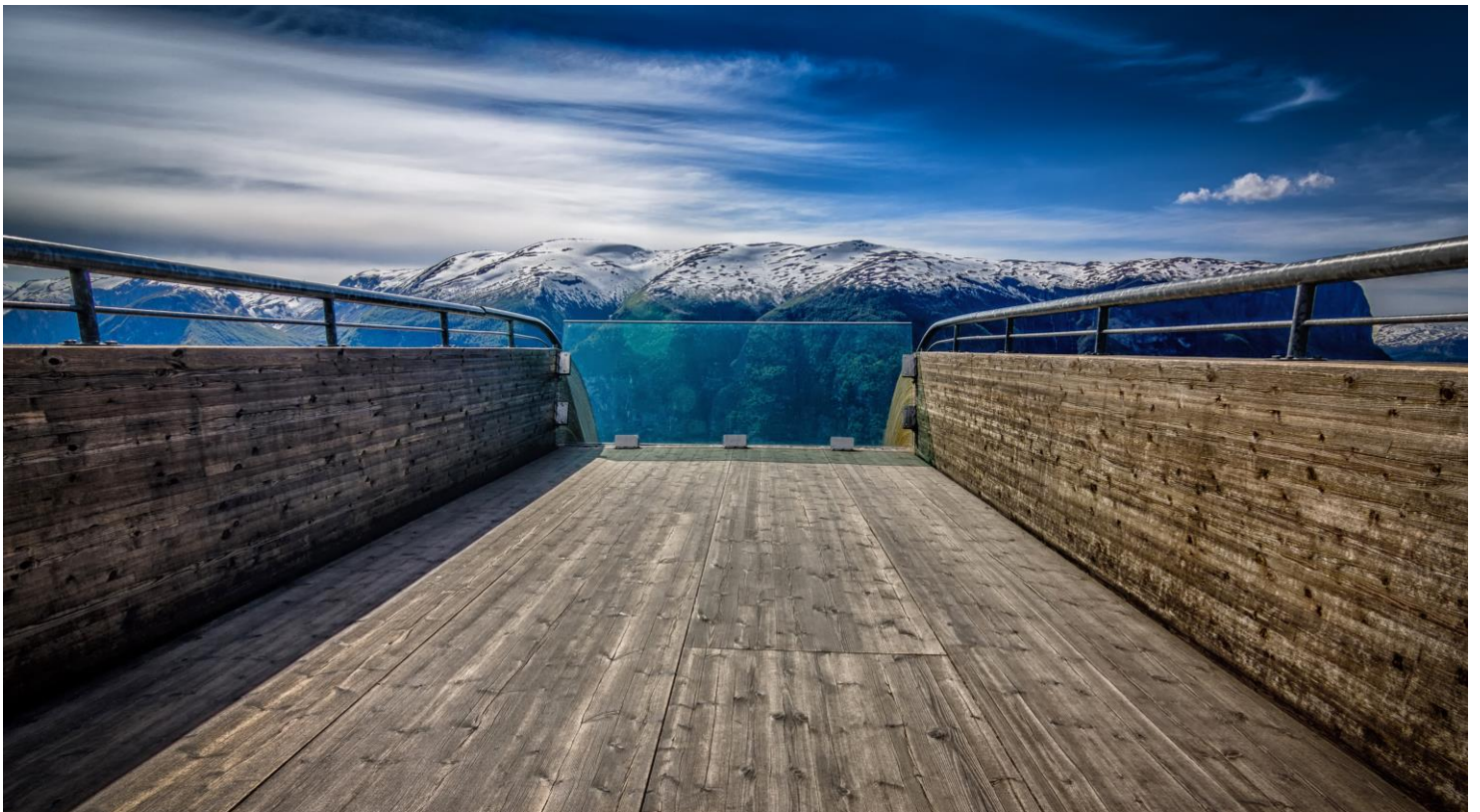
Furthermore, it will not be sufficient to only increase the number of study places, the pool of applicants also needs to grow. It is therefore essential to start planning for an increase in the number of study places already now, as well as increasing recruitment. This needs to happen in close dialogue with the industry to ensure that the supply of and demand for competence develop in step with each other. However, there is a need for more

⁴ Engineering, economics, technology, electricity & electronics, etc.

⁵ The need for engineering expertise accounts for approximately 40 percent of the total demand for individuals with higher education. Engineering competence is distributed across the following levels of education as the highest completed degree: PhD: 4 percent, MSc: 19 percent, BSc: 17 percent.

⁶ Including bachelor and master

employees in other industries as well, where large parts of the skills that are needed are the same as in the offshore wind industry. This means that the offshore wind industry must compete with other industries for the same skills and expertise. It is therefore uncertain whether the offshore wind players will have access to enough competent labour in the period up to 2035.



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