DIGIWIND

D1.5
GENDER AND DIVERSITY SCREENING
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D1.5 – GENDER AND DIVERSITY SCREENING

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14/06/2024	0.1	Patrick Driscoll (DTU), Tuhfe Göçmen (DTU)	Reviewed, with comments
26/06/2024	0.2	Elena Stroo-Moredo (TUD)	Processing comments and feedback, including diversity screening team members

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Executive summary

This document describes the results of a diversity screening conducted for the Higher Education Institution (HEI) partners of DigiWind over the last five academic years. The data analysed in this screening was limited to student numbers, gender, country/region of origin and age per (entry) year. More extensive diversity data such as social and economic background was not available at the HEIs and therefore not included.

Gender diversity is an important topic that goes beyond the scope the DigiWind project. Developing a Gender Equality Plan (GEP) requires understanding and analysis of complex relations within society. Different societal, economic and cultural aspects play a role in each country. The HEIs involved in this screening have their own diversity, gender, and inclusion strategy in place.

The HEI partners that were screened are: Danmarks Techniske Universitet (DTU), Technische Universiteit Delft (TUD), Norges Teknisk-Naturvitenskapelige Univeristet (NTNU), Technological University of the Shannon Midlands Midwest (TUS) and Politechnika Gdanksa (PG). For each HEI, both at the MSc's and master's level programme as well as continuing education courses for professionals. The Specialised Education Programmes (SEPs) considered are part of the scope of DigiWind. Not all HEIs have already wind and energy system SEPs in place but will develop them during DigWind. In this case the HEIs have provided data of similar, comparable engineering SEPs.

The DigiWind project team has also been screened for diversity. These numbers have been compared to that of the SEPs but also to several targets of leading companies in the industry. Based on this comparison targets have been set for the diversity of the DigiWind team member, specifically those in public and visible positions, such as teachers and spokespersons of Wind Energy.

Contents

Definitions, Acronyms and Abbreviations

Acronym/ Abbreviation	Title
EU	European Union
EWEM	European Wind Energy Master
GDPR	General Data Protection Regulation
GEAR	Gender Equality in Academia and Research
GEP	Gender Equality Plan
HEI	Higher Education Institution
MSc	Master of Science
SAP	Short Advanced Programme
SEP	Specialised Education Programme
STEM	Science, Technology, Engineering and Math
WP	Work Package

Table 1 – DigiWind Consortium

Participant Number	Participant organisation name	Short name	Country
1	Danmarks Tekniske Universitet	DTU	DK
2	Technische Universiteit Delft	TUD	NL
3	Norges Teknisk-Naturvitenskapelige Universitet	NTNU	NO
4	Technological University of the Shannon: Midlands Midwest	TUS	IE
5	Politechnika Gdanska	PG	PL
6	Universitetet I Oslo	CCSE	NO
7	F6s Network Ireland Limited	F6S	IE
8	WHIFFLE BV	WHIF	NL
9	Cadpeople A/S	CADP	DK
10	Irish Manufacturing Research Company Limited By Guarantee	IMR	IE

1 Introduction

1.1 Project Information

This deliverable provides the first diversity screening for the DigiWind project. All Higher Education Institutions (HEIs) that will develop or enhance and execute a Specialised Education Programme (SEP) will be screened for diversity considerations. The diversity parameters laid out in the project plan are gender, age, social and economic background. Tools and guidelines used for the screening are the GEAR toolkit [1] and the Gender Mainstreaming Toolkit for co-operating projects [2] by the Council of Europe.

The HEIs that participated in this screening are DTU, TUD, NTNU, TUS and PG (see also Table 1 for DigiWind Consortium). The goal of the screening is to create a baseline or a benchmark, for each HEI and SEP. Periodic updates and reviews will be made (M17, M35 and M47) and these will be compared to the baseline as reported in this deliverable. A period of five academic years has been chosen to view and analyse the data. This will eliminate any anomalies per year and provide a more reliable benchmark.

In case an HEI will develop a Specialised Education Programme (SEP) within Work Package (WP) 3 and/or WP4, diversity data has been gathered from similar STEM programmes at the same HEI. As soon as the newly developed SEPs start, their diversity numbers will be listed and compared with those of the similar STEM programmes at the same HEI .

When gathering and analysing personal data, General Data Protection Regulation (GDPR) should be complied with, as well as D1.3 Data Management Plan for DigiWind [3]. This also holds for the HEIs involved and the data that they have available of their students or that they are allowed to share. The data available for the screening as presented in this report is, limited to gender, age and country/region of origin. Any social or economic background information was not available at the HEIs, instead we added the country/region of origin. In the case of the latter, the distinction was made between nationals of European Union (EU), and outside EU.

1.2 Gender diversity, equity and inclusion

Gender diversity, equity and inclusion is an important topic in all HEIs and it transcends the scope of solely the DigiWind project. Diversity and inclusion strategies should be designed and laid out from BSc level to PhD level at the HEI's [1]. Cultural and societal aspects within one country or even region within a country may also affect the diversity of students enrolling in HEIs [2].

Prior to developing strategies, data needs to be gathered and properly analysed. This data includes e.g. social and economic background, migration or ethnic background, political climate, societal and cultural aspects, etc. Such analyses fall within the scope of social studies, and therefore, it is not possible within DigiWind to develop a Gender Equality Plan (GEP) for the scope of the project.

All HEIs involved in the project have diversity and inclusion strategies or policies in place:

- DTU Diversity, Equity and Inclusion [4]
- TUD Diversity and Inclusion [5]
- NTNU Development plan for Gender Equality and Diversity 2023-2025 [6]
- TUS Strategic Plan [7]
- PG Strategy on Equal Treatment [8]

Each HEI must comply with their own strategies or policies.

This means that no one may be excluded from access to or participation in any of the activities, from learning to research, from development to teaching, of the DigiWind project based on who they are. DigiWind should provide equal opportunities for every student, employee, and staff member and will not allow for any form of discrimination.

DigiWind is committed to increasing gender diversity within Wind and Energy Systems education and in a broader sense STEM education. Role models are important for minority groups (in their representation in STEM universities), as they serve as an inspiration and most of all, it is proof of what is possible. From this point of view, the diversity numbers of the project team have been analysed and compared to target numbers of some of the leading companies in the industry.

In future updates, we will include the gender diversity of the educators of the DigiWind courses, as they are the forefront of Wind and Energy Systems education.

1.3 Gender-sensitive communication

The Gender Mainstreaming Toolkit [2] provides useful insights into the language used in all forms of communication to enhance equality of women and men. If used incorrectly, language can reinforce gender stereotypes and implicitly send out the wrong message. Communication can take many forms [2]: social media, websites, speeches, leaflets, publications, photos and videos.

According to [2], gender-sensitive communication means using inclusive language, which promotes gender equality and the equal visibility of women and men.

The language used in lectures and other course materials developed in DigiWind should be inclusive language. Examples can be found in the Gender Mainstreaming Toolkit [2].

1.4 Data and document scope

The data in this report sets a benchmark per HEI and SEP for the coming years. It should be noted that not all datasets were large enough to draw any valid conclusions and without proper knowledge of all social, cultural and economic aspects, it is not possible to compare different datasets of the HEIs with each other.

The diversity data presented here consists of information about gender, age and country/region of origin as registered in HEIs for the academic years from 2019/2020 to 2023/2024. Using a dataset covering 5 years will give a more reliable benchmark and exclude any abnormalities of the last year.

For the county or region of origin we have made the following distinction: Nationals, EU or outside of EU. The country of origin reflects the passport of each student. Thus, any migration or refugee status is not considered. This information was not available.

Any current enrolments for the coming academic year of 2024/2025 have not been taken into consideration.

Any exceptions to the available data or time frame will be mentioned per HEI or SEP, if applicable.

Data used to produce the graphs will be accessible to all project partners. More detailed information subject to the GDPR will not be made public.

The SEPs for which the data has been gathered are given in Table 2:

Table 2: Overview SEPs considered in diversity screening

HEI	SEP	Section
DTU	MSc Wind Energy	2.1
	Online Master Wind Energy	2.2
	MSc Sustainable Energy, track Wind Energy	2.3
TUD	MSc Aerospace Engineering, profile Wind Energy	3.1
	EWEM, track Offshore Engineering	3.2.1
	EWEM, track Rotor Design	3.2.2
	EWEM, track Electrical Power Systems	3.2.3
	EWEM, track Wind Farms & Atmospheric Physics	3.2.4
NTNU	MSc Electric Power Engineering	4.1
	MSc Energy and Environment	4.2
TUS	Leadership in Offshore Renewable Energy Systems	5
PG	Faculty of Electronics, Telecommunications and Informatics	6.1
	Faculty of Electrical and Control Engineering	6.2
	Faculty of Civil and Environmental Engineering	6.3
	Faculty of Mechanical Engineering and Ship Technology	6.4

The data of the team members has also been analysed, as they are the project executors and potentially serve as role models. Only gender data has been considered here, no age or background data was taken into account.

2 Diversity data DTU

At DTU, the data has been gathered for the Master of Science (MSc) Wind Energy, the online Master Wind Energy and the MSc Sustainable Energy.

2.1 MSc Wind Energy

The MSc Wind Energy at DTU consists of five different study lines. The diversity data presented in this section is aggregated across all five.

For the MSc Wind Energy, the number of first year students are shown in Figure 1. In total, 291 students started their MSc from 2019/2020 to 2023/2024.

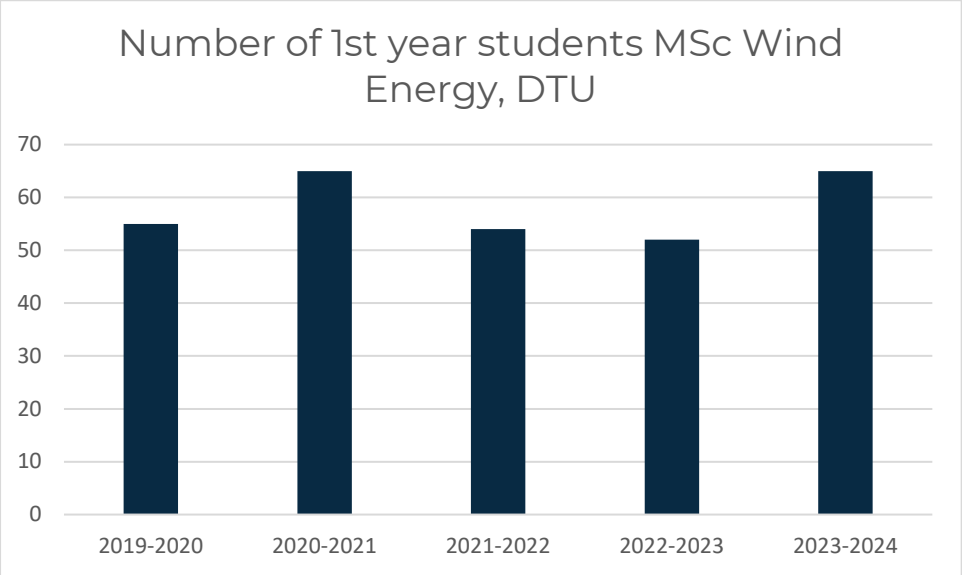

Figure 1: Number of 1st year students MSc Wind Energy, DTU

Most students (about 53%) came from an EU Member State, as shown in Figure 2. The percentage of Danish students is only 18%.

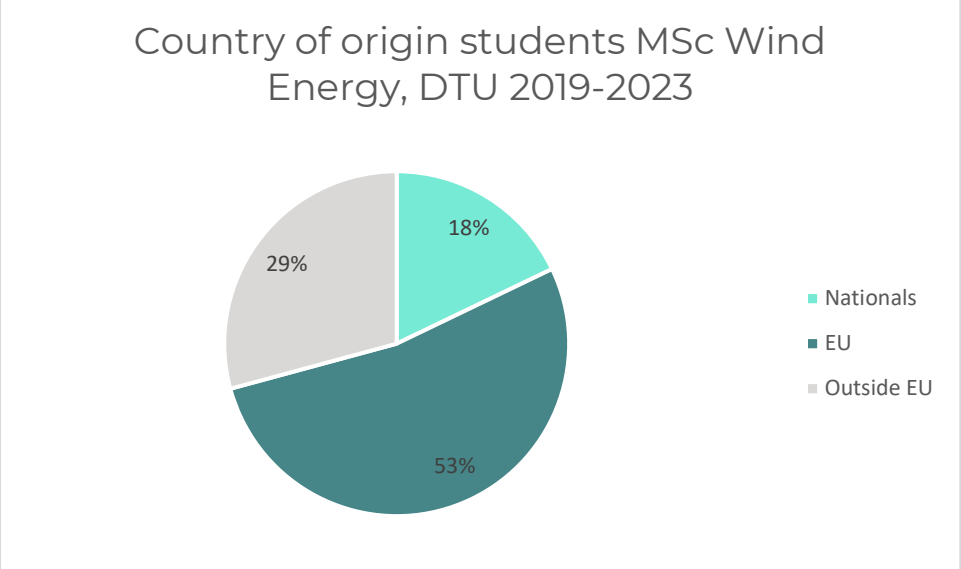

Figure 2: Origin students MSc Wind Energy, DTU

The division between female and male students is 15% and 85%, see Figure 3.

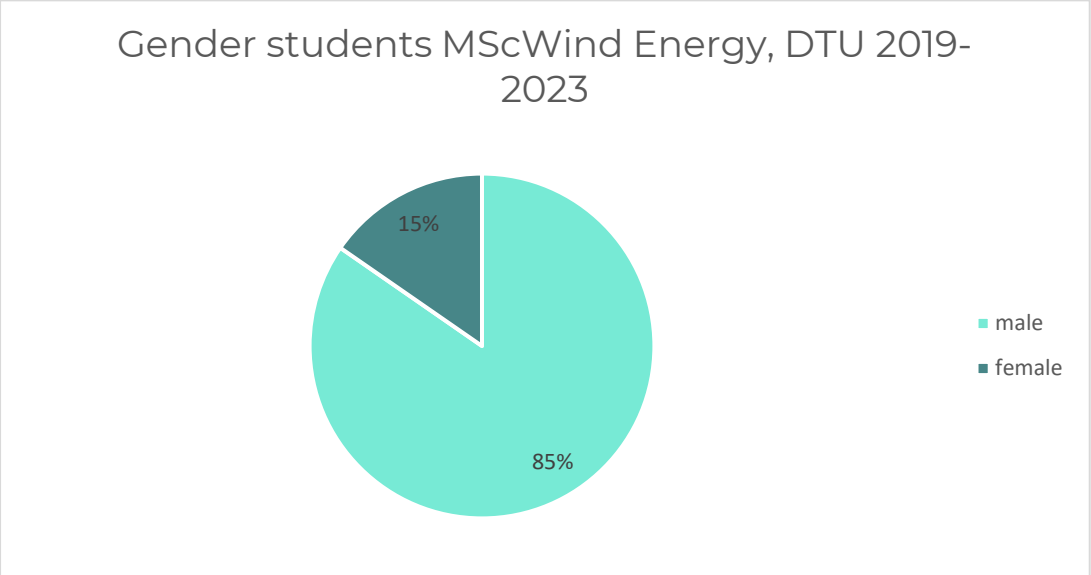

Figure 3: Gender students MSc Wind Energy, DTU

The age of the students at the start of their MSc is shown in Figure 4. The majority of the students (60%) start their MSc between the ages of 20 and 24, and 33% of the students start between 25 and 29 years old.

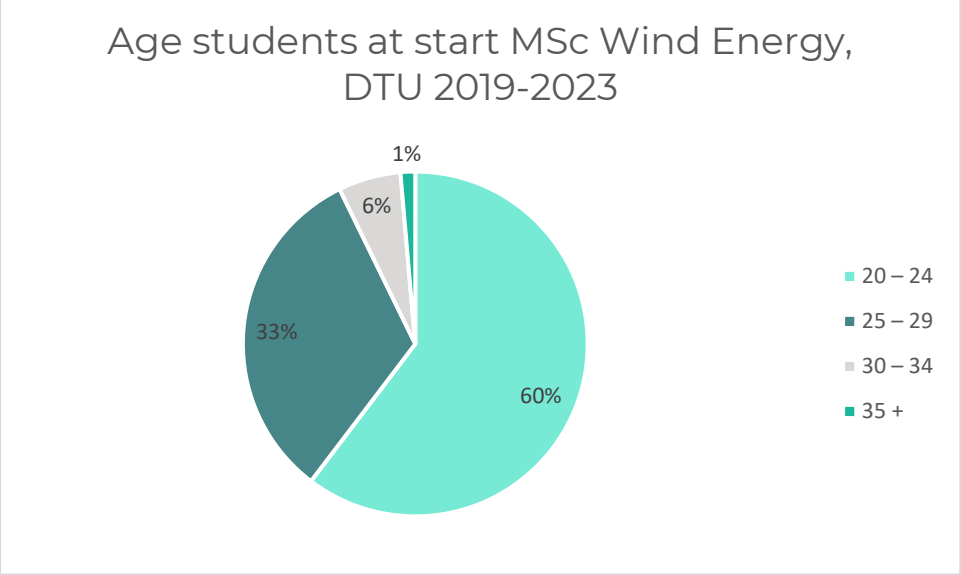

Figure 4: Age students at the start MSc Wind Energy, DTU

2.2 Online Master in Wind Energy

The online Master in Wind Energy is a continuing education programme by DTU[1]. It comprises of 60 ECTS and has a vocational dimension that the MSc does not have.

In total, 237 professionals/students started the programme from 2019/2020 to 2023/2024, see Figure 5. There is an increase in the number of participants from

[1] DTU Wind Energy Master – Online Programme

2020/2021 onwards, which could perhaps be linked to the COVID-19 pandemic and global increase in popularity of online and remote educational programmes.

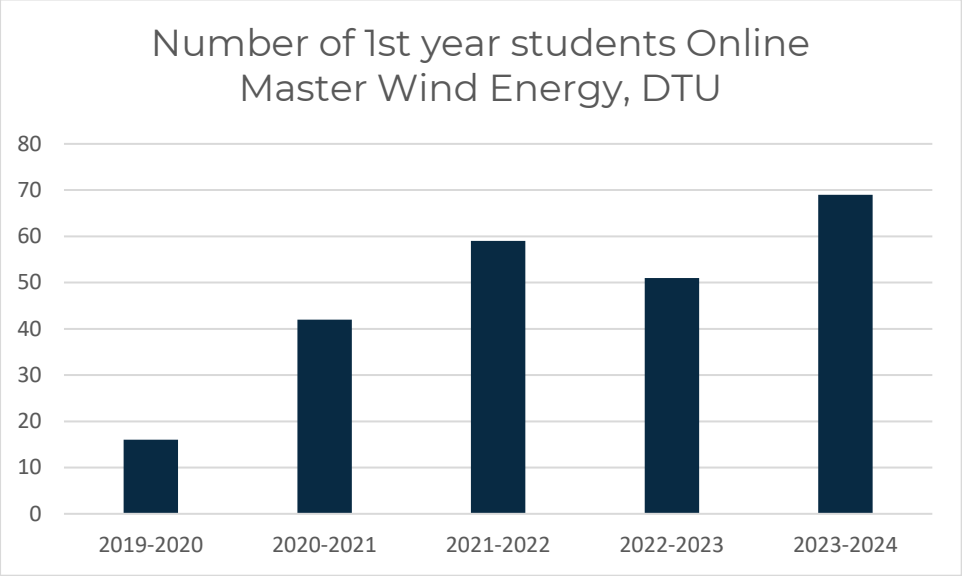

Figure 5: Number of 1st year student Online Master Wind Energy, DTU

When we look at the countries of origin of the students, we see a typical trend for online learning. 50% of the students are from outside the EU (Figure 6). Online education is more accessible for students who live further away.

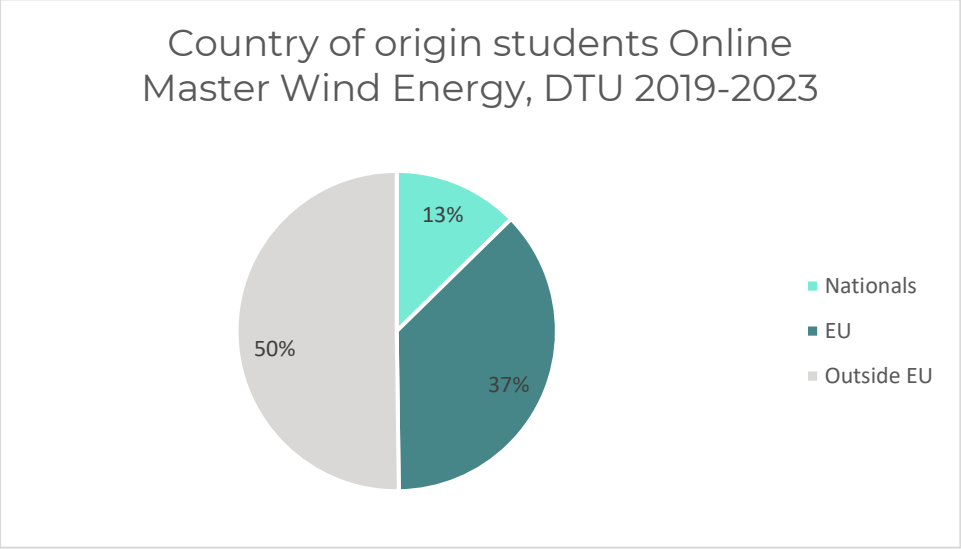

Figure 6: Origin students Online Master Wind Energy, DTU

The division between female and male students is like that of the MSc Wind Energy at DTU, 18% to 82% (Figure 7) compared to 15% and 85% (Figure 3).

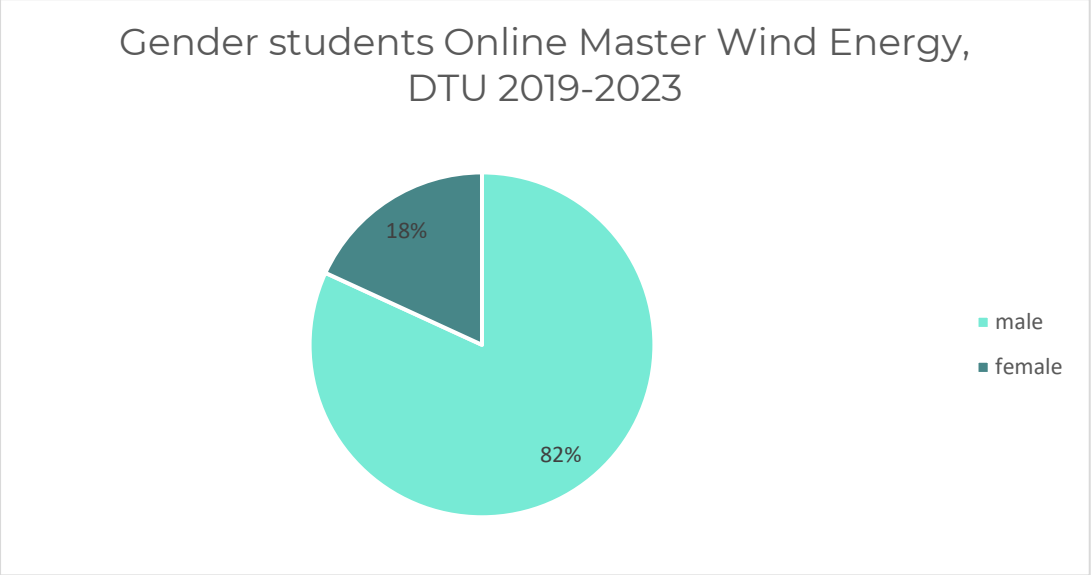

Figure 7: Gender students Online Master Wind Energy DTU

The age of the participants also shows the typical trend for continuing education programmes. One of the prerequisites is that the students must have at least 2 years of relevant work experience, and they should be in possession of a bachelor's degree. Thus, we see that the age is higher than that of a MSc programme. Only 1 student between the age of 20-24 enrolled in 2020, all other students were 25 years or older. More than 65% were even older than 35 years, as can be seen in Figure 8.

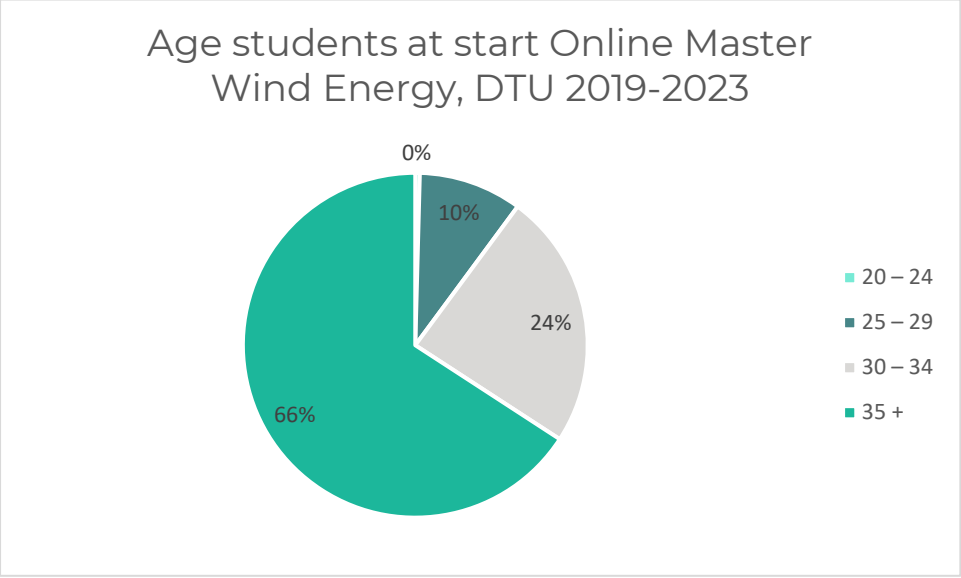

Figure 8: Age students at the start Online Master Wind Energy, DTU

2.3 MSc Sustainable Energy

At DTU there is also a MSc Sustainable Energy in which Wind Energy can be chosen as a separate track. The courses belonging to this track are also considered in WP3 and WP4, hence the diversity numbers for this track are presented here as well.

There is one note, and that is from the academic year 2024/2025 this MSc will be split into two MSc programmes: Sustainable Energy Systems and Sustainable Energy

Technologies. But for now, the numbers are labelled for the MSc Sustainable Energy in its aggregated form.

From 2019/2020 to 2023/2024 in total 98 students chose this the Wind Energy track. Here, we do see a particular irregularity, namely the number of enrolments in the current academic year (2023/2024). This year only 4 students started the MSc, with the track Wind Energy. Some other tracks within this MSc, also have experienced a similar drop, as such Bio Energy, Energy Savings and Solar Energy. On the other hand, there are tracks that have seen an abnormal high increase, Energy System Analysis (more than 200%) and Thermal Energy (about 800%). In these years the MSc program was restructured, and some study lines were changed, others were added. This may have affected the number of enrolments per track of this MSc.

The numbers for the track Wind Energy are shown in Figure 9.

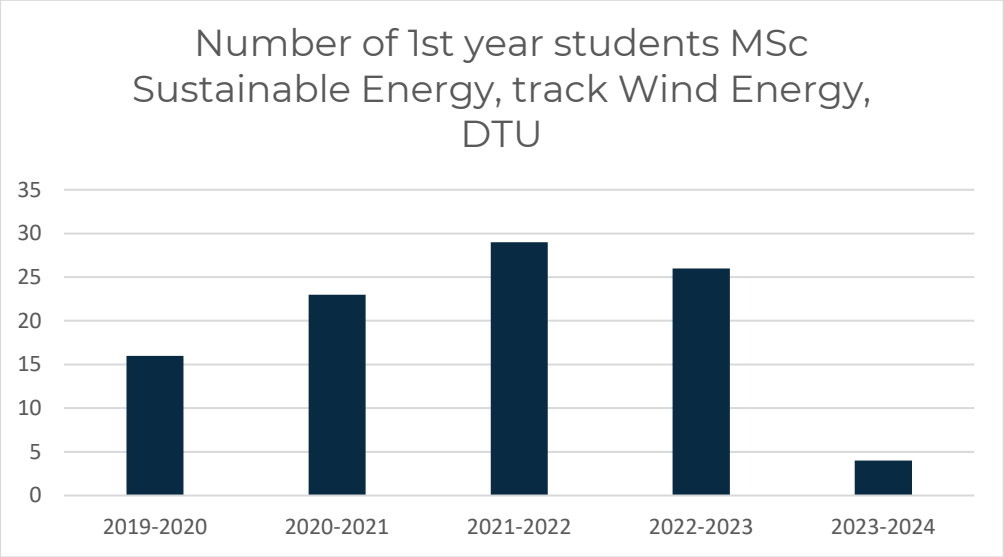

Figure 9: Number of 1st year student MSc Sustainable Energy, track Wind Energy, DTU

When looking at the origin of the students participating in this track at DTU, we see that about 60% of the students are from the EU, and only 19% are nationals (Figure 10).

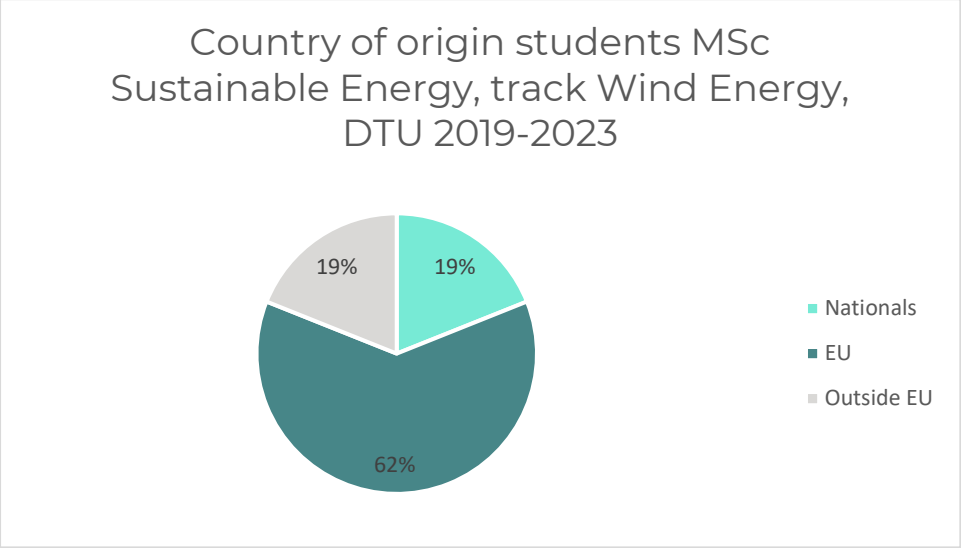

Figure 10: Origin students MSc Sustainable Energy, track Wind Energy, DTU

The gender diversity is also larger for this track, compared to the MSc Wind Energy at DTU. Slightly more than 30% of students are female, compared to 15% at the MSc Wind Energy (Figure 3). Figure 11 shows the percentages of female and male students for the MSc Sustainable Energy, track Wind Energy.

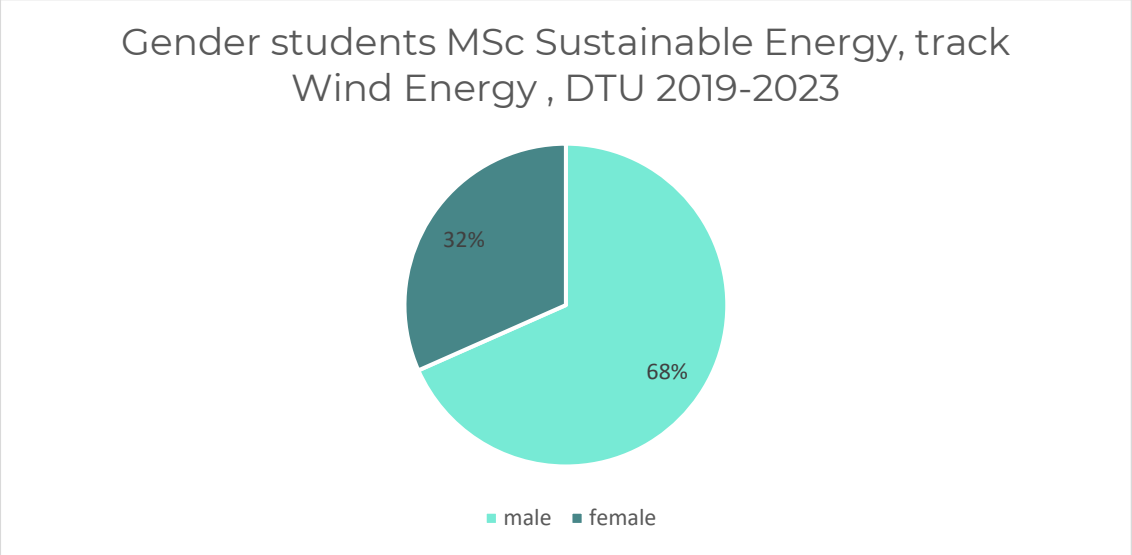

Figure 11: Gender students MSc Sustainable Energy, track Wind Energy, DTU

The age at which students start their MSc Sustainable Energy (Figure 12) is comparable to that of the MSc Wind Energy at DTU (Figure 4). About 60% start when they are 20 to 24 years old, and just over 31% start between 25 and 29 years of age.

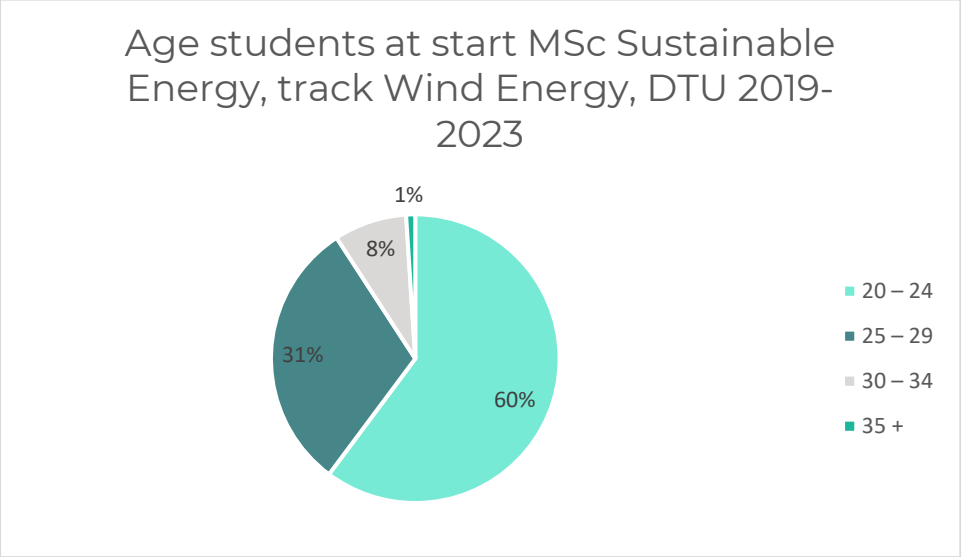

Figure 12: Age at start MSc Sustainable Energy, track Wind Energy, DTU

3 Diversity data TUD

At TUD, the diversity data for several studies has been collected: MSc Aerospace Engineering, track Aerodynamics and Wind Energy, profile Wind Energy, and the European Wind Energy Master (EWEM).

EWEM is a co-operation between three consortium members DTU, TUD, NTNU as well as the University of Oldenburg (not a partner in DigiWind). Students get a double degree from two universities, depending on which track they choose. Student administration falls in the hands of TUD; hence these numbers are given in this section. The EWEM students are only counted in the EWEM dataset and are not included in any other dataset.

And since EWEM is a European Master, only the distinction between EU and outside EU has been made, when processing the country of origin of the students.

3.1 MSc Aerospace Engineering

Within the MSc Aerospace Engineering at TUD, there is a track Aerodynamics and Wind Energy, and within this track students can choose the profile Wind Energy. The numbers given in this section only apply to the students of this profile. For conciseness reason, the full name is not used in the figures, but shortened to MSc Aerospace Engineering, profile Wind Energy, TUD.

In the last 5 years in total 30 students started with the MSc Aerospace Engineering, profile Wind Energy (Figure 13).

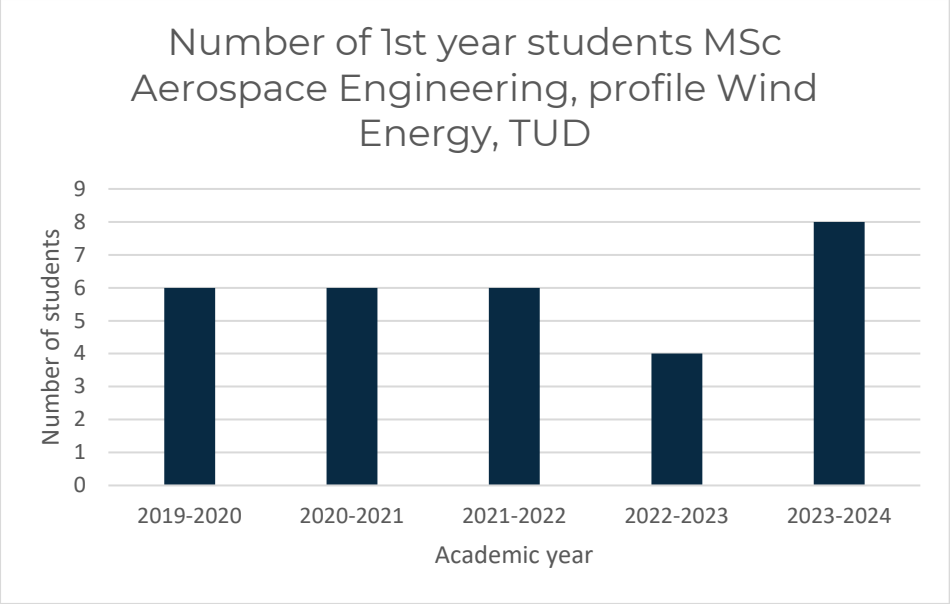

Figure 13: Number of 1st year students MSc Aerospace Engineering, profile Wind Energy, TUD

Of these 30 students, 78% are Dutch students, and only 22% are foreign. Half the foreign students are students from EU. This is shown in Figure 14. This division is significantly different from that at DTU for the MSc Wind Energy (section 2.1).

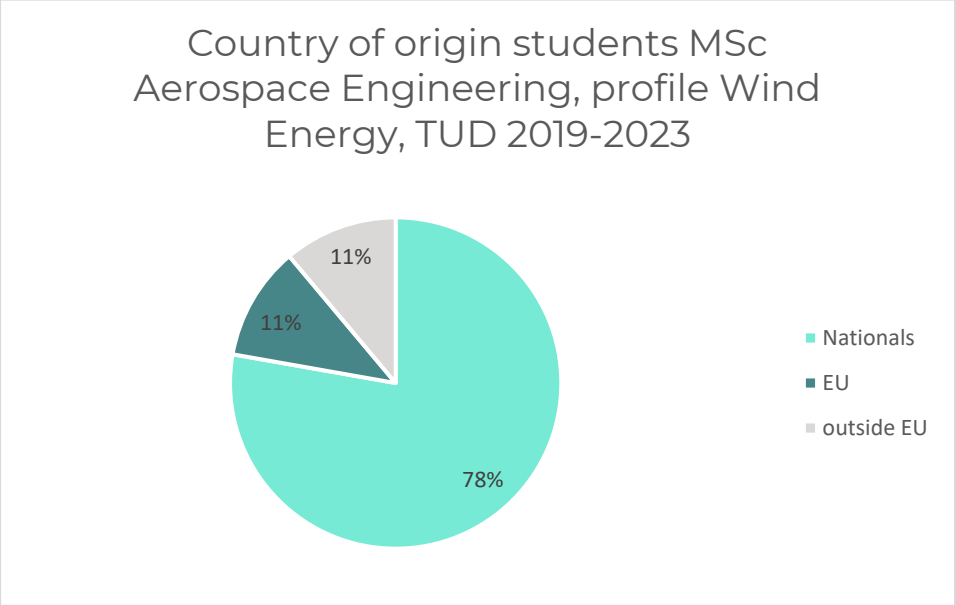

Figure 14: Origin students MSc Aerospace Engineering, profile Wind Energy ,TUD

Of the 30 students over the 5 years, only 3 were female students. With only 10% female students (Figure 15), this number is also notably lower than that at DTU.

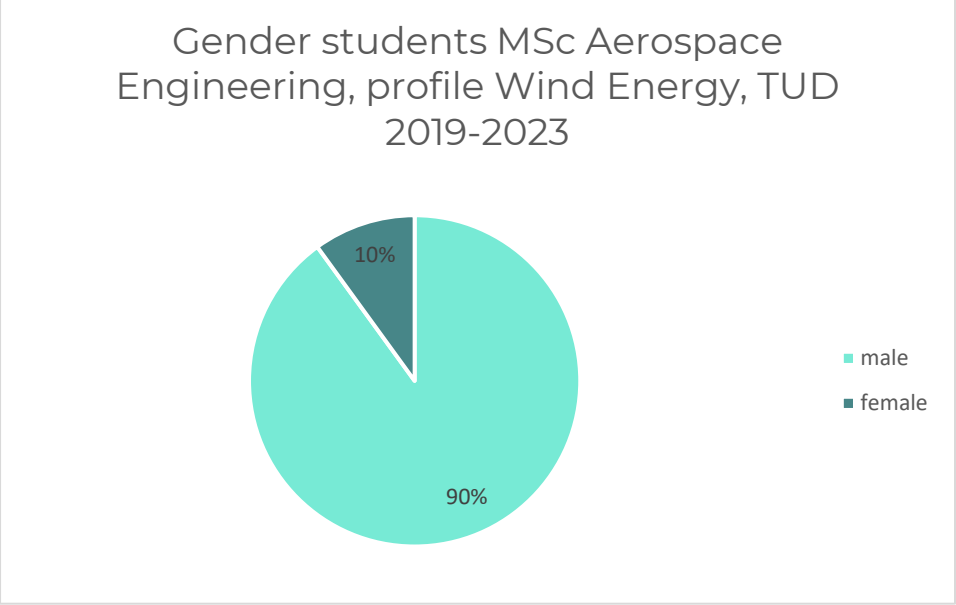

Figure 15: Gender students MSc Aerospace Engineering, profile Wind Energy, TUD

When we look at the age of the students at the start of the MSc Aerospace Engineering, profile Wind Energy, we see a similar distribution to that of DTU. Majority of the students started their MSc between the ages of 20 and 24. Only 2 students started between the ages of 25 and 29. No students older than 29 years started the last 5 years. The distribution can be seen in Figure 16.

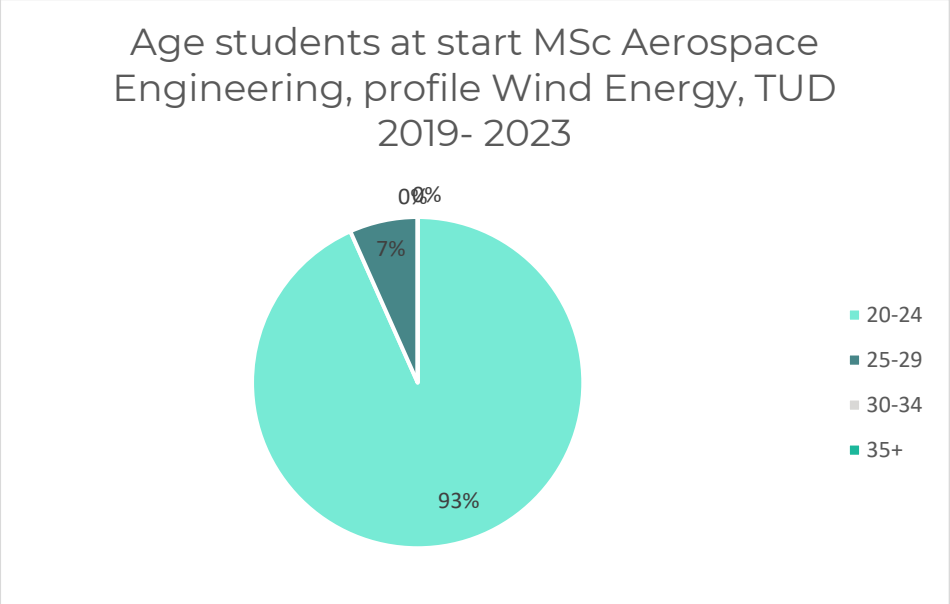

Figure 16: Age students at the start MSc Aerospace Engineering, profile Wind Energy, TUD

3.2 European Wind Energy Master (EWEM)

As mentioned this MSc is a co-operation between four universities, three of which are part of DigiWind. Students will get a double degree from two universities, depending on the specific track they choose, and, the diversity data is presented here per track.

3.2.1. EWEM track Offshore Engineering

The track Offshore Engineering awards two degrees: MSc Offshore and Dredging Engineering at TUD and MSc Marine Technology at NTNU.

Between 2019/2020 and 2023/2024 in total 63 students started with this track (Figure 17). Last academic year there was a large increase in 1st years students for this track, about double the number of students compared to the four years before.

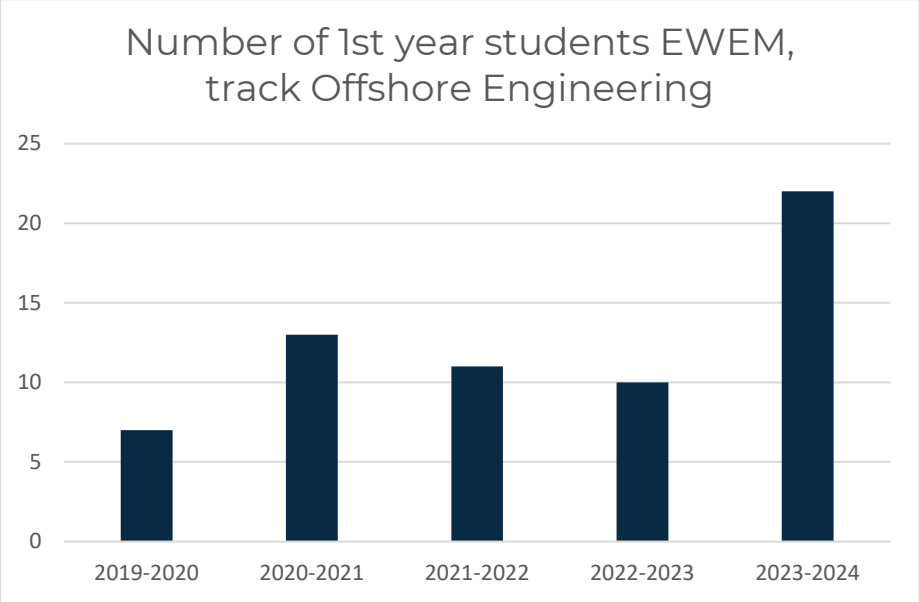

Figure 17: Number of 1st year students EWEM, track Offshore Engineering

Most of the students have a European background, almost 90%, which can be expected of a European MSc (Figure 18).

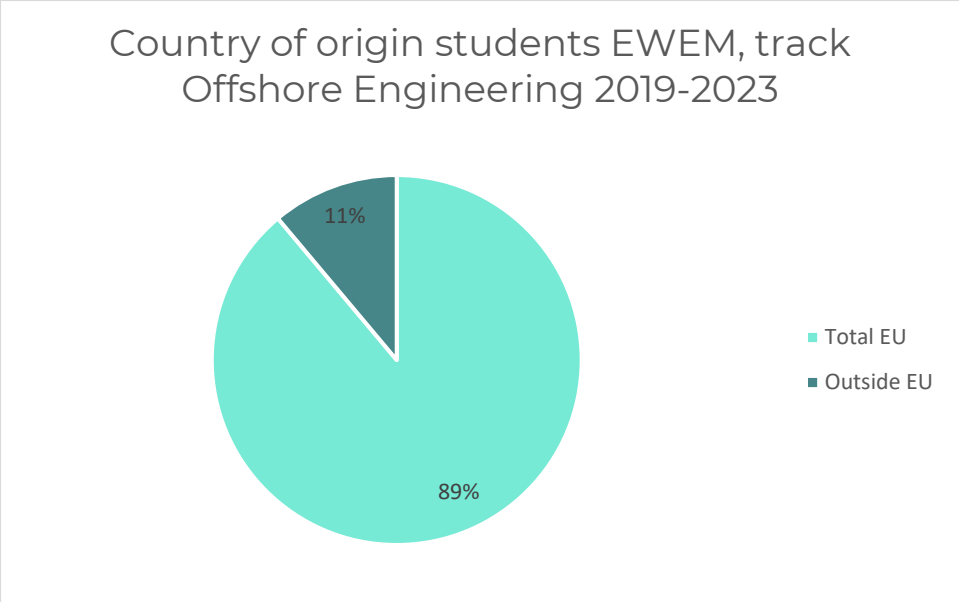

Figure 18: Origin students EWEM, track Offshore Engineering

On average over the last 5 years about 25% of the students were female (Figure 19).

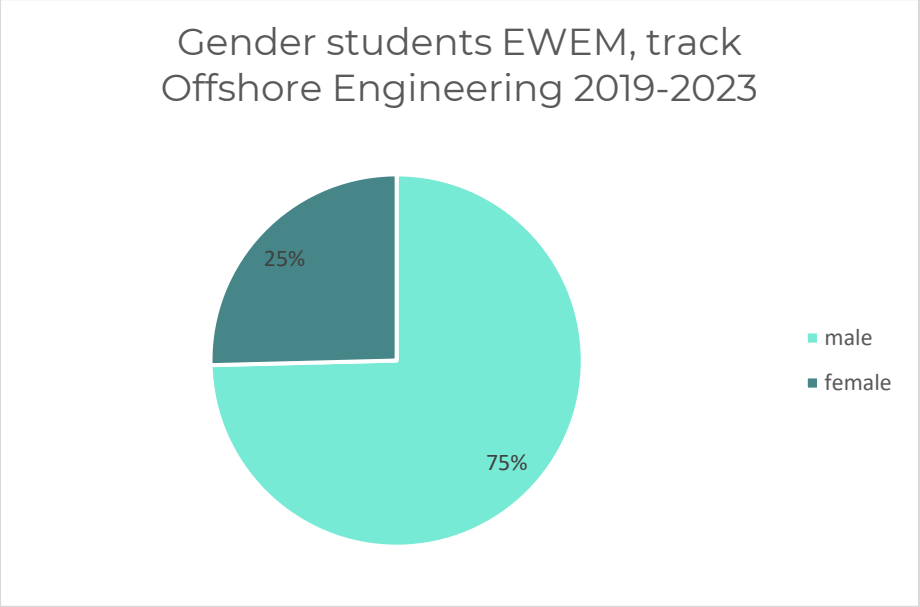

Figure 19: Gender students EWEM, track Offshore Engineering

The age distribution shows similar trends as seen at the MSc Aerospace Engineering (TUD) and MSc Wind Energy (DTU). Only two students older of 30 years or older started the EWEM the last five years (Figure 20).

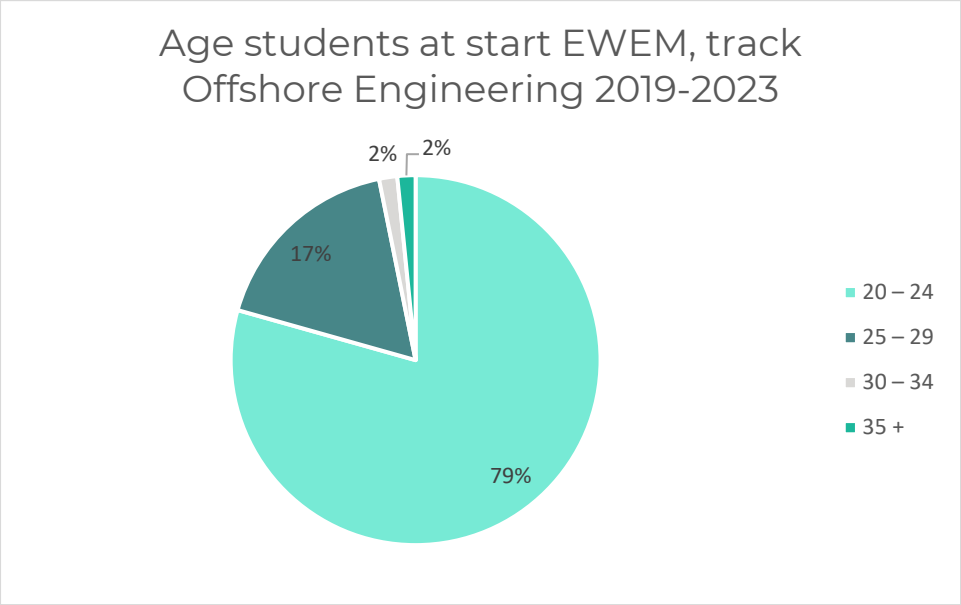

Figure 20: Age students at start EWEM, track Offshore Engineering

3.2.2. EWEM track Rotor Design

The track Rotor Design awards two degrees: MSc Aerospace Engineering at TUD and MSc Wind Energy at DTU.

The total number of students that started with this track the past 5 years is 53. The distribution is more evenly divided over the last four years (Figure 21), in comparison to the track Offshore Engineering (Figure 17).

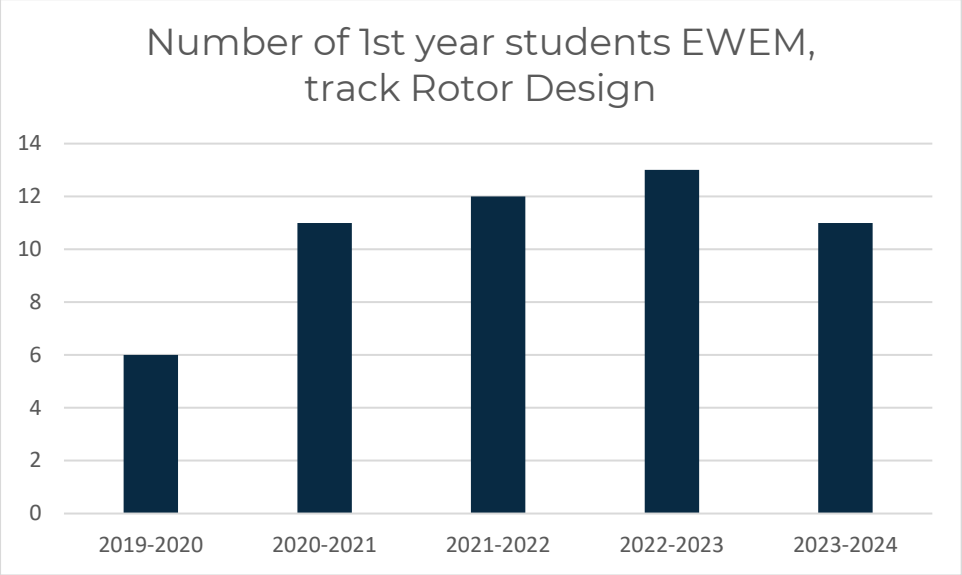

Figure 21: Number of 1st year students EWEM, track Rotor Design

Just over 75% of the students were from the EU (Figure 22). This is a smaller share than for the track Offshore Engineering (Figure 18) and is more like that of the MSc Wind Energy at DTU (Figure 2).

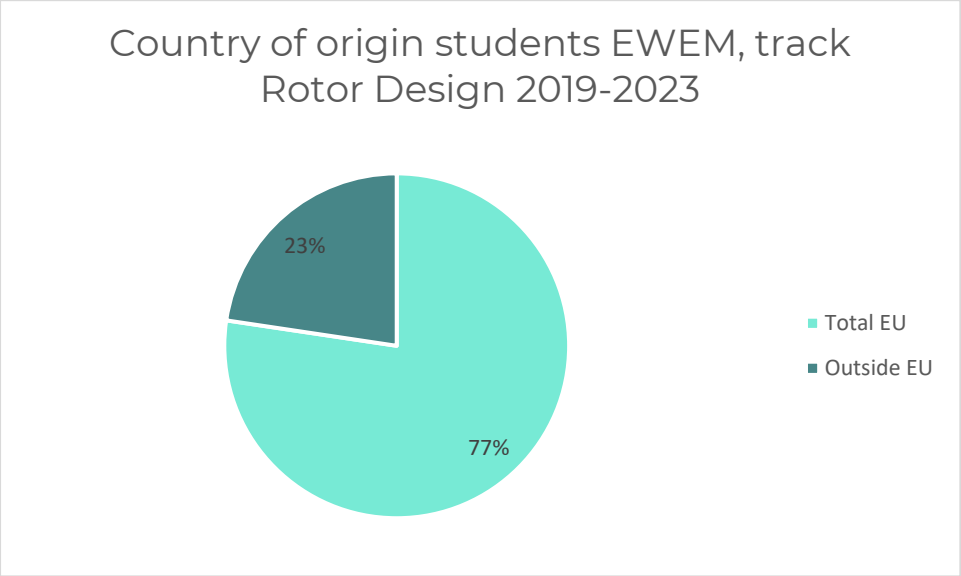

Figure 22: Origin student EWEM, track Rotor Design

About 23% of the students were female (Figure 23), very similar to the track Offshore Engineering. It does show an increase compared to both the MSc Aerospace Engineering at TUD (10 %, Figure 15) and MSc Wind Energy (15%, Figure 3).

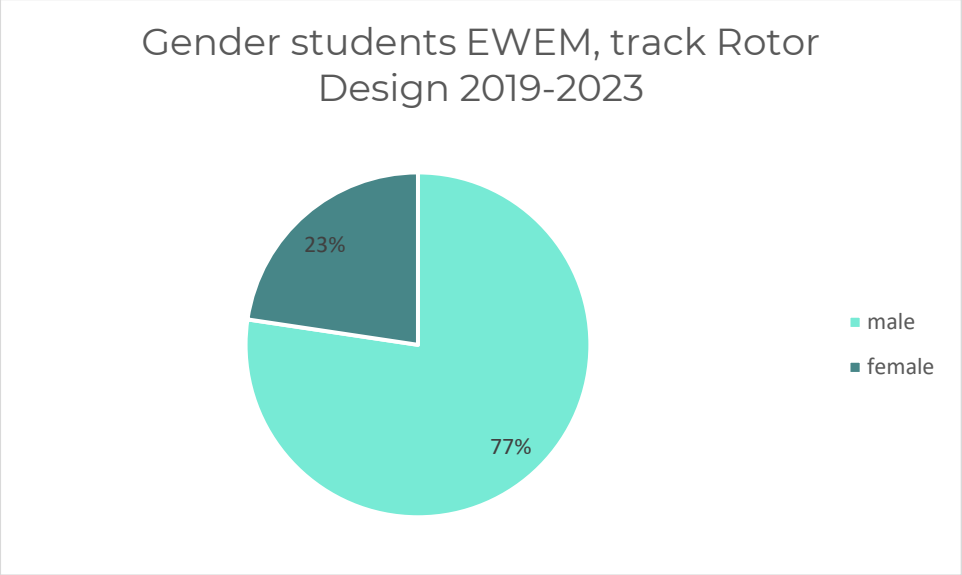

Figure 23: Gender student EWEM, track Rotor Design

The average age of students starting with the track Rotor Design is very similar to that of the track Offshore Engineering and the other MSc programmes discussed this far. The age distribution is given in Figure 24.

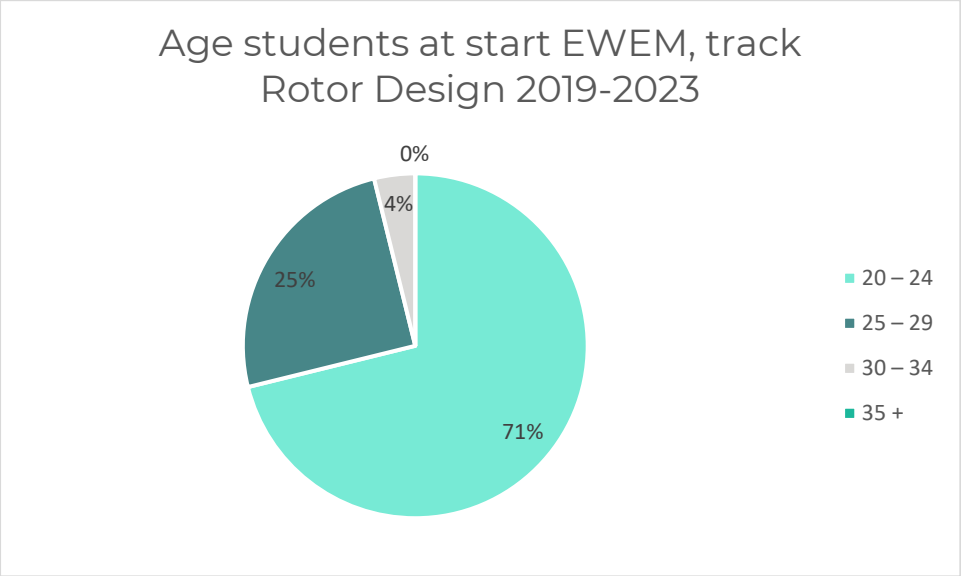

Figure 24: Age students at start EWEM, track Rotor Design

3.2.3. EWEM track Electrical Power Systems

The track Electrical Power Systems awards two degrees: MSc Electrical Engineering at TUD and MSc Electric Power Engineering at NTNU.

The intake of students over the last five years is significantly less than for the tracks Offshore Engineering and Rotor Design, 15 students in total and on average about two-three students per years. Only in 2022/2023 there were five students who started the track. The numbers are shown in Figure 25.

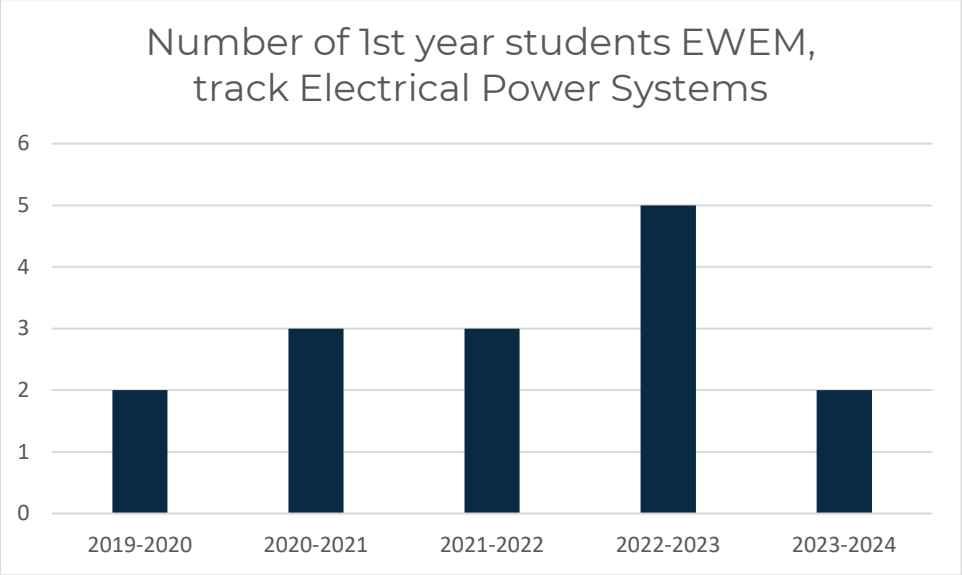

Figure 25: Number of 1st year students EWEM, track Electrical Power Systems

Of the 15 students, three students are not from within the EU. Thus 80% of students is from the EU (Figure 26), which is comparable to the track Rotor Design (Figure 22).

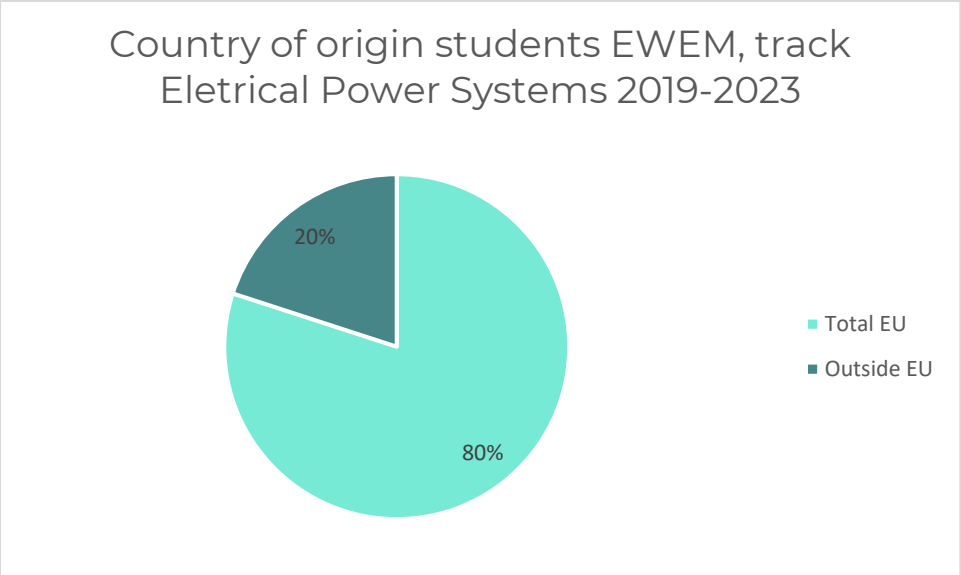

Figure 26: Origin students EWEM, track Electrical Power Systems

The male students were particularly in the majority, as only one female student was registered in the last five years. This is results in staggering 93% of male students (Figure 27), the highest seen in all diversity datasets. But with only 15 students the last 5 years, no conclusions can be drawn from these numbers.

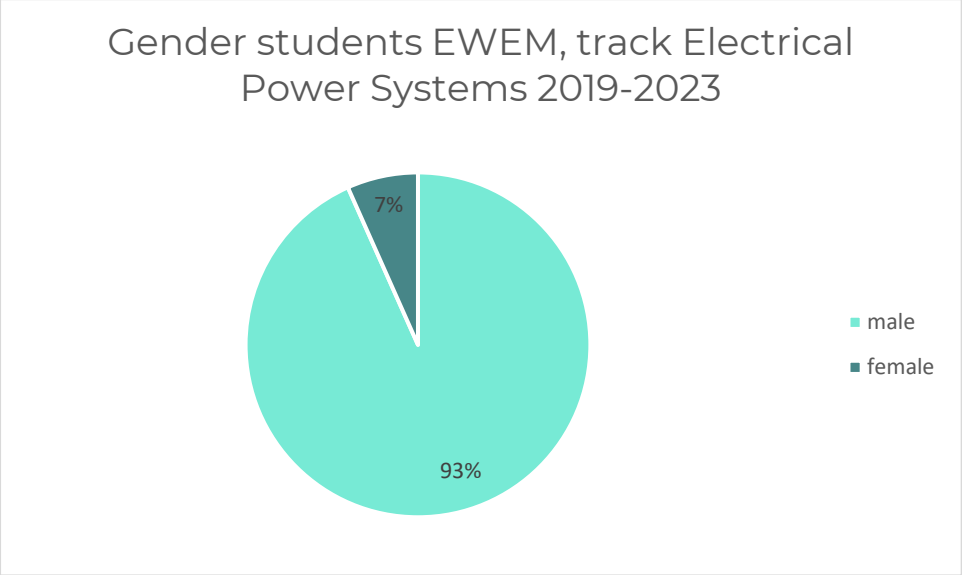

Figure 27: Gender students EWEM, track Electrical Power Systems

Another aspect that stands out is the average age of the student at the start of this track (Figure 28). Within EWEM it has the highest share of students between 25-29 years old. With 33% it is also higher than MSc Aerospace Engineering at TUD, but again similar to the percentages of MSc Wind Energy (33%) and MSc Sustainable Energy (31%). And it is also comparable that the percentage of 37% of the MSc Electric Power Engineering at NTNU (Figure 36).

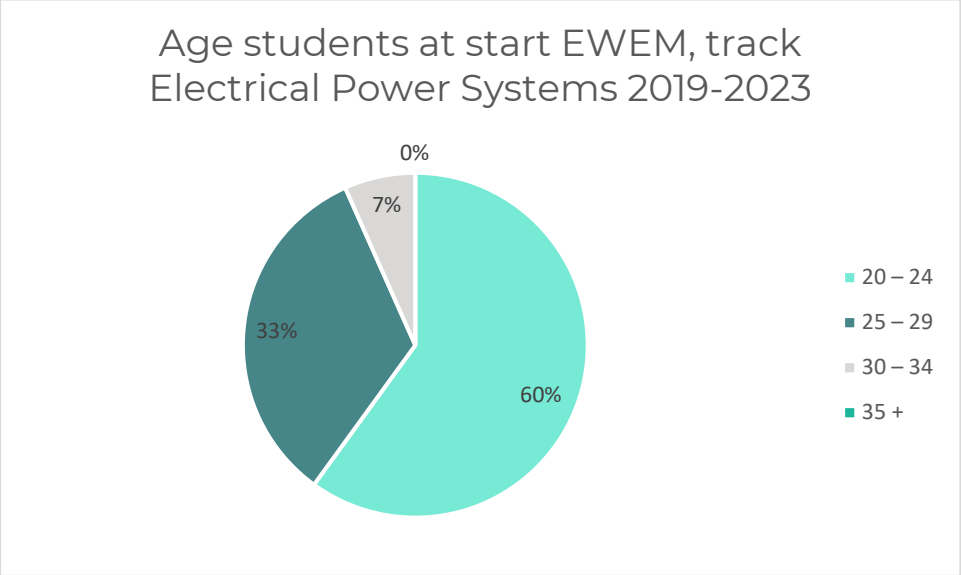

Figure 28: Age students at start EWEM, track Electrical Power Systems

3.2.4. EWEM track Wind Farms & Atmospheric Physics

The track Wind Farms and Atmospheric Physics awards two degrees: MSc Wind Energy at DTU and MSc Engineering Physics at University of Oldenburg.

This track shows the lowest number of students, only eight students have enrolled between 2019/2020 and 2023/2024 (Figure 29). This trend is not of recent years, in the

year 2019/2020 there were even no students who choose this track. And that has happened before 2019 several times as well.

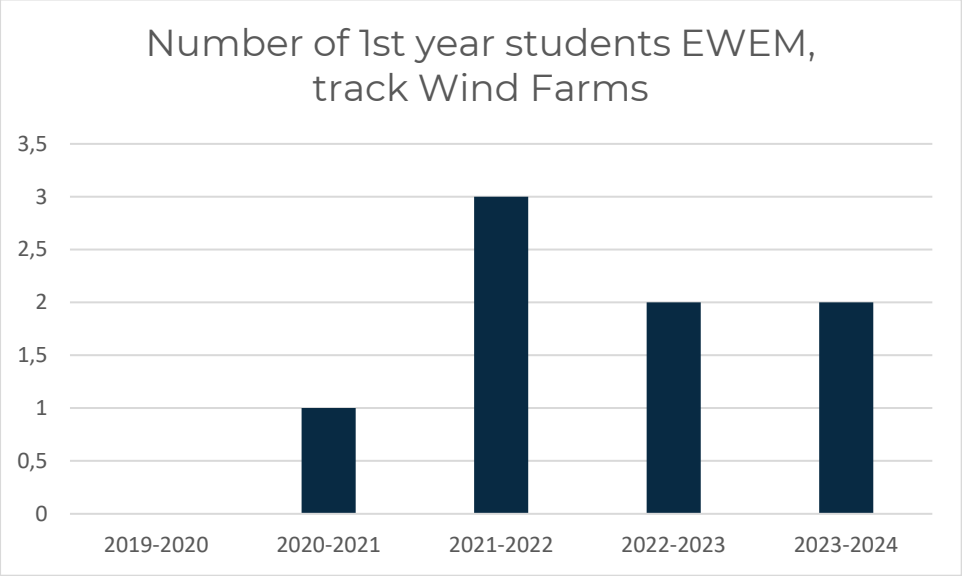

Figure 29: Number 1st year students EWEM, track Wind Farms

The population of students is so small that we cannot draw many conclusions when we look at the distribution of gender, origin or age. Nonetheless, the graphs are given in this report to be complete.

From the eight students, only one student came from outside the EU (Figure 30). The same holds for the number of female students, only one female student enrolled (Figure 31).

And six students were between 20-24 years old when they started, the other two were between 25-29 years old (Figure 32).

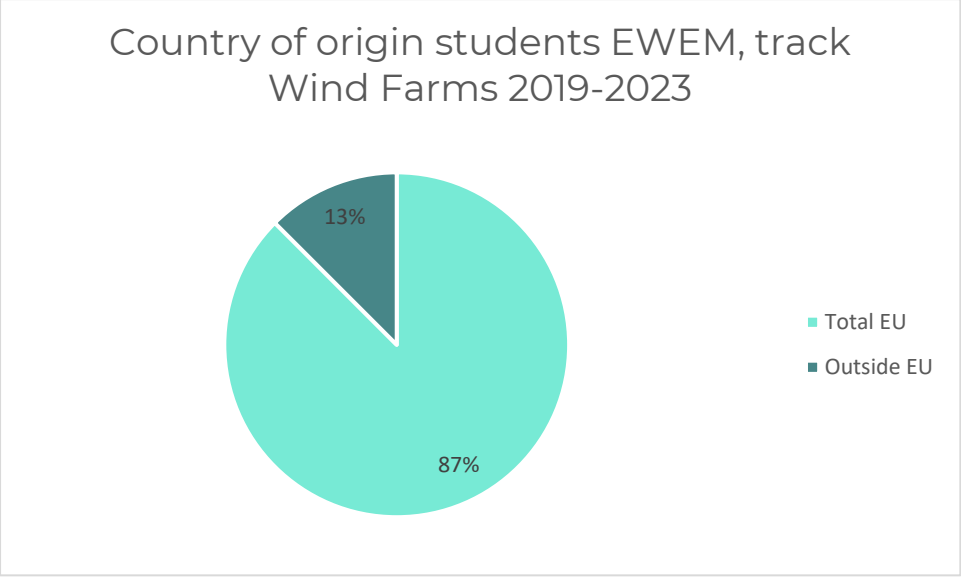

Figure 30: Origin student EWEM, track Wind Farms

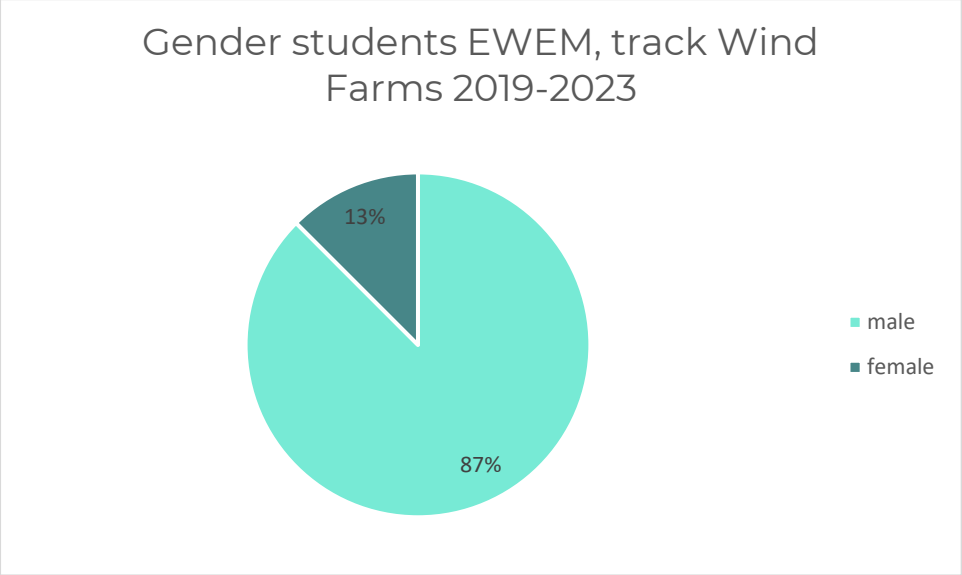

Figure 31: Gender student EWEM, track Wind Farms

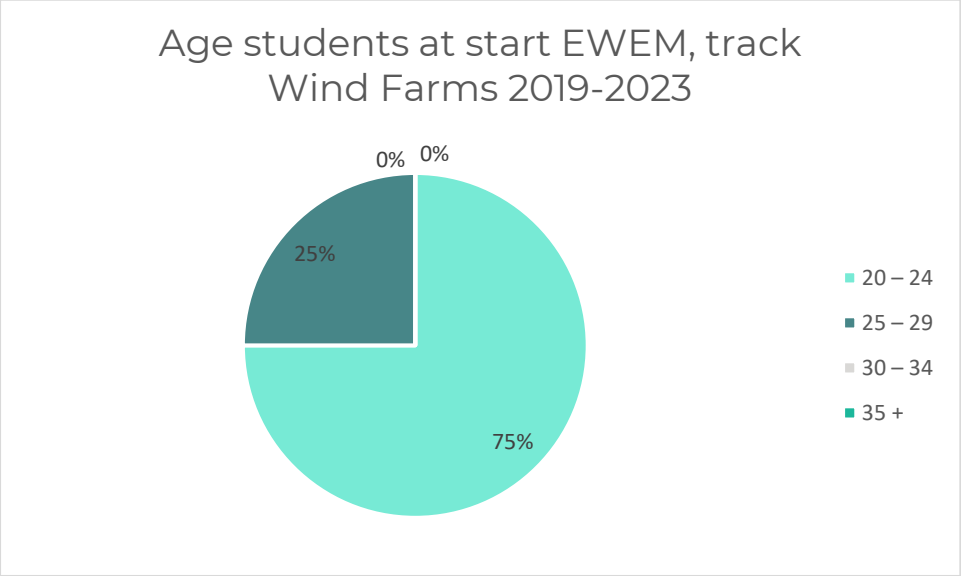

Figure 32: Age student at start EWEM, track Wind Farms

4 Diversity data NTNU

At NTNU two MSc were considered for the diversity data, the MSc Electric Power Engineering and MSc Energy and Environment.

4.1 MSc Electric Power Engineering

Between the years 2019/2020 and 2023/2024 83 students started their MSc study. The distribution over the years is rather even, as can be seen in Figure 33.

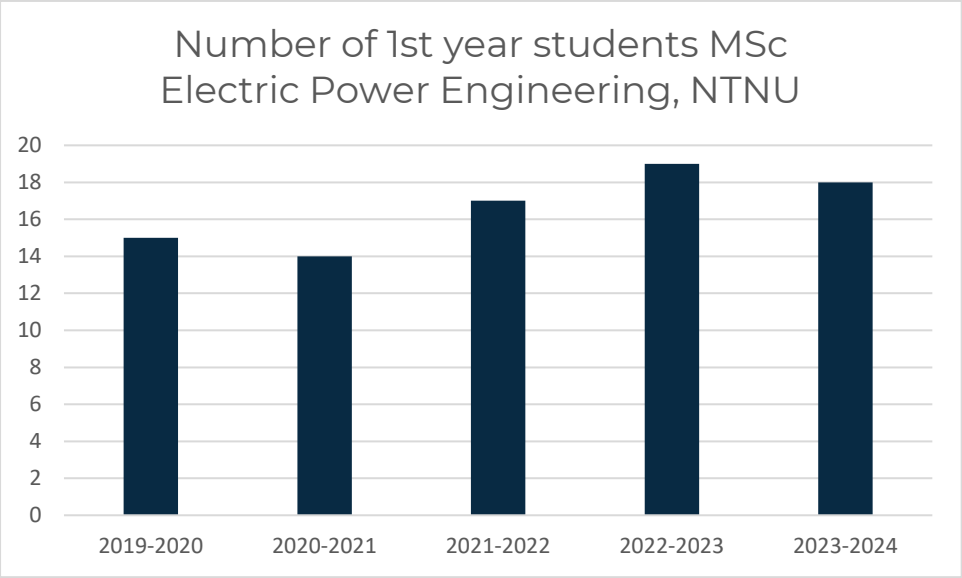

Figure 33: Number of 1st year student Electric Power Engineering, NTNU

The majority of the students were locals, only 12% were not Norwegian. Two students were from the EU (representing 2%) and 8 students from outside the EU (10%). These percentages are shown in Figure 34.

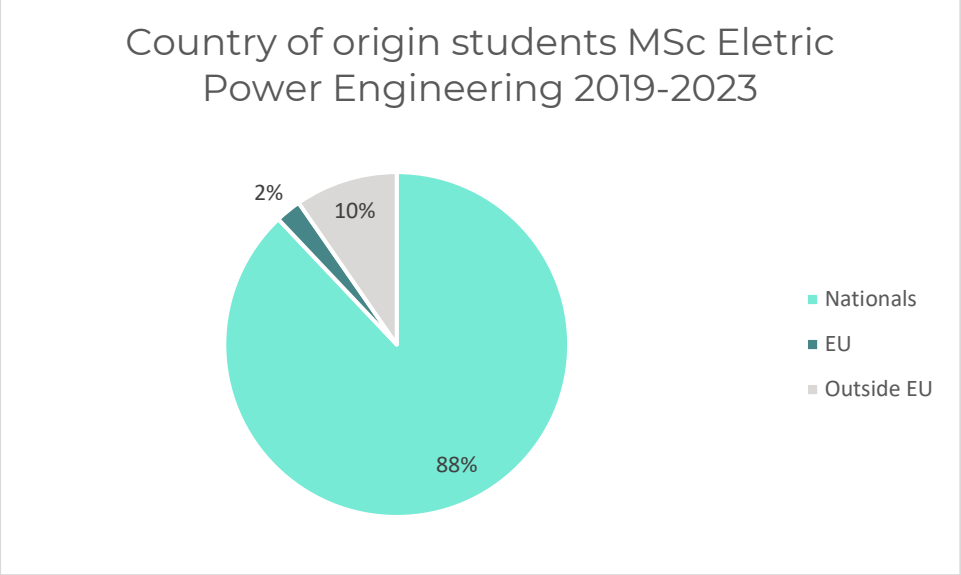

Figure 34: Origin student Electric Power Engineering, NTNU

When reviewing the gender of the students (Figure 35), a trend can be seen for studies regarding electrics and control. At NTNU only 10% of the students is female. This is similar share as for the EWEM track Electrical Power Systems (Figure 27) and the faculty of Electrical and Control Engineering at PG (Figure 48).

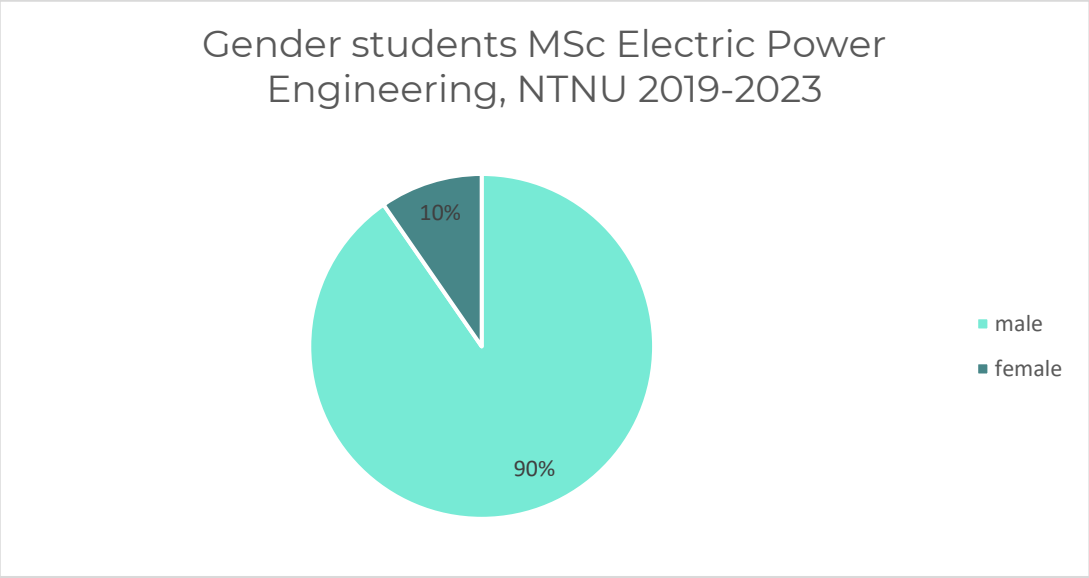

Figure 35: Gender student Electric Power Engineering, NTNU

When looking at the average age of the students starting between the ages of 20 and 24, this share is the lowest compared to the MSc's at DTU and TUD. On average the share of the youngest age group for MSc is between 60% and 80%, the MSc Aerospace Engineering at TUD this is even 90%. Whereas at MSc Electric Power Engineering at NTNU this is only 46%.

As mentioned, the share or students between 25 and 29 years old at the start of the MSc is comparable to that of the EWEM track Electrical Power Systems (Figure 28)

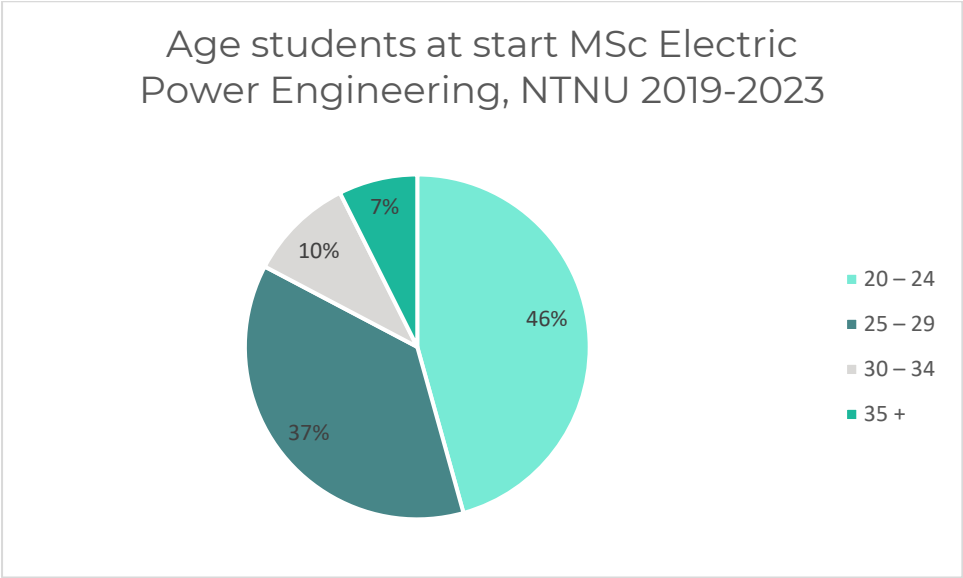

Figure 36: Age students at start MSc Electric Power Engineering, NTNU

4.2 MSc Energy and Environment

More than double the number of students of the MSc Electric Power Engineering at NTNU started the MSc Energy and Environment at NTNU since 2019. In total, 175 students started this Master, evenly distributed over the five academic years (Figure 37).

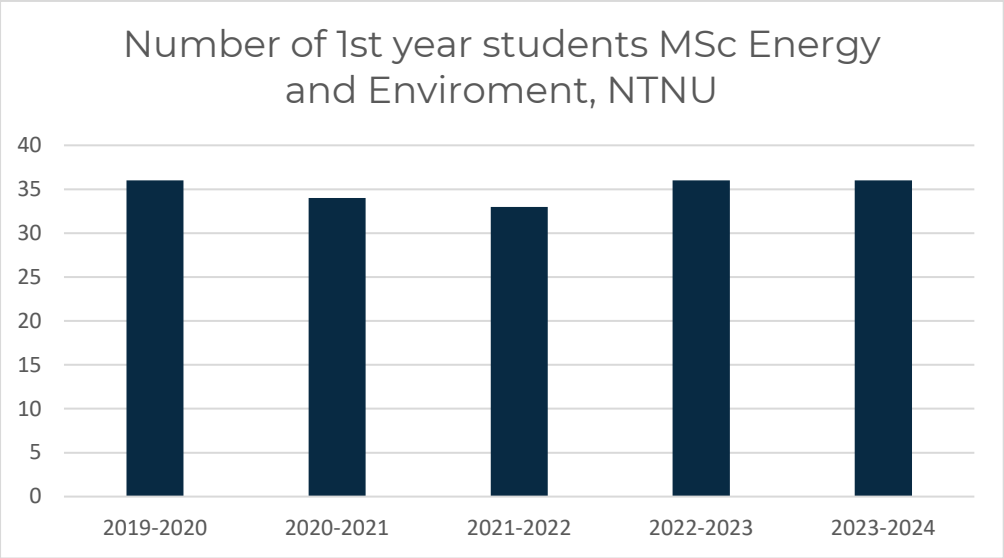

Figure 37: Number of 1st year student MSc Energy and Environment, NTNU

All students, but merely one, were Norwegian students over the last years (Figure 38). This is lowest share of foreign students seen in this report. The MSc is, however, an international study.

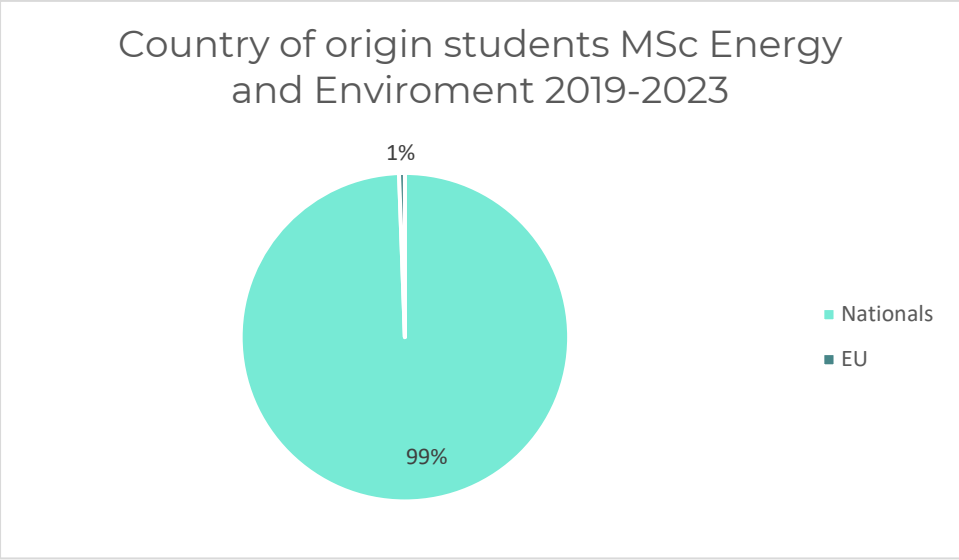

Figure 38: Origin students MSc Energy and Environment, NTNU

The percentage of female students, 32% (see Figure 39), is relatively high compared to most other SEPs considered in this report. Other SEPs that show similar percentages are the MSc Sustainable Engineering at DTU, also 32% (Figure 11), the Leadership in Offshore Renewable Energy Systems at TUS (32%, Figure 43) and at PG the faculties of Civil and Environmental Engineering (40%, Figure 50) and of

Mechanical Engineering and Ship Technology (29%, Figure 52). It is notable that all MSc covering a broader view on renewable, sustainable energy and environment have such a high percentage of female students.

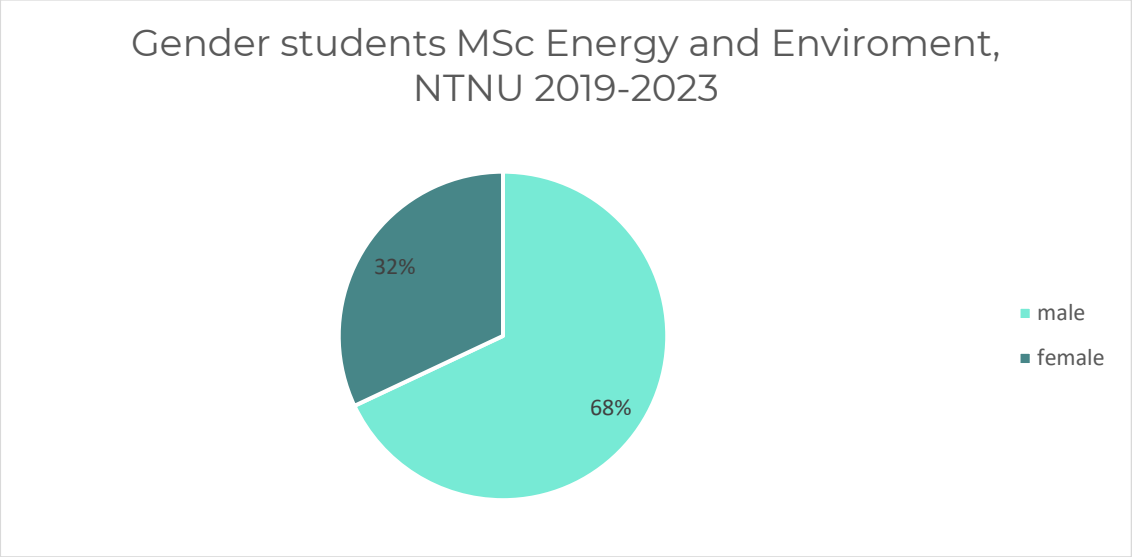

Figure 39: Gender students MSc Energy and Environment, NTNU.

The age distribution of when students start with their MSc is more consistent with all other MSc, unlike that of Electric Power Engineering at NTNU. Just over 75% of the student started between the age of 20-24 years, as can be seen in Figure 40.

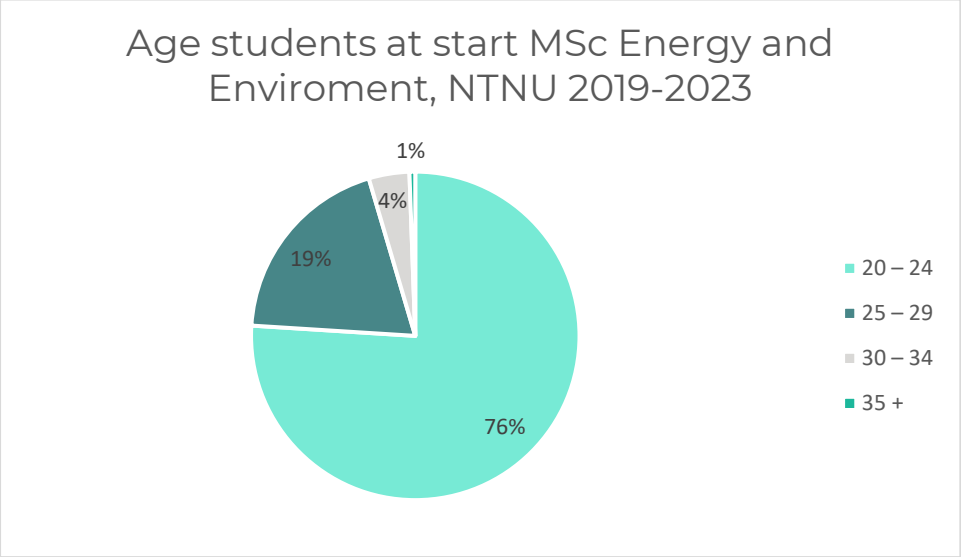

Figure 40: Age at start MSc Energy and Environment, NTNU

5 Diversity data TUS

TUS will develop MSc or Master's in Wind and Energy Systems throughout the course of the DigiWind project.

However, at TUS there is a Short Advanced Programme (SAP), related to DigiWind, available for industry professionals, called Leadership in Offshore Renewable Energy Systems. The diversity data for this SAP is given in this report, to compare the Future Master's Wind and Energy Systems in the coming years.

5.1 Leadership in Offshore Renewable Energy Systems

This SAP is an online module and has a study load of 10 ETCS. In 2023/2024 this SAP ran for the first time, and the diversity data for this edition is given in this report. Since the available data is of only one year, no real conclusions can be drawn for the dataset. Throughout the course of the DigiWind project the diversity data for this SAP will be monitored as well.

The first edition of the Leadership in Offshore Renewable Energy Systems Certificate welcomed 19 participants (Figure 41)

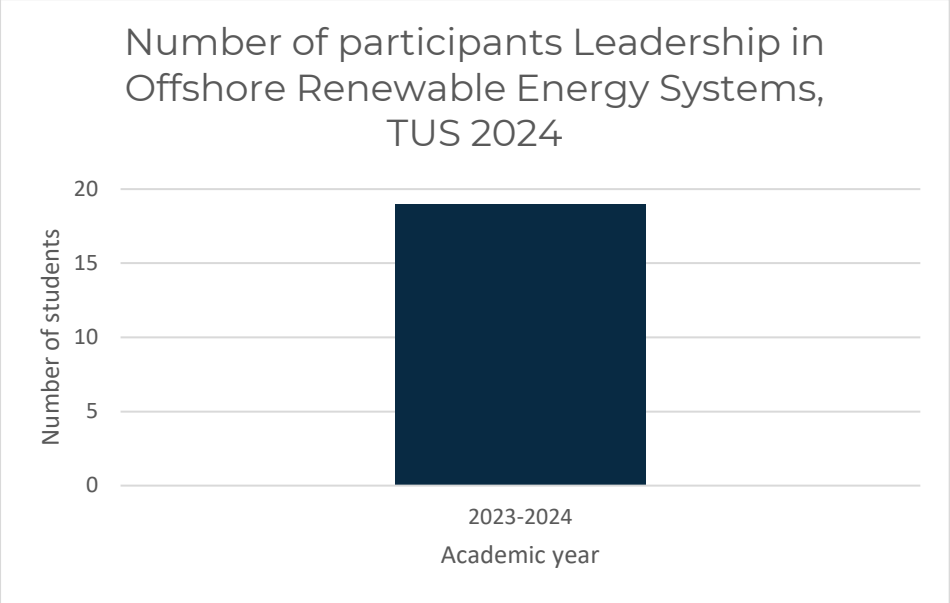

Figure 41: Number of participants Leadership in Offshore Renewable Energy Systems, TUS

Of the 19 participants, only 1 participant was not Irish but did come from the EU (Figure 42). About 33% of the participants were female, as shown in Figure 43.

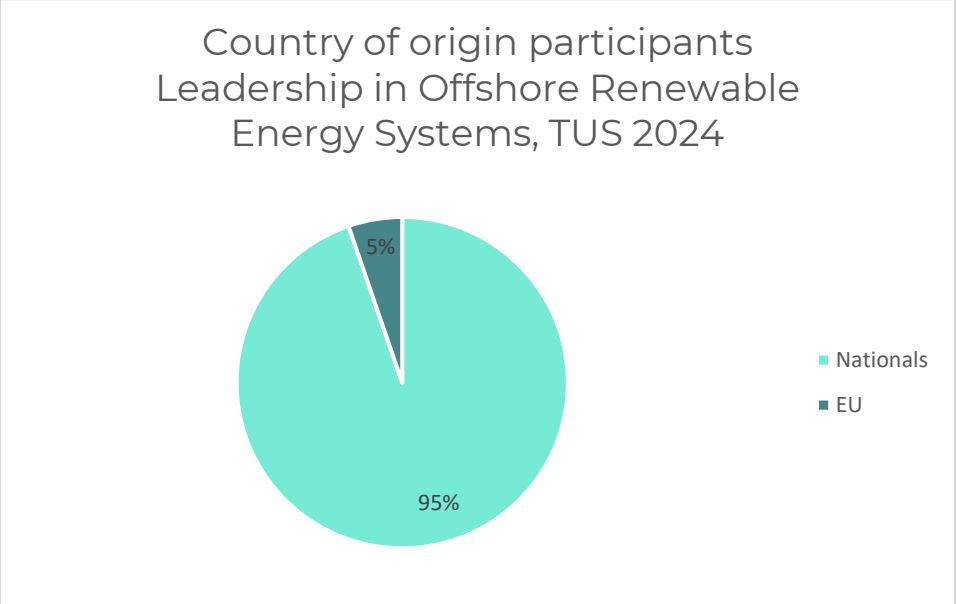

Figure 42: Origin of participants Leadership in Offshore Renewable Energy Systems, TUS

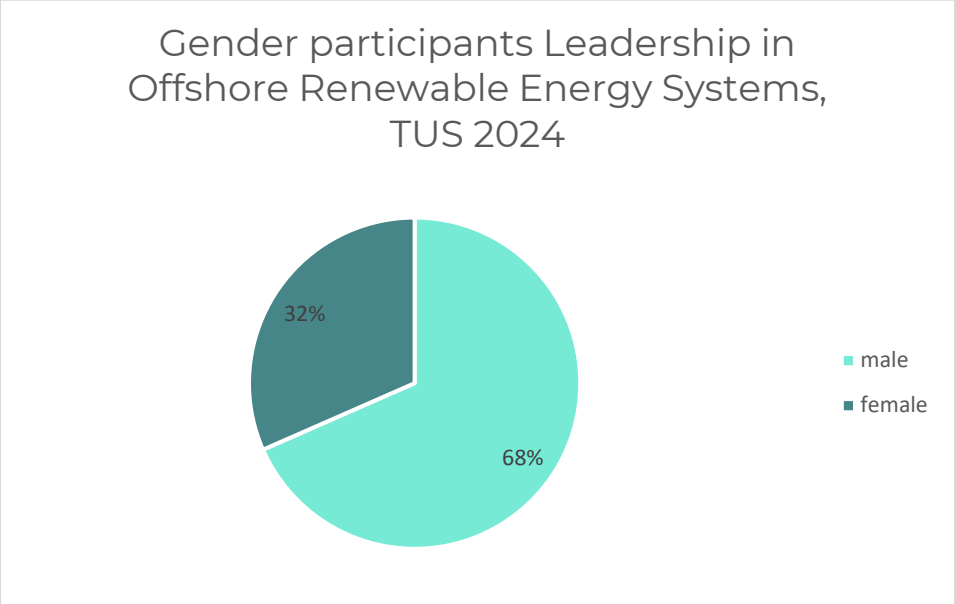

Figure 43: Gender participants Leadership in Offshore Renewable Energy Systems, TUS

For this SAP the participants must have at least 5 years of relevant work experience, and this seen in the age distribution (Figure 44). This is a similar trend to that of the Online Master's Wind Energy at DTU (Figure 8).

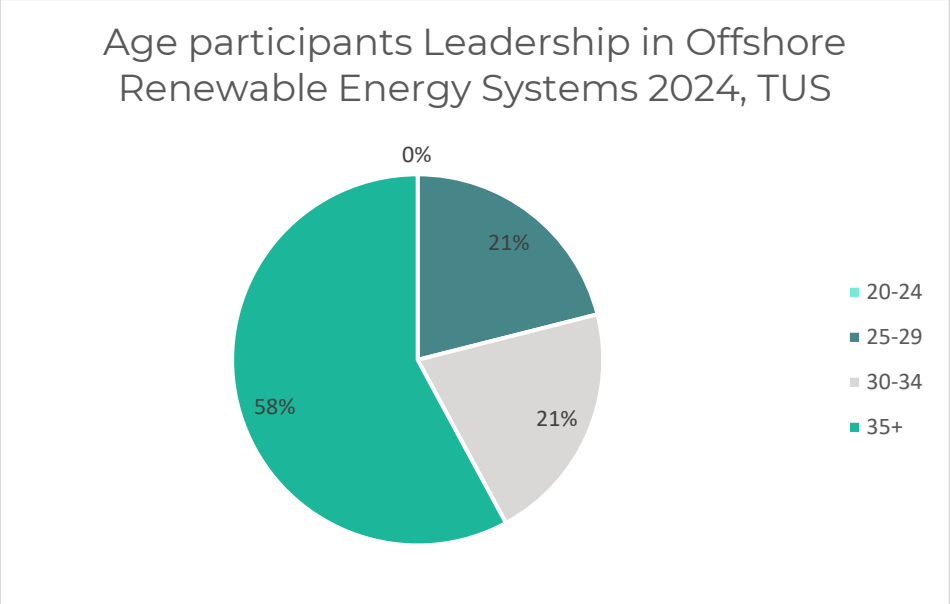

Figure 44: Age participants Leadership in Offshore Renewable Energy Systems, TUS

6 Diversity data PG

PG also does not have a MSc or Master's in Wind Energy yet but will develop a MSc within the scope of the DigiWind project.

To be able to compare diversity data of the future editions of the MSc that will run during DigiWind, the data from 4 faculties of related engineering disciplines has been collected.

The numbers available are slightly different than of the other HEI. The total number of students per faculty per academic year is given. No distinction is made between the year the students started, nor whether they are in their BSc or MSc study.

For each of these student populations per faculty, the number of female and male students are given. No information about the age of the students is known.

Especially the information about the gender of the students will be a proper benchmark for the future MSc in Wind Energy at PG.

6.1 Faculty of Electronics, Telecommunications and Informatics

From 2019/2020 to 2023/2024 there were almost 20.000 students studying at the faculty of electronics, Telecommunications and Informatics. The last academic year the number of students even exceeded the 4.000 (Figure 45).

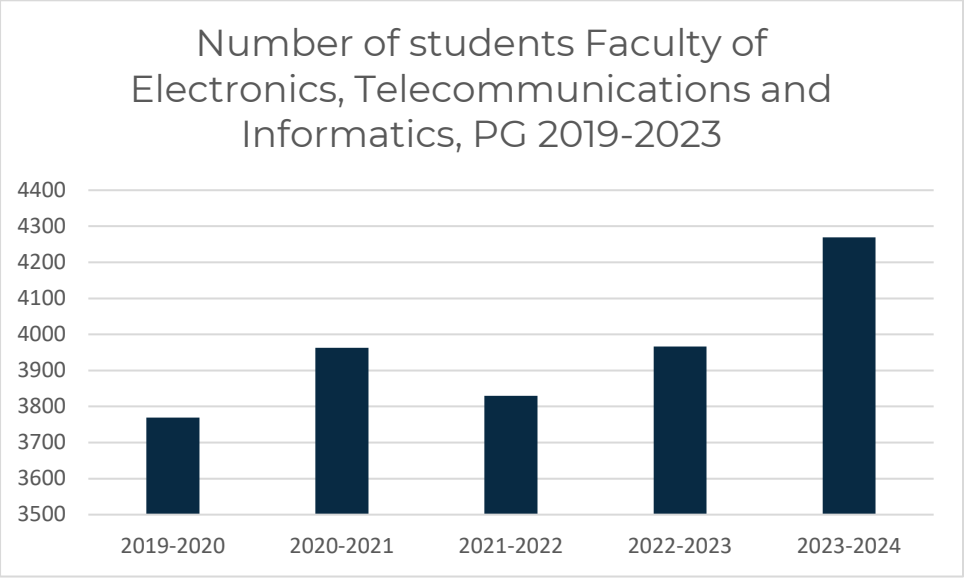

Figure 45: Number of student Faculty of Electronics, Telecommunications and Informatics, PG

Just over 80% of the students at this faculty were male, as can be seen in Figure 46.

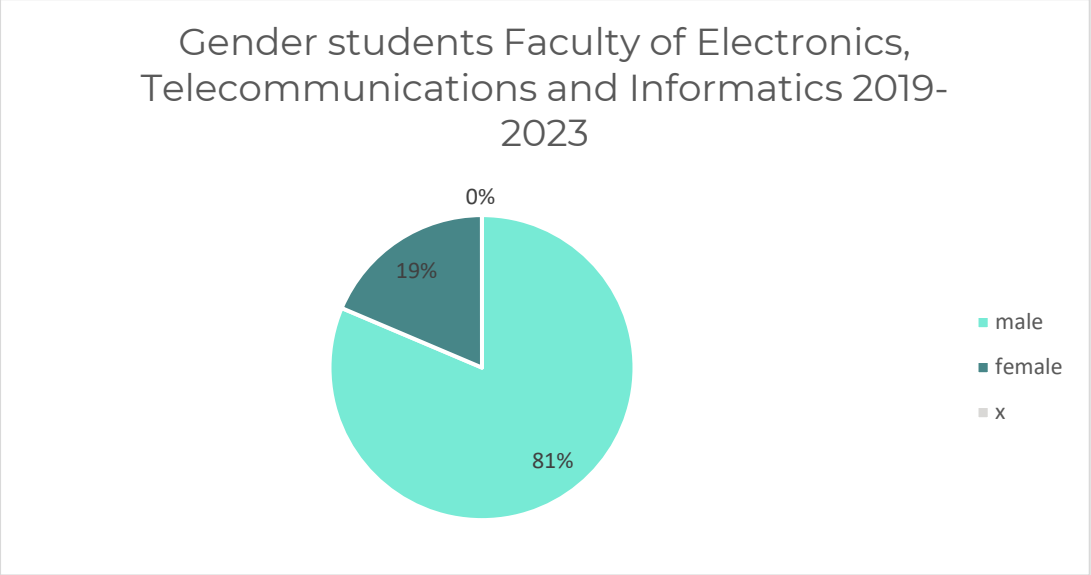

Figure 46: Gender students Faculty of Electronics, Telecommunications and Informatics, PG

6.2 Faculty of Electrical and Control Engineering

At the faculty of Electrical and Control Engineering the total number of students are substantially lower than that of the other faculties taken into consideration. About 8300 students enrolled at the faculty (Figure 47).

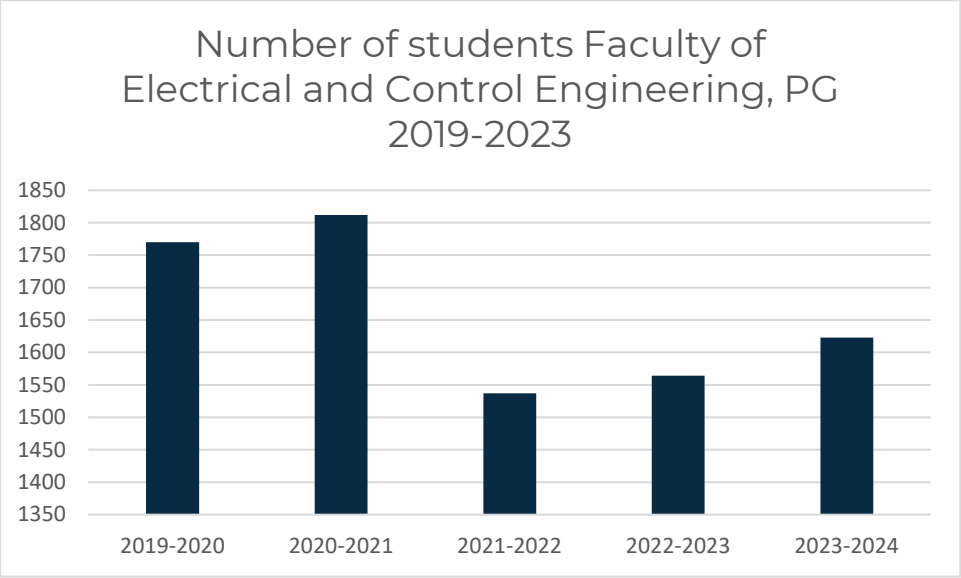

Figure 47: Number of students Faculty of Electrical and Control Engineering, PG

The share of female students at this faculty is also the lowest of all faculties take were compared. About 12% of students were female, as is shown in Figure 48.

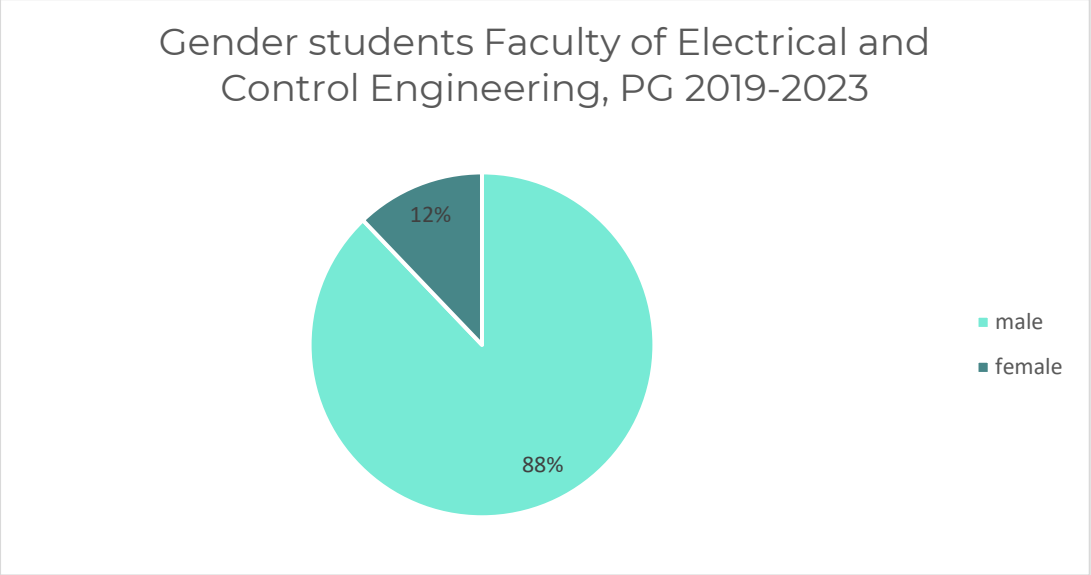

Figure 48: Gender students Faculty of Electrical and Control Engineering, PG

6.3 Faculty of Civil and Environmental Engineering

At the faculty of Civil and Environmental Engineering the total number of students have shown an increase the last four years (Figure 49). The total number of students is also almost 20.000.

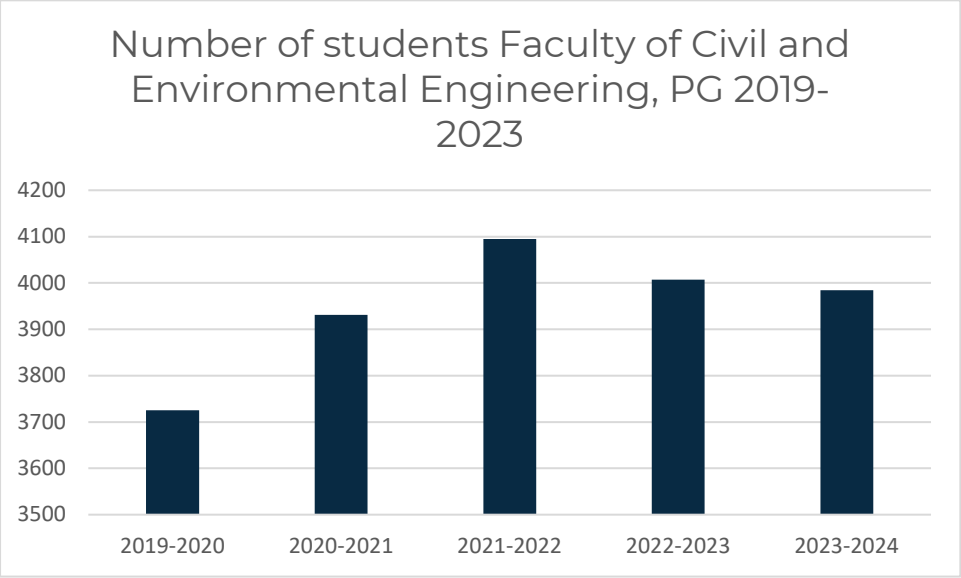

Figure 49: Number of student Faculty of Civil and Environmental Engineering, PG

At this faculty the share of female students is almost 45%, the highest seen so far in all datasets (Figure 50).

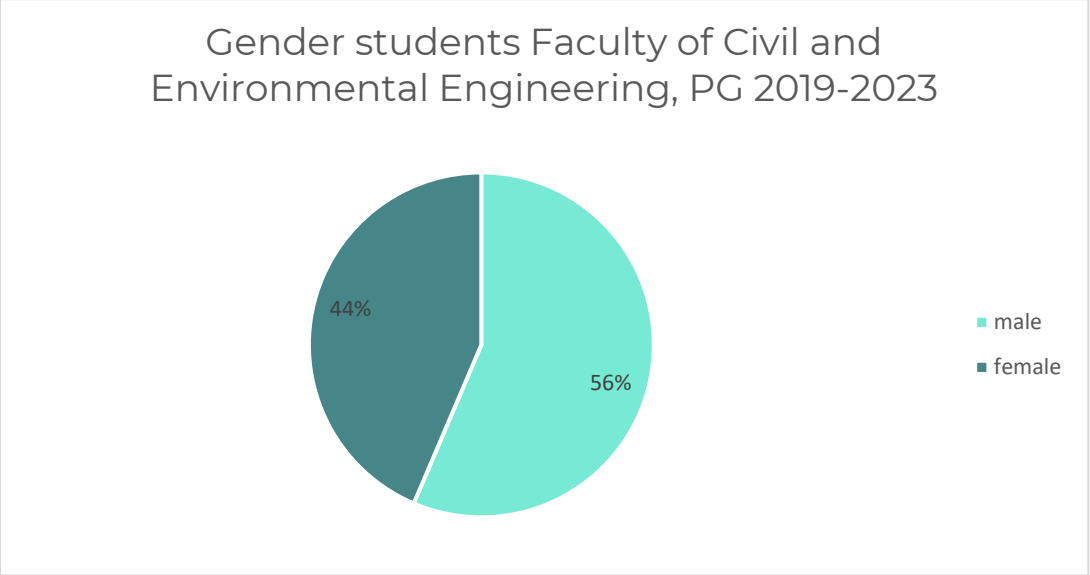

Figure 50: Gender students Faculty of Civil and Environmental Engineering, PG

6.4 Faculty of Mechanical Engineering and Ship technology

In 2021 two faculties merged into one new faculty of Mechanical Engineering and Ship Technology. Before that, there were separate faculties: faculty of Mechanical Engineering and faculty of Ocean Engineering and Ship Technology.

The dataset used for the graphs in this section are the combined dataset of the two former, separate faculties for the years 2019/2020 and 2020/2021, and followed by the dataset for the new, current faculty.

The total of students at the faculty of Mechanical Engineering and Ship Technology from 2019/2020 to 2023/2024 is almost 16.000 (Figure 51)

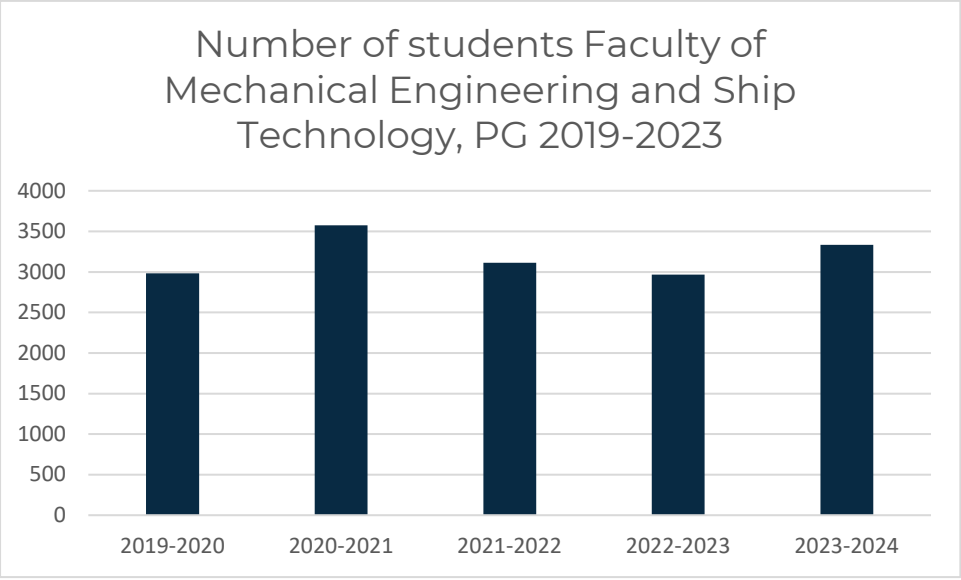

Figure 51: Numbers of students faculty of Mechanical Engineering and Ship Technology, PG

The share of female students at this faculty is about 30% over the last five years (Figure 52). Also, one of the higher percentages of female students seen in this diversity screening. Other SEPs with similar percentages are those of MSc Sustainable Engineering at DTU (32%, Figure 11), MSc Energy and Environment at NTNU (32%, Figure 39) and Leadership in Offshore Renewable Energy Systems at TUS (32%, Figure 43).

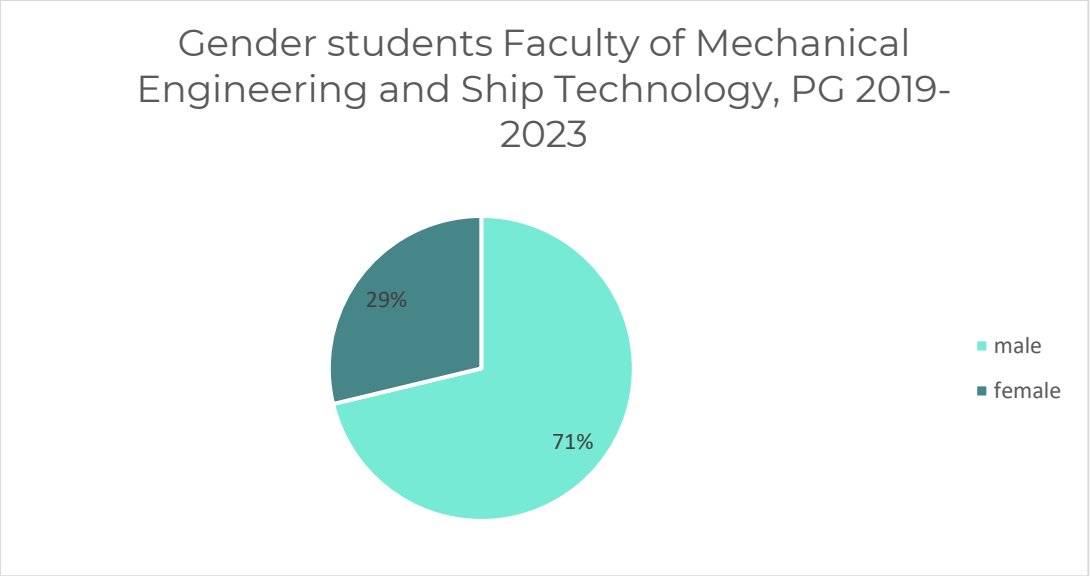

Figure 52: Gender students faculty of Mechanical Engineering and Ship Technology, PG

7 Diversity DigiWind

As mentioned earlier role models are essential when striving for gender diversity. Thus, the DigiWind team and teachers of the DigiWind courses should consist of a diverse representation, when we look at gender.

Each HEI and partner have their own diversity and inclusion policies and targets (as mentioned in section 1.2), as well as the institutions of our advisory board members. The distribution in terms of gender diversity of the team members from all the DigiWind partners and advisory board will be listed here, and their targets will be summarised where applicable.

7.1 Diversity DigiWind team members

In the first six month of the project (M06), the DigiWind consist of 96 team members, among which 35 are female and 61 are male (Table 3). This corresponds to 36% female in the team (Figure 53), which is one of the higher shares of females compared to the most of the SEPs discussed in this deliverable so far.

Table 3: Diversity DigiWind team members

	male	female
DTU	12	6
TUD	5	3
NTNU	4	3
TUS	4	3
PG	15	9
UIO	3	1
F6S	3	3
WHIF	4	0
IMR	7	5
CADP	4	2
Total	61	35

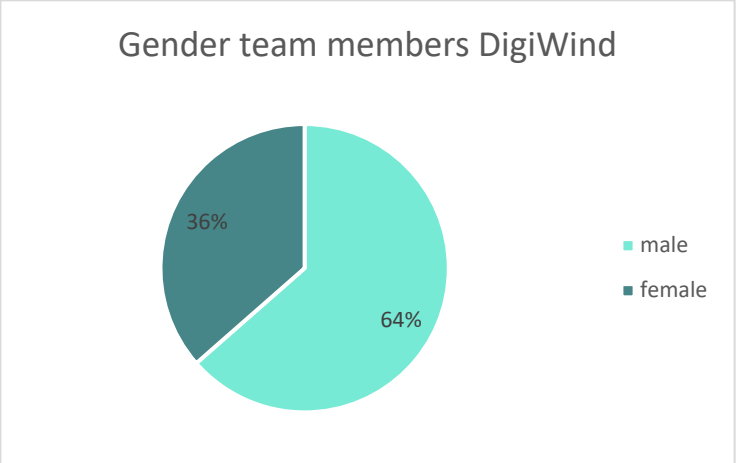

Figure 53: Gender DigiWind team members

7.2 Diversity DigiWind team members HEI partners

The entire DigiWind team consists of more than just Higher Education Institutes. If we would focus on only the HEIs that have submitted diversity data for this deliverable, we see that the share of women is slightly higher.

Table 4: Diversity among DigiWind HEI team members

	male	female
DTU	12	6
TUD	5	3
NTNU	4	3
TUS	4	3
PG	15	9
	40	24

64 Team members work for an HEI within DigiWind, 24 of those are female (Table 4). This corresponds to 38% of the HEI DigiWind members (Figure 54).

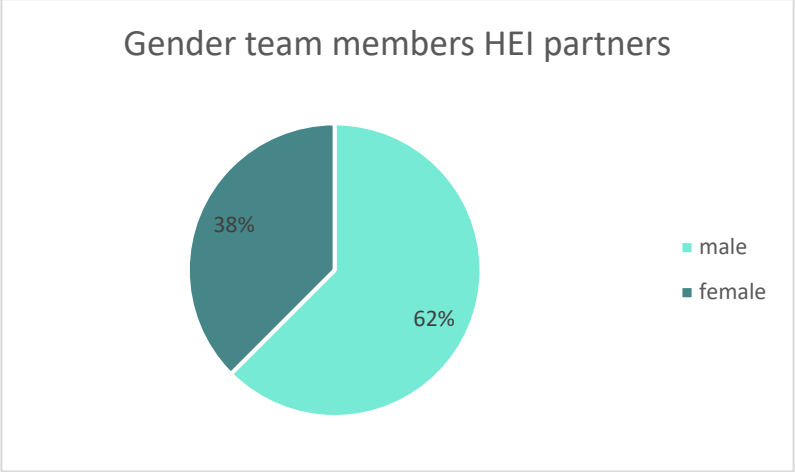

Figure 54: Gender DigiWind team members HEI partners

Thus, the project team members overall, and specifically at the HEIs, have better gender diversity numbers than most of the SEPs considered here. This is a first good step in creating role models for future engineers.

7.3 Diversity targets HEIs and industry

It is interesting to look at the targets set by some of the HEI partners themselves and several leading companies in the industry. This is a benchmark to compare the gender diversity numbers of both the SEPs and the DigiWind team members.

First, let's start with several HEIs.

Delft University of Technology has set a target of 25% female professors by 2025 [5]. No concrete targets for academic staff have been mentioned. This number is significantly higher than the students of MSc Wind Energy (which is only 10%, Figure

15). However, the diversity of TUD team (though only one professor) is higher with 37,5% (Table 4).

At **NTNU** there are two gender balance targets set, in their 'development plan for gender equality and diversity 2023-2025 [6]. The first target relates to employees and managers: units with more than 20 employees and in which a gender is under-represented by 35% or less actions should be made to increase 2-3% by 2025. The ratio of female team members at NTNU is 43% (Table 4).

The second gender balance target relates to education where the threshold is 25% of one gender amongst students. The MSc Energy and Environment at NTNU has a percentage of 32% (Figure 39), thereby meeting this threshold. The other NTNU MSc in this deliverable, Electric Power Engineering, does not meet this threshold with only 10% female students (Figure 35).

The strategic plan of **TUS** [7] does not mention any concrete numbers, however they have set an indicator of success for the strategic priority 'people and organisation'. The objective is to "***Create an inclusive Technological University people are proud to be part of and where our diverse population has a voice***" [7], and the target is 85% satisfaction rate in people able to raise their voice.

Overall, we see that the targets set by both TUD and NTNU are already lower than the diversity numbers of the DigiWind team members.

Now, let's compare these numbers with several industry leaders in the Wind and Energy Systems industry.

Siemens Gamesa has a Diversity and Inclusion Program [9], which states that in 2025, 25% of the workforce and managers should be female and in 2030 this number should be 30%.

Vestas has adapted 'Diversity, Equity, Inclusion, and Belonging (DEIB)' as part of their cultural foundation [10]. Vestas has set almost the same goals as Siemens Gamesa, with 25% of women in leadership positions in 2025, and 30% in 2030. Vestas focuses on leadership positions, whereas Siemens Gamesa also includes the workforce.

Ørsted has set more ambitious targets and will measure these at 3 levels [11]. Their ambition is to have 40% of women working at Ørsted in 2030. The levels they measure at are i) senior director and above, ii) people managers, iii) all employees.

Rambøll has the same ambitious targets as Ørsted, only for 5 years earlier. For 2025 they aspire 40% of the employees across Rambøll to be female.

An overview of these numbers is given in Table 5.

Table 5: Diversity targets industry

Company	Share female 2025	Share female 2030
Siemens Gamesa	25%	30%
Vestas	25%	30%
Ørsted		40%
Rambøll	40%	

8 Next steps gender diversity DigiWind

Given the targets set by the industry for 2025 and 2030 (Table 5) there is a significant of work to be done when we consider the current diversity numbers amongst the students of the SEPs.

The share female DigiWind team members at HEIs are 38% at this moment (Figure 54), which is higher than the targets set by Siemens Gamesa and Vestas for 2025.

The gap between the share of female students and the overall ambition of the industry is substantial. The HEIs are doing their utmost within the boundaries of national and European legislation to increase the number of female students.

The DigiWind team and teachers function as role models for the female students and future students. This is why the DigiWind team aspires to achieve a distribution equal to the targets set by Ørsted and Rambøll.

By the next diversity screening in M18, 40% of the DigiWind team members and teachers that have a visible and public role within the project are aspired to be females. No distinction will be made among the seniority of the educators and project executors, the main criteria is that they are visible to the public. This may vary from project execution, teaching, promoting wind and energy education, presence on social media, speaking at conferences, etc.

9 References

[REF-01]	European Institute for Gender Equality, GEAR toolkit, website: eige.europa.eu/gender-mainstreaming, date accessed 28 May 2024
[REF-02]	Council of Europe. Gender Mainstreaming toolkit for co-operation projects, October 2018
[REF-03]	DigiWind. D1.3 Data Management Plan, March 2024
[REF-04]	DTU. Diversity, Equity and Inclusion, website: dtu.dk/English, date accessed 28 May 2024
[REF-05]	TUD. Diversity and Inclusion, website: tudelft.nl/en, date accessed 28 May 2024
[REF-06]	NTNU. Development plan for Gender Equality and Diversity 2023-2026, website: ntnu.edu
[REF-07]	TUS. Strategic Plan, website: tus.ie, date accessed 28 May 2024
[REF-08]	PG. Strategy on Equal Treatment, website: pd.edu.pl/en, date accessed 28 May 2024
[REF-09]	Siemens Gamesa, Diversity and Inclusion Program, website: Diversity and inclusion in wind energy | Siemens Gamesa, date accessed 26 June 2024
[REF-10]	Vestas, Diversity, Equity, Inclusion & Belonging, website: Diversity, Equity, Inclusion & Belonging (vestas.com), date accessed 26 June 2024
[REF-11]	Ørsted, Diversity and inclusion, website: Diversity and inclusion (orsted.com), date accessed 26 June 2024
[REF-12]	Rambøll, Equality, Diversity and Inclusion policy, website: Equality, Diversity, and Inclusion (EDI) policies - Ramboll Group, date accessed 26 June 2024