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Analysis of qualification requirements

A study has been performed of the human resource qualifications that are required for the emerging offshore wind industry. In five EU member states (Belgium, Denmark, Germany, Great Britain and the Netherlands) a total of 32 companies from all sectors of the offshore wind energy industry participated in expert interviews. The interviews dealt with current qualification profiles, new requirements for offshore wind energy, expected personnel development and further education requirements

The study revealed that new qualification requirements arise, both cross-sector and sector-specific. Cross-sector requirements concern project management, national and international law, quality assurance, occupational safety and health care, technical English and English for negotiations as well as offshore training. Sector-specific qualification requirements will develop in engineering, welding and fibre composite technology as well as additional mechatronic knowledge for assembly and service employees. The study showed that further education in the industry follows three routes: In-house training, learning on the job and external training. The majority of companies deal with the necessary further education through in-house training. Large companies run their own competence centres with company-specific training programmes. Learning on the job is a common way of introducing employees to their new tasks. This is done by experienced "old hands" in the business who act as a mentor for new employees. In comparison, the role of e-learning and hybrid forms such as blended learning is very limited. In addition, use is made of external further education seminars, institutes of further education, professional associations, and higher education institutions and university competence centres. However, there is a lack of information on external training possibilities in all the countries investigated: who offers what and under which conditions. In response to this problem, POWER WP.3 developed a database of relevant external training and education offers in the region.

Harmonisation of qualification requirements

A key problem in the new offshore wind energy sector was found to be the lack of comparability and acceptance of national standards and qualifications in education and training.

The offshore wind energy industry will require highly advanced technologies, optimal management skills and huge investments. Offshore wind farm development will without any doubt be cooperation between companies from different European countries and consequently technicians will have to work together in international teams.

However, doubts arise regarding compatibility of certification of human resource qualities. This is in particular the case for vocational qualifications. Vocational training is defined nationally in individual countries, but the application of vocational qualifications is international in the European single market: could a German electrician work on an English offshore platform?

It is clear that to enhance cross-border cooperation of European countries, work must be compatible in terms of its qualifications. POWER WP.3 took the initiative to organise a special workshop on the topic of harmonisation of training which took place 26th of April 2007 at the Wind Training Centre Bremen. The workshop attracted approx. 40 participants from Germany, the UK, The Netherlands and Denmark and both from educational institutes and from industry.

The workshop dealt with existing international training, current regulations and certificates and requirements for the offshore wind energy industry.

The overall conclusion reached at the Workshop was that the best way to support the process towards harmonisation for those working in the field is a bottom-up approach. Possible approaches are for instance: to exchange information on national education and vocational training, to implement joint international projects and examples or to organise an intensive exchange of teaching staff.

Following the workshop, an initiative has been taken between UK, Danish and German educational institutes to set-up such a joint vocational training.

Offshore specific training

A core activity regarding education and professional training in POWER is the development, testing and evaluation of curricula for cross-sector offshore specific training.

Based on the results of the analysis of qualification requirements, a set of modules is set up which can be combined into a specific course for a specific target group. The modules are developed and taught by experts from the participating institutes from different countries to reflect the international environment in which offshore wind energy workers have to operate.

The development is highlighted by the following three events:

2005 Den Helder (NL): Intensive exchange meeting

2006 Bremen/Bremerhaven (G): German Offshore Summer School

2007 Lowestoft (UK): UK Offshore Summer School

2005 Den Helder (NL): Intensive exchange meeting: The aim of this meeting was to explore the knowledge available with the POWER partners. Different pedagogic methods were tested, such as interactive workshops, brainstorming, metaplan and deduction techniques.

2006 Bremen/Bremerhaven (G): German Offshore Summer School: The German Offshore Summer School was organised 4 ~ 9 September in Bremen and Bremerhaven. It offered specific offshore wind energy related courses and practical training to a total of seventeen participants: students, technicians and professionals from academic institutions and industry in Germany. Items covered include:

technical issues of offshore wind farms (loads, support structures, construction, operations and maintenance)

interaction between engineers and technicians and to work in international and interdisciplinary teams (team training)

technical English

offshore wind farm risk assessment

marine safety training and rescue procedures

2007 Lowestoft (UK): UK Offshore Summer School/Wind Master Class

For marketing reasons, the name "POWER UK Offshore Wind Master Class" has been used instead of Summer School. It was conceived as a follow up to the 2006 German Offshore Summer School. Lowestoft College organised and hosted the 3 day master class on 30th May to 1st June 2007. To attract a private sector audience the master class was run over 3 days (i.e. shorter than the 6 day 2006 Summer School) and

attracted a total of fifteen participants, many from industry. The programme covered the following items:

- offshore wind energy in the UK and North Sea region
- technical issues of offshore wind farms (loads, support structures, construction, operations and maintenance)
- wind as a resource, effects of wake
- marine safety training

Curriculum

The end product of the POWER activity on cross-sector offshore wind specific training is a curriculum, in the form of a set of tables describing available modules, including items as duration, content, learning objectives, target groups and methods. The material can be used as an information source to set-up courses or, alternatively, to order courses from partners of the POWER team.

Review of available education

In view of the found lack of information on available education and training it was decided to prepare such information in the form of a database of available courses related to offshore wind energy and to prepare an analysis of the existing potential of Master courses in wind energy to include offshore wind related knowledge. The database is available on www.fk-wind.de/POWER/ (external link). It contains a search function to identify relevant institutions, available knowledge and possible commercial and non-commercial courses.