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Skills and training for the wind industry

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NÄTVERKET FÖR VINDBRUK





Nearly **3.5%** of global electricity is provided by wind and Sweden has achieved **7%** of its electricity needs in 2013 with wind power.



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**But the field's fast development has
lead to a shortage of personnel!**



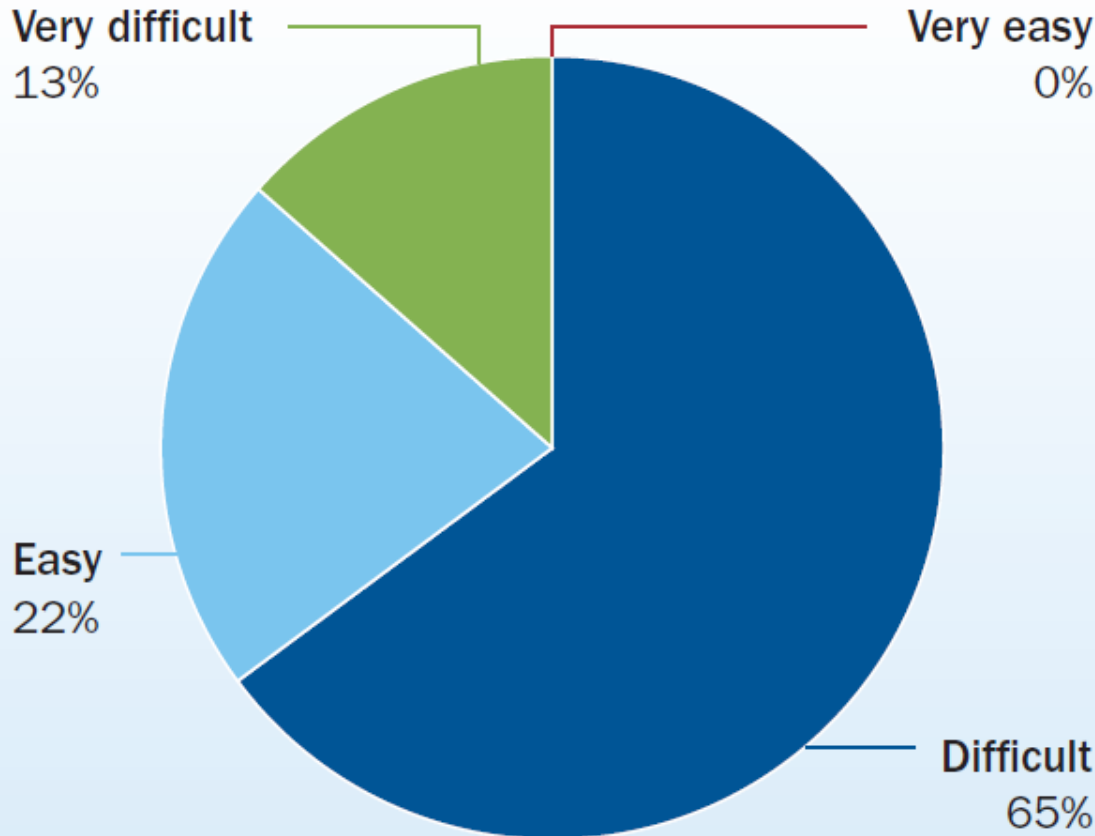
Wind's Educational Needs

- A shortage of 10 000 engineers by 2020 in Europe
- A broad need for both specialized/integrated education
- A need for education that has the new combinations of required competencies



Employers in the wind power industry

Ease of Finding Qualified Employees

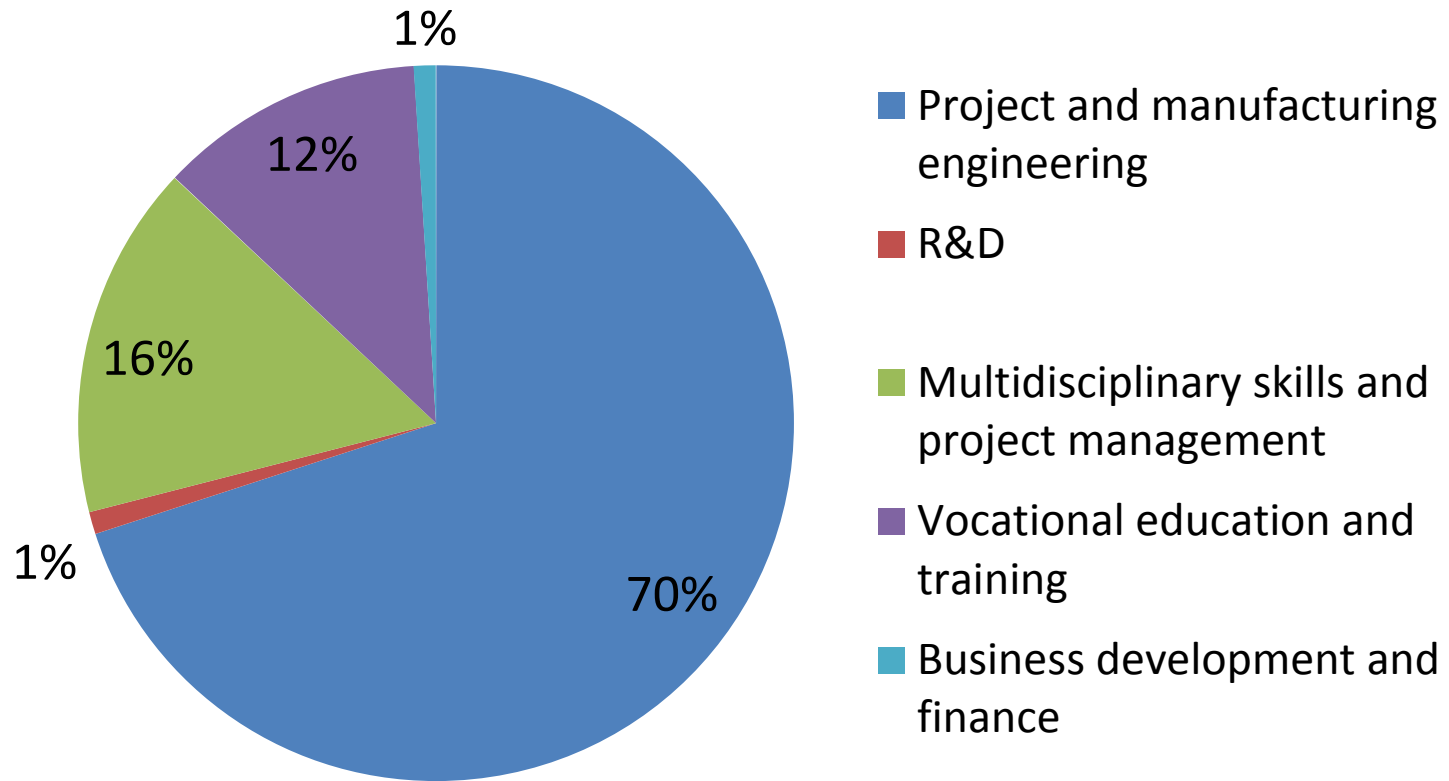


78% employers say that finding qualified employees was difficult or **very difficult!**



Employment opportunities in the wind power industry

Employment areas by %



Source: TPWind survey



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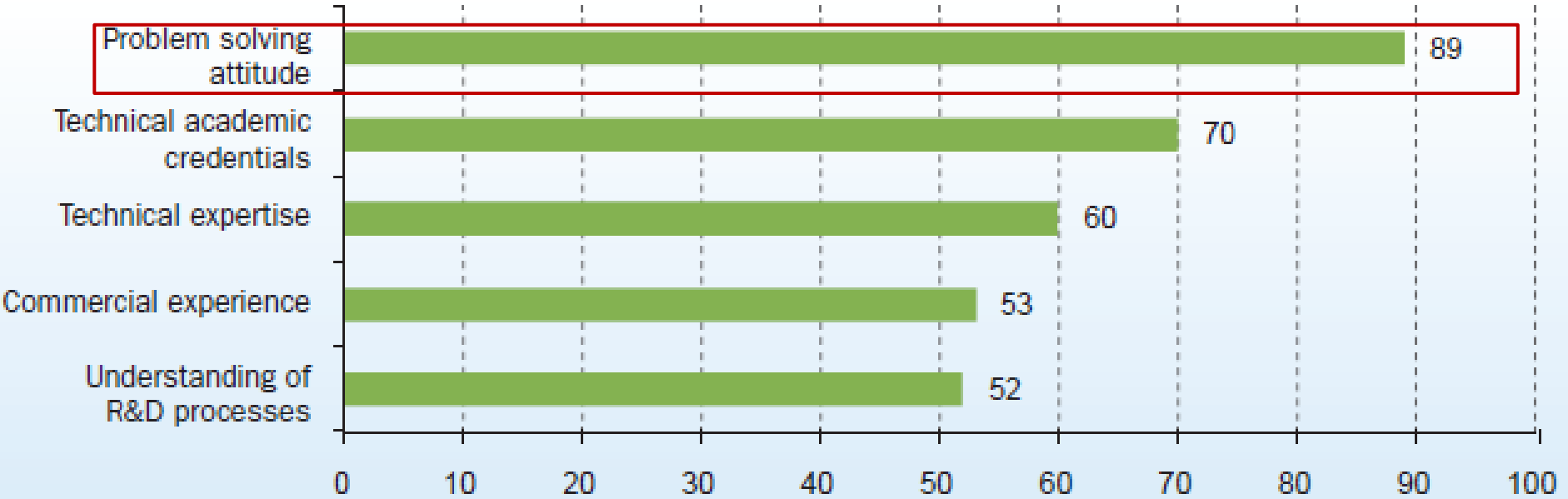
There are Bachelor and Master level programmes available in Europe and North America...

But there is a lack of programmes for graduates to develop, build and operate wind farms!

Offshore programs also need significant development!



The most important skill employers are looking for?





This shortage of individuals with the needed skills is most apparent for engineers, wind technicians and project managers.

FIGURE 2 SKILLS AREAS WITHIN THE WIND INDUSTRY*

Academic research, design and R&D

- Loads and aerodynamics
- Consultancy
- Electrical/grid (inc. software)
- Wind turbine technology

Project engineering (construction and O&M)

- Electrical/power engineering
- Civil engineering
- Mechanical engineering
- Commissioning
- Maintenance

Project management, project development and multidisciplinary skills

- Project management
- Energy resource assessment
- Spatial planning/consenting
- Policy/regulatory analysis
- Project development and project management
- Legal experts
- Communications

Finance

- Wind energy finance
- Project finance
- Corporate finance

Manufacturing engineering

- Electrical/power engineering
- Quality control
- Diagnostics
- Metal fabrication
- Machining
- Mechanical and electrical fitting
- Testing

VET (Vocational Education and Training)

- Service and maintenance
- Installation and commissioning
- Introduction to wind energy
- On-site safety (eg. Global Wind Organisation training platform)
- Fire fighting
- Tower climbing
- Rescue
- First-aid

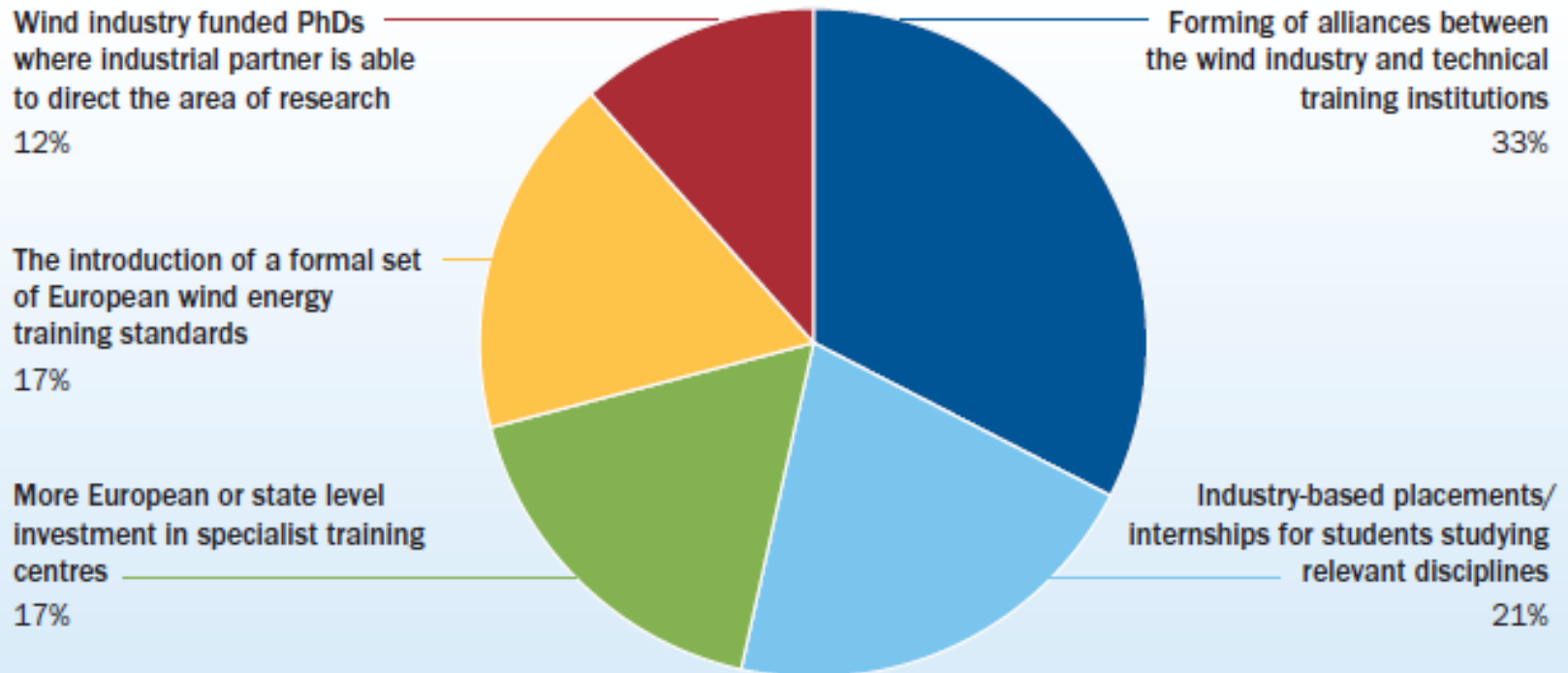
Business development

- Direct sales
- Marketing
- Communications



The best way to improve education?

SUPPORT FOR WAYS TO IMPROVE THE AVAILABLE EUROPEAN WIND ENERGY TRAINING COURSES



Source: TPWind survey

Industry collaboration!



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Sweden has:

Training for wind
technicians at
vocational centres



University
engineering
programmes that
have sections on
wind power

But only one wind
power project
management
programme!



 Folkuniversitetet

 Lernia


 Cfl
centrum för
flexibelt lärande
Säkerhetsnämnden

 Hjalmar
Strömerskolan
Strömsunds
Kommun

 STORUMANS LÄRCENTRUM

 Lapplands
Lärcentra

Trollhättans Lärcentrum

Christopher Polhemgymnasiet 



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Past and future students!

