



IMPORTANCE OF TECHNICAL RULES AND REGULATIONS

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Importance of rules and regulations to support cost reductions, industrial development and safety

Examples of high importance

- ✓ Harmonisation for higher safety and lower costs
- ✓ Flexibility of consenting delivers cost reductions
- ✓ Sharing best practices of certification of standards
- ✓ Grid codes: when markets work better than rules
- ✓ Industry does cost effective site development



Harmonised safety standards can improve safety and reduce costs

Examples for harmonisation



- Crew transfer vessels (vessels below 500 Gross tonnes) are regulated on national level
 - Construction standards
 - Vessel crew certification and training standards
 - Opens for competition between countries (flag states)



- Offshore safety standards differ from country to country such as procedures for personnel transfer
 - Differing standards for use of fall arrestor equipment
 - Differing standards for transfer by daughter craft

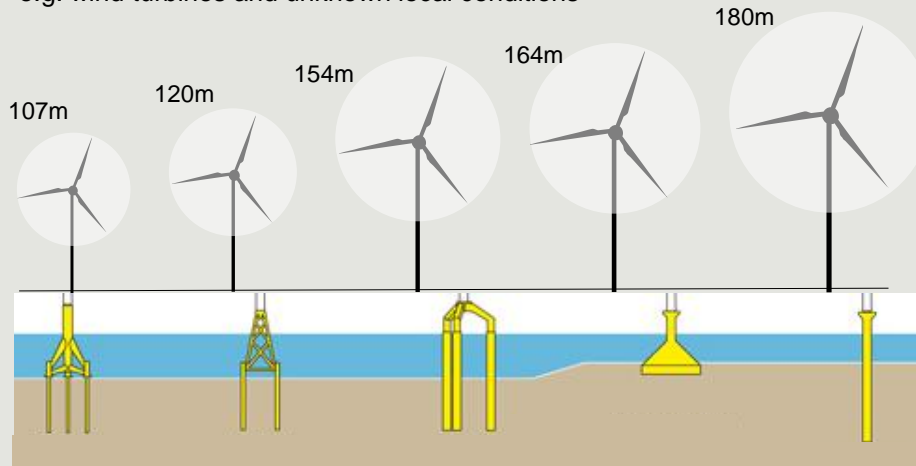
Harmonise for safety and cost efficiency

- ✓ Share best practice for higher safety
- ✓ Avoid complexity for personnel that operate in several countries
- ✓ Support strong safety culture
- ✓ Reduced setup costs
- ✓ Avoid competition between countries that can compromise safety

Flexibility in consenting delivers tangible cost reductions

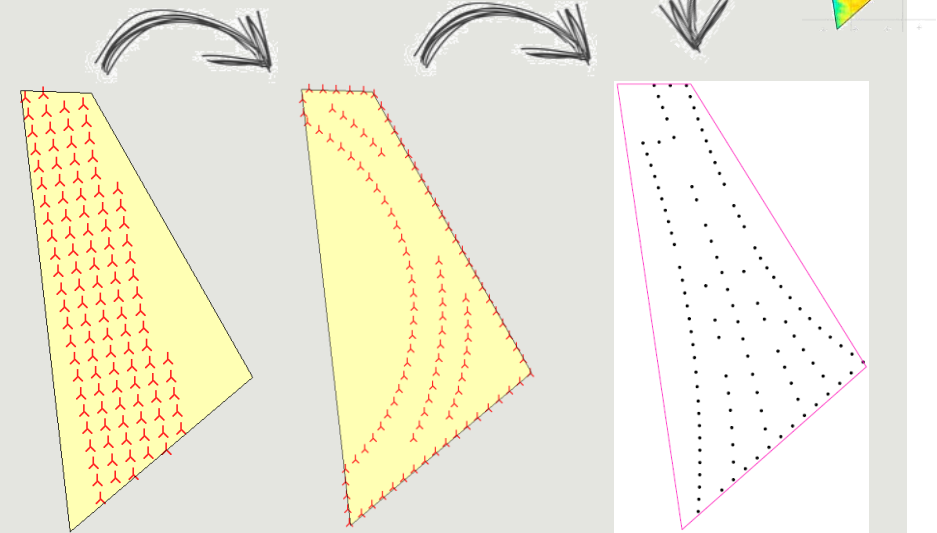
Flexibility in technical consenting envelope

Rapid development of the various components
e.g. wind turbines and unknown local conditions



- Allowing for flexibility for choice of technology allows for adjustment to local circumstances and for development of new technology
- Driver for least cost solutions and industrial development

Flexibility in park design and layout



Requirement for
line orientation

Consenting for
specific positions

Flexibility for
optimal layout within
fixed borders

- Layout optimised to seabed and advanced wind analytics saves costs and improves output

Differing building standards and norms adds costs – does it add value?

Example: National certification of standards



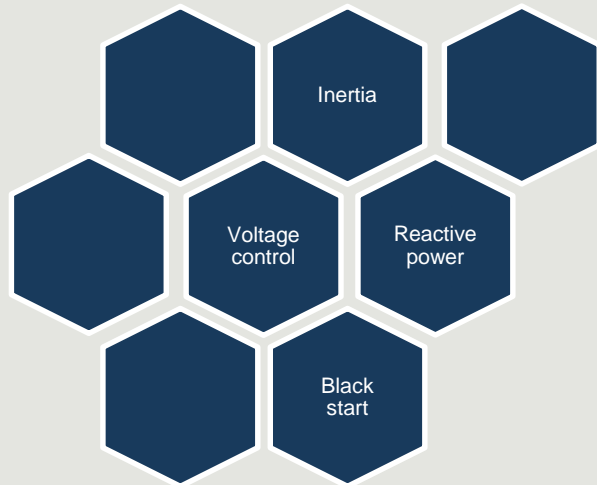
- Nationally specific design criteria and requirements based on certification of standards from other sectors and desk top assessments increase complexity, risk of “over engineering” and adds costs

Harmonised certification of standards based on best practice and tailor made offshore wind

- ✓ Continuous sharing of experiences and best practice allows for development and improvement
- ✓ Harmonisation allows for scale and execution excellence
- Better outcome at lower cost

Markets ensures system service capabilities and delivery more cost efficiently than rules and regulations

Example: national grid codes put requirements on equipment instead of monetizing system services



- Total costs of requirements for all power generation equipment may be higher than necessary
- Requirements on specific equipment, such as offshore wind, may undermine a level playing field
- TSO incentives may be distorted by access to order, rather than requirement to buy capabilities and services

Create markets rather than rules

- ⬇ Importance of flexibility capabilities, reserves and other ancillary services is increasing for system reliability
- ⬇ Need to encourage innovation and new business models, to ensure the supply of system services from as many sources as possible – thermal generation, wind, interconnectors, demand, storage....
- ⬇ Grid codes must use incentive based regulation to the greatest extent possible, rather than rules and requirements
- ⬇ TSOs/regulators must define needs as precisely as possible, create markets whenever it is possible, and establish regulated payments when markets are not possible
- 😊 Carrots brings out the best
- 😞 Sticks may avoid the worst

The market is a strong harmoniser and standardiser

Example: let developers do site investigation and development

- ✓ Developers will develop execution excellence from scale and experience across markets
- ✓ Developers can quickly shift and deploy necessary site development resources between markets
- ✓ Developers will be able to shape site development to their own business model and appetite for risk, avoiding interface problems, and overlaps and gaps between national, government initiated site development
- ✓ Including site development in the scope of developers falls naturally in a future where offshore wind is cost competitive, and will be developed at very large scale

