**Simplify the complexity of your drive train by certification - saving cost and generate added value**

Axel Dombrowski, Andreas Bockstedte
DNV GL Energy Renewables Certification

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**Standard DNVGL-ST-0361**
**Machinery for Wind Turbines**

Based on very well known DNV and GL standards and guidelines, existing and upcoming IEC standards as well as Global Innovation and Joint Industry Projects (GIP and JIP) DNV GL issued a new standard for the machinery of wind turbines to simplify the certification process, including:
- Material chapter taking findings from latest research projects into account
- Calculation concept connected to material characteristics
- Featuring several additional aspects, not covered by IEC standards
- Alternative certification approaches can also be applied

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**Quality - from the perspective of the Energy Trilemma**

In business, engineering and manufacturing, quality has a pragmatic interpretation and it is defined as **fitness for purpose**.

Quality has subjective attributes and may be understood differently by different people. Hence there is a need for standardization of quality.

This is what lies at the core of certification work: Independent demonstration of the **Quality of your product**

A trilemma typically shows three problems and it is difficult to solve all three simultaneously. The challenge is to ensure affordable, reliable and sustainable drive train components. These three challenges influence equally the basis of a triangular gyro and need to be balanced on the base point to deliver the highest level of quality

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**Service Specification DNVGL-SE-0441**
**Type and Components certification of wind turbines**

To meet all challenges across the entire complexity of a drive train, a holistic view is essential.

The Service Specification SE-0441 for "Type and Component Certification for Wind Turbines" covers all technical requirements providing the most comprehensive and holistic overview compared to existing schemes such as related certification schemes according to IEC 61400-22.

Optional services may be added to extend the use of respective certificates by e.g. adding more options or markets. All in all this service specification is the basis to simplify and reduce the cost by e.g. combining type testing and manufacturing evaluation during Component Certification within one inspection.

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**References**