



Workstream 3

Content requirement for customer information

Who are part of WS3

SIEMENS Gamesa
RENEWABLE ENERGY

Vestas

 GE Renewable Energy

 **NORDEX**

VATTENFALL 

RWE

Ørsted

What is the purpose of WS3 and what is it based on?

If the industry becomes more aligned on the deliverables of information/documentation, then it saves time for all parties

The work is based on censored versions of a real contract

“Documentation” versus “Information”

“Documentation” gives a perception of a lot of pdf documents

Therefore we instead use the word “Information” because it indicates that the needed info doesn’t necessarily needs to be provided as pdf documents

What are the main deliverables from WS3?

- Guideline describing e.g.
 - Scope
 - Terms and definitions
 - Technical information content requirements
 - The four Tiers



The 4 Tiers

Tier 1

Information and documentation required according to the Machinery Directive and EN ISO 20607:2019 and IEC 82079-1:2019. here the O&M is done outside design specification)

Tier 2

A minimum package of Information (In addition to the information specified under tier 1) which a turbine owner must be in possession of for Normal Operation purposes.

Tier 3

Information (In addition to the information specified in tiers 1+2) which is required for the parties which takes over the performance of O&M and/or Installation (where such activities are done within design specification). Receivers of the information shall be identified via an agreement.

Tier 4

Information (In addition to the information specified in tiers 1+2+3) based on individual negotiations. Some Tier 4 information may be required for the party other than the OEM which take over the performance of O&M (where the O&M is done outside design specification)

Two of the important definitions in the work

Shall Supply

Supply is a mode of communication of information, where the OEM must deliver the information to the relevant parties, in a format, that enables the relevant parties to have access to the information for continuous use for an agreed duration within limitations of non-disclosure agreements, if required by the parties

Make Available

Make Available is a mode of communication of information, where the OEM must, on request, provide the relevant parties with the content of the information concerned. The format for sharing information must take into consideration (1) the sensitivity of the information, (2) the purpose for sharing the information, and (3) the resources spent on accessing the information by the OEM and the receiver of the information.

However, the OEM is not required to Supply the information to the relevant parties.

How are workstream 1-3 getting interconnected?

	A	B	C	D	E	F	G	H	I	J	K
1	Reference	System	Information set	New proposal	Content requirement	Standard (if any)	Delivery format	Indicative Deadline	Tie	DCC	RDS-PS
2	E18	High Voltage Systems	Technical Information	Concept single line diagrams for the High Voltage systems.	The Contractor shall Supply a concept single line diagrams for the High Voltage systems		Supply	01 - Project Design Phase	2		
3	E18	High Voltage Systems	Technical Information	Single line diagram for the High Voltage system.	The Contractor shall Supply a single line diagram for the High Voltage system		Supply	08 - Test on Completion (incl. 240h test)	2		
4	E18	High Voltage Systems	Technical Information	Data sheet for High Voltage cable and other HV equipment.	The Contractor shall Supply data sheet for High Voltage cable and other HV equipment.		Supply	01 - Project Design Phase	3		
5	E18	High Voltage Systems	Design Information	Technical report describing all HV internal arc flash safe areas and unsafe areas e.g. blow out areas and dangerous areas.	The Contractor shall Supply a technical report describing all HV internal arc flash safe areas and unsafe areas e.g. blow out areas and dangerous areas.		Supply	01 - Project Design Phase	2		
6	E18	High Voltage Systems	Design Information	Ammdement to the arc flash technical report including incident energy level calculations for all HV cabinets up to 15kV and for enclosures above 15kV or above 1500V DC. All arc flash mitigations shall be included in the report with a reference made to the corresponding enclosure internal arcing test report or other arc flash mitigation validation reports stating the final incident energy level for the area.	The Contractor shall Supply additionally to the arc flash technical report an ammdement that shall include incident energy level calculations in accordance to IEEE 1584 for all HV cabinets up to 15kV and NFPA 70E Annex D for enclosures above 15kV or above 1500V DC. All arc flash mitigations shall be included in the report with a reference made to the corresponding enclosure internal arcing test report or other arc flash mitigation validation reports stating the final incident energy level for the area	IEEE 1584 NFPA 70E Annex D	Supply	01 - Project Design Phase	3		
7	E18	High Voltage Systems	Testing / Verification Information	Type test report.	The Contractor shall Make Available type test report according to IEC 60840.	IEC 60840	Make Available	01 - Project Design Phase	4		
8					The Contractor shall Make Available type test report according to relevant parts of following standards: IEC60332-1, IEC 60754-1, IEC 60754-2, IEC 61034 and IEC 60811.	Relevant parts of: IEC60332-1 IEC 60754-1 IEC 60754-2 IEC 61034 IEC 60811	Make Available	01 - Project Design Phase	4		
9	E18				The Contractor shall Supply an enclosure internal arcing test report for all HV enclosures in accordance with IEC 62271-200 (this requirement shall be applied for voltage ratings above 52 kV). This requirement is not limited to HV Switchgears but all HV enclosures e.g. HV cable/busbar connection enclosures, HV Transformer enclosures, HV converter enclosures, HV Generator enclosures etc.	IEC 62271-200	Supply	01 - Project Design Phase	4		
10					· test of functionality of smoke sensors and fire alarm systems		Supply	01 - Project Design Phase	2		
11					· test of switchgear control and tripping functions incl. from transformer surveillance		Supply	01 - Project Design Phase	2		