88/908/NP

NEW WORK ITEM PROPOSAL (NP)

PROPOSER:	DATE OF PROPOSAL:
United States of America	**2022-09-16**
DATE OF CIRCULATION:	CLOSING DATE FOR VOTING:
2022-09-23	**2022-12-16**

IEC TC 88 : WIND ENERGY GENERATION SYSTEMS

SECRETARIAT:	SECRETARY:
Denmark	Mrs Christine Weibøl Bertelsen
NEED FOR IEC COORDINATION:	PROPOSED HORIZONTAL STANDARD: ☐
	Other TC/SCs are requested to indicate their interest, if any, in this NP to the TC/SC secretary

FUNCTIONS CONCERNED:

☐ EMC ☐ ENVIRONMENT ☒ QUALITY ASSURANCE ☐ SAFETY

TITLE OF PROPOSAL:

Standard file format for sharing power curve information

☒ STANDARD ☐ TECHNICAL SPECIFICATION

PROPOSED PROJECT NUMBER: 61400-16

SCOPE
(AS DEFINED IN ISO/IEC DIRECTIVES, PART 2, 14):

The proposed standard will establish minimum reporting requirements for OEMs to communicate wind turbine power curve information. The design basis of the turbine associated with a particular power curve will always be tracked, to ensure that site suitability evaluations can be conducted in parallel with energy analysis. A key objective of the proposed standard is to define a machine-readable file format that will benefit all stakeholders.

PURPOSE AND JUSTIFICATION
INCLUDING THE MARKET RELEVANCE AND WHETHER IT IS PROPOSED TO BE A HORIZONTAL STANDARD.
MARKET RELEVANCE SHOULD BE ADDRESSED BY INDICATING THE NEED FOR THE CORRESPONDING STANDARDS WORK AND ITS GLOBAL RELEVANCE (SEE ISO/IEC DIRECTIVES, PART 1 ANNEX C)
IF PROPOSED AS A HORIZONTAL STANDARD, IDENTIFY AS POSSIBLE, THE CORRESPONDING APPLICABLE GUIDE(S) AND ASSOCIATED ADVISORY COMMITTEE(S) (SEE GUIDE 108).

Currently, power curve information is communicated in many different ways with varying degrees of background information (incomplete or missing critical details). Often the necessary information is spread across multiple documents requiring human interaction. Sometimes, the core power curve information is in a locked format that requires manual transcription which can lead to errors. Furthermore, power curves are becoming more complex with different operating modes, ranges of air density and turbulence intensity, thermal derates, thrust settings, and more. The growing complexity makes data management quite challenging. Owners and their agents across the globe would all benefit from improvements in how power curve related data is communicated; errors would be reduced, duplication of post-processing by different entities avoided, and analysis accelerated.

PLEASE SELECT ANY UN SUSTAINABLE DEVELOPMENT GOALS (SDGS) THAT THIS DOCUMENT WILL SUPPORT. FOR MORE INFORMATION ON SDGS, PLEASE VISIT OUR WEBSITE AT HTTPS://WWW.IEC.CH/SDG/

☐ GOAL 1: No Poverty	☐ GOAL 10: Reduced Inequalities
☐ GOAL 2: Zero Hunger	☐ GOAL 11: Sustainable Cities and Communities
☐ GOAL 3: Good Health and Well-being	☐ GOAL 12: Responsible Consumption and Production
☐ GOAL 4: Quality Education	☒ GOAL 13: Climate Action
☐ GOAL 5: Gender Equality	☐ GOAL 14: Life Below Water
☐ GOAL 6: Clean Water and Sanitation	☐ GOAL 15: Life on Land
☒ GOAL 7: Affordable and Clean Energy	☐ GOAL 16: Peace, Justice and Strong Institutions
☐ GOAL 8: Decent Work and Economic Growth	☐ GOAL 17: Partnerships for the Goals
☒ GOAL 9: Industry, Innovation and Infrastructure	

TARGET DATE(S)	FOR FIRST CD: 2023-10-01	FOR IS: 2025-05-01	
ESTIMATED NUMBER OF MEETINGS:	FREQUENCY OF MEETINGS:	DATE OF FIRST MEETING:	PLACE OF FIRST MEETING:
25	12 per year	2023-01-01	Virtual (Precise meeting date TBD)

RELEVANT DOCUMENTS TO BE CONSIDERED:

IEA Task 43, IEC 61400-12

RELATIONSHIP OF PROJECT TO ACTIVITIES OF OTHER INTERNATIONAL BODIES:

IEA; IECRE - Potential overlap with JWF4 (model validation effort)

LIAISONS WITH INTERNATIONAL BODIES:	NEED FOR ISO COORDINATION:

DOCUMENT MATURITY:

☐ A DRAFT IS ATTACHED FOR COMMENT* ☒ AN OUTLINE IS ATTACHED

* Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

CONCERNS KNOWN PATENTED ITEMS (SEE ISO/IEC DIRECTIVES, PART 1) ☐ YES ☒ NO

PATENT DESCRIPTION:

WE NOMINATE A PROJECT LEADER IN ACCORDANCE WITH ISO/IEC DIRECTIVES, PART 1

LAST NAME:	FIRST NAME:	E-MAIL:	COUNTRY:
Moroz	Emil	emil.moroz@ul.com	United States of America

COMMENTS AND RECOMMENDATIONS FROM TC/SC OFFICERS:

WORK ALLOCATION:

☒ NEW PROJECT TEAM ☐ NEW WORKING GROUP ☐ EXISTING WORKING GROUP:

IF APPROVED, THE NEXT STAGE SHOULD BE:

☒ CD ☐ CDV

REMARKS FROM TC/SC OFFICERS:

The proposal was briefly announced and presented at the online TC 88 plenary meeting on 9th, 10th and 11th, May 2022. TC 88 welcomed the proposal.

APPROVAL CRITERIA

- Approval of the new work item proposal by a 2/3 majority of the P-members voting;
- At least 4 P-members in the case of a committee with 16 or fewer P-members, or at least 5 P-members in the case of committees with more than 17 P-members, have nominated or confirmed the name of an expert and approved the new work item proposal.

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2
3 **Outline of STANDARD FILE FORMAT FOR SHARING POWER CURVE INFORMATION**
4
5 Table of contents

6 The following table of contents is planned for the document “STANDARD FILE FORMAT FOR SHARING
7 POWER CURVE INFORMATION”:

17 The content of the proposed standard is described in the following paragraphs.
18
19 General

20 Minimum standards of specification reporting and file formats for sharing of numerical or tabular data
21 will be developed, with commonality of terminology file formats used by providers of such data.

22 Wind turbine operational specifications are crucial to the accurate and timely modelling of energy
23 production and turbine suitability assessments.

24 A common baseline for providing information allows for efficient downstream use, reduction in errors
25 and minimization of ambiguity in modelling assumptions.

26 Reported Operational Specifications

27 This section details the information required for completion of energy or suitability analysis. It also
28 specifies naming conventions to reduce complexity.

29 • Turbine Power, Thrust and RPM Curve
30 • Turbine physical dimensions ex. hub height, rotor diameter, and rotor tilt angle
31 • Turbine name, version number, and issue date
32 • Turbine Operational Envelopes, shut down and derating according to high wind, temperature and
33 elevation or air density.
34 • Turbine Operational Modes, flexible ratings according to power or noise restrictions
35 • Turbine Design Specifications (including design basis), according to IEC 61400-1
36 • Turbine Noise Emission