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Sustainability

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# Exposure Draft

IFRS<sup>®</sup> Sustainability Disclosure Standard

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## **[Draft] IFRS S2 Climate-related Disclosures Appendix B Industry-based disclosure requirements**

Volume B45—Wind Technology & Project Developers

Comments to be received by 29 July 2022



This industry from Appendix B Industry-based disclosure requirements accompanies the Exposure Draft ED/2022/S2 *Climate-related Disclosures* (published March 2022; see separate booklet). It is published by the International Sustainability Standards Board (ISSB) for comment only. Comments need to be received by 29 July 2022 and should be submitted by email to [commentletters@ifrs.org](mailto:commentletters@ifrs.org) or online at <https://www.ifrs.org/projects/open-for-comment/>.

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## Introduction

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*This volume is part of Appendix B of [draft] IFRS S2 Climate-related Disclosures and is an integral part of that [draft] Standard. It has the same authority as the other parts of that [draft] Standard.*

This volume sets out the requirements for identifying, measuring and disclosing information related to an entity's significant climate-related risks and opportunities that are associated with specific business models, economic activities and other common features that characterise participation in this industry.

The industry-based disclosure requirements are derived from SASB Standards (see paragraphs B10–B12 of [Draft] IFRS S2 *Climate-related Disclosures*). Amendments to the SASB Standards, described in paragraph B11, are marked up for ease of reference. New text is underlined and deleted text is struck through. The metric codes used in SASB Standards have also been included, where applicable, for ease of reference. For additional context regarding the industry-based disclosure requirements contained in this volume, including structure and terminology, application and illustrative examples, refer to Appendix B paragraphs B3–B17.

## Wind Technology & Project Developers

### Industry Description

The Wind Technology & Project Developers industry comprises companies that manufacture wind turbines, blades, towers, and other components of wind power systems. Companies that develop, build, and manage wind energy projects are also included within the scope of this industry. Manufacturers may also offer post-sale maintenance and support services. Turbines can be installed onshore or offshore, which can cause differences in wind-generating capacity and create challenges in project development for each type of installation. Most major wind technology companies operate globally.

### Sustainability Disclosure Topics & Metrics

**Table 1. Sustainability Disclosure Topics & Metrics**

TOPIC	METRIC	CATEGORY	UNIT OF MEASURE	CODE
Materials Efficiency	Top five materials consumed, by weight	Quantitative	Metric tons (t)	RR-WT-440b.1
	Average top head mass per turbine capacity, by wind turbine class	Quantitative	Metric tons per megawatts (t/MW)	RR-WT-440b.2
	Description of approach to optimize materials efficiency of wind turbine design	Discussion and Analysis	n/a	RR-WT-440b.3

**Table 2. Activity Metrics**

ACTIVITY METRIC	CATEGORY	UNIT OF MEASURE	CODE
Number of delivered wind turbines, by wind turbine class <sup>78</sup>	Quantitative	Number	RR-WT-000.A
Aggregate capacity of delivered wind turbines, by wind turbine class <sup>79</sup>	Quantitative	Megawatts (MW)	RR-WT-000.B
Amount of turbine backlog <sup>80</sup>	Quantitative	Reporting currency	RR-WT-000.C
Aggregate capacity of turbine backlog <sup>81</sup>	Quantitative	Megawatts (MW)	RR-WT-000.D

<sup>78</sup> Note to **RR-WT-000.A** – Wind turbine class is defined by the International Electrotechnical Commission's IEC 61400-1, Edition 3.0—Design requirements. Wind turbine class shall be determined by the rating of the turbine.

<sup>79</sup> Note to **RR-WT-000.B** – Wind turbine class is defined by the International Electrotechnical Commission's IEC 61400-1, Edition 3.0—Design requirements. Wind turbine class shall be determined by the rating of the turbine.

<sup>80</sup> Note to **RR-WT-000.C** – Turbine backlog is defined by the entity, consistent with its existing public disclosure of order backlog. Turbine backlog excludes any backlog amounts resulting from operating and maintenance agreements or other service agreements.

<sup>81</sup> Note to **RR-WT-000.D** – Turbine backlog is defined by the entity, consistent with its existing public disclosure of order backlog. Turbine backlog excludes any backlog amounts resulting from operating and maintenance agreements or other service agreements.

## Materials Efficiency

### Topic Summary

The Wind Technology & Project Developers industry's long-term success depends on its ability to produce energy at a comparatively lower cost than other energy sources. Steel and other materials purchases are one of the largest cost components of turbines and inputs such as steel have exhibited price volatility in the past. In recent years, wind turbines have grown in size, in terms of both the tower height and the swept area of the rotor, to improve energy output and increase the potential for wind energy production in more areas. To achieve this expansion cost-effectively, companies can employ innovative methods to increase turbine output while using materials more efficiently. This could influence companies' competitiveness and market share, costs of production, and operational risks related to the supply and price volatility of raw materials, as well as the ability of the industry to scale.

### Metrics

#### *RR-WT-440b.1. Top five materials consumed, by weight*

- 1 For each of the following wind turbine classes, the entity shall disclose the weight, in metric tons, of the five materials consumed in the greatest amounts, by weight, in delivered wind turbines during the reporting period.
- 2 The scope of disclosure includes materials weights in the final delivered turbine, including the nacelle, blades, and tower, and excludes the weight of materials consumed in production (e.g., waste), freight, storage, and installation (e.g., foundation).
- 3 Materials may include, but are not limited to, aluminum, carbon fiber, copper, fiberglass, iron, or steel.
- 4 The entity may disclose the weight of the five materials consumed in the greatest amounts by wind turbine class.
  - 4.1 Wind turbine classes are defined by the International Electrotechnical Commission's IEC 61400-1, Edition 3.0—Design requirements:
    - 4.1.1 IEC Wind Turbine Class I
    - 4.1.2 IEC Wind Turbine Class II
    - 4.1.3 IEC Wind Turbine Class III
    - 4.1.4 IEC Wind Turbine Class IV
    - 4.1.5 IEC Wind Turbine Class S
    - 4.1.6 Turbulence characteristics
    - 4.1.7 Mixed class (e.g., IEC Wind Turbine Class I / II)
    - 4.1.8 Onshore
    - 4.1.9 Offshore
- 5 The entity may disclose additional materials weights that may represent significant materials costs, supply chain risks, or exposure to pricing volatility.

*RR-WT-440b.2. Average top head mass per turbine capacity, by wind turbine class*

- 1 For each of the following wind turbine classes, the entity shall disclose the average top head mass per turbine capacity of turbines delivered during the reporting period, weighted by turbine deliveries per wind turbine class.
  - 1.1 Wind turbine classes are defined by the International Electrotechnical Commission's IEC 61400-1, Edition 3.0—Design requirements:
    - 1.1.1 IEC Wind Turbine Class I
    - 1.1.2 IEC Wind Turbine Class II
    - 1.1.3 IEC Wind Turbine Class III
    - 1.1.4 IEC Wind Turbine Class IV
    - 1.1.5 IEC Wind Turbine Class S
- 2 Wind turbine class shall be determined by the rating of the turbine.
- 3 Average top head mass per turbine capacity shall be calculated as the mass of the top head in metric tons divided by turbine capacity in megawatts (MW).
  - 3.1 The top head shall include the turbine nacelle and the turbine rotor.
  - 3.2 The top head shall exclude the blades.
  - 3.3 Turbine capacity is the rated turbine capacity, defined as the maximum output (generation) of a wind turbine, in megawatts (MW), also referred to as "nameplate capacity."
- 4 The entity may disclose performance in additional wind turbine classes, including the following:
  - 4.1 Turbulence characteristics
  - 4.2 Mixed class (e.g., IEC Wind Turbine Class I / II)
  - 4.3 Onshore
  - 4.4 Offshore

*RR-WT-440b.3. Description of approach to optimize materials efficiency of wind turbine design*

- 1 The entity shall describe its approach to improving the materials efficiency of wind turbines, including design considerations and materials selection to optimize:
  - 1.1 Amount of materials consumed
  - 1.2 Capacity and capacity factor by materials consumed
  - 1.3 Lifespan
- 2 The scope of disclosure shall include materials selection and modifications to wind turbine design as well as operational control software (e.g., SCADA systems) that may increase the materials efficiency of wind turbines.

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- 2.1 Materials selection includes, but is not limited to, priorities in materials selection, emphasis on materials innovation and development, materials risk assessments, and objectives around materials consumption.
- 2.2 Modifications to wind turbine design include, but are not limited to, innovation in design to reduce materials consumption through reduced turbine weights or tower weights, innovation in design to increase turbine capacity or capacity factor relative to materials consumption, strategies to reduce waste created in turbine manufacturing, and design to reduce materials consumed in installation of wind turbines (e.g., foundation).