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# Sustainability-Linked Bond Progress Report 2023



**Wind.** It means the world to us.™

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**Vestas**®



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# 1. Introduction

Sustainability-Linked Financing is a key enabler of our mission to integrate “Sustainability in everything we do” and helps ensure that we can meet financial and sustainability targets.

In 2022, we became the first Danish company to issue Sustainability-Linked Bonds, joining an exclusive group of companies that have utilised the new financial instrument. Announced in March 2022, the two EUR 500m

Sustainability-Linked Bonds, with a duration of 7 and 12 years, enabled further investments into an industry-leading sustainability performance, as the bonds’ fixed rate is directly linked to key sustainability KPIs.

During 2023, we issued two additional EUR 500m Sustainability-Linked Bonds in March and November, respectively.

Our Sustainability-Linked Bond Framework was developed in alignment with the Sustainability-Linked Bond Principles (SLBP) established by the International Capital Markets Association (ICMA) in June 2020.

This Sustainability-Linked Bond Progress report is prepared in accordance with Condition 14 of the terms and conditions of the Sustainability-Linked Bonds. It aims to provide information about our level of performance achieved with respect to three Sustainability Performance Targets (SPTs) attached to the bonds on an annual basis. These SPTs are supported by three KPIs focusing on reduction of scope 1 and 2 GHG emissions, scope 3 GHG emissions per MWh generated, and material efficiency.

Overall, the report aims to provide the basis for evaluating the impact on the bond characteristics and contains all relevant information to assess if a Step up Event of financial characteristics that would impact the bond has occurred.

Vestas technology is a key enabler of the energy transition, and we remain unwavering in our commitment to sustainability and the global energy transition.

While we are proud of the impact we have made so far, we remain aware of the challenges ahead. By linking our sustainability performance with interest rate margins, we reinforce our commitment to realising our ambitious sustainability targets.

# 1.1

## Selection of Key Performance Indicators (KPIs)

The KPIs that have been included for the purpose of these Sustainability-Linked Bonds have been chosen because they reflect our key environmental challenges. By focusing our efforts on reducing our environmental footprint and developing a circular economy for all used materials, ambitious targets (the SPTs) can be set and strategies on achieving the targets can be formulated and executed in line with our sustainability strategy.

Thus, we have selected the following three KPIs for our Sustainability-Linked Bond Framework:



### KPI 1 defines our scope 1 and 2 GHG absolute emissions

This includes CO<sub>2</sub> and other GHG emissions as defined in the GHG Protocol. Scope 1 are direct GHG emissions from Vestas' owned or controlled sources. Scope 2 are indirect GHG emissions from consumption of purchased electricity and heat used in our own operations. Vestas' definition is aligned with the Greenhouse Gas Protocol operational control approach, and a market-based approach is used to calculate scope 2 emissions.

### KPI 2 defines our scope 3 GHG emissions per MWh generated

This includes CO<sub>2</sub> and other GHG emissions as defined in the GHG Protocol with specific guidance from the "Corporate Value Chain (scope 3) Accounting and Reporting Standard". All the relevant categories are calculated, and 70 percent of the impact is included in the KPI 2 calculation as the numerator<sup>1</sup>. The denominator is the amount of estimated lifetime MWh expected to be generated by the wind turbines produced and shipped in the financial year. This is based on the number and type of turbines, turbine capacity factor, and expected lifetime.

### KPI 3 defines our material efficiency in own operations

This includes the total tonnes of non-recycled waste from Vestas' own operations per MW wind turbines produced and shipped in the year. Non-recycled waste includes waste that is incinerated or landfilled.

<sup>1</sup>Fulfilling criterion C 18 of the SBTi recommendations TWG-INF-002 (Version 4.2).

# 1.2

## Sustainability Performance Targets (SPTs)



### SPT 1

Reduce CO<sub>2</sub>e emissions in own operations 100% by 2030, without using carbon offsets from a 2019 baseline.

### SPT 2

Reduce CO<sub>2</sub>e emissions in the supply chain by 45% per MWh generated by 2030 from a 2019 baseline.

### SPT 3

Reduce material efficiency ratio by 90% per MW by 2030 from a 2021 baseline.

# 1.3

## Progress on SPTs

In our sustainability strategy, we have committed to reduce carbon emissions in our own operations and supply chain, create zero-waste wind turbines, promote social responsibility, and lead the transition to a world powered by renewable energy. In 2023, we concentrated on making progress within our own operations and building partnerships to reach the SPTs. Some of our initiatives have already delivered results over the year; others are designed to enable our long-term success. But regardless of the time horizon and short-term impact, all are essential to meet our long-term commitments and scale up sustainability.

| KPI  | SPTs  | Base year   | 2019  | 2020  | 2021 | 2022 | 2023        | Performance against baseline (%) |
|--|---|-------------|-------|-------|------|------|-------------|----------------------------------|
| <b>KPI 1</b><br>Scope 1 & 2 GHG absolute emissions (1,000 tonnes)  | Reduce CO <sub>2</sub> e emissions in own operations 100% by 2030, without using carbon offsets from a 2019 baseline                | <b>2019</b> | 114*  | 97*   | 102  | 100  | <b>109</b>  | 4                                |
| <b>KPI 2</b><br>Scope 3 GHG emissions per MWh generated (kg per MWh generated)                                     | Reduce CO <sub>2</sub> e emissions from the supply chain by 45 percent per MWh delivered to the market by 2030 from a 2019 baseline | <b>2019</b> | 6.82* | 6.63* | 6.65 | 6.46 | <b>6.30</b> | 8                                |
| <b>KPI 3</b><br>Material efficiency in own operations (tonnes of waste excl. recycled per MW produced and shipped) | Reduce material efficiency ratio by 90% per MW by 2030 from a 2021 baseline   | <b>2021</b> | -     | -     | 2.0  | 1.6  | <b>1.2</b>  | 40                               |

\*2019 and 2020 data has been adjusted in the Annual Report 2021 as part of the 2019 baseline update and according to our policy for baseline adjustments for carbon emissions. The figures include on- and off-shore.

# 1.4

## Measures to improve performance

Our decarbonisation journey for our own operations and supply chain continues as planned, and we have continued to improve our material efficiency and recycling rates. More information about these topics and many others can be found in the Sustainability Report 2023 on [www.vestas.com](http://www.vestas.com)

| KPI   | Ambitiousness of SPTs  | Measures to achieve SPTs  | Benchmarking of SPT (%)  |
|-------|--|---|--|
| KPI 1 | Reduce CO <sub>2</sub> e emissions in own operations 100% by 2030, without using carbon offsets from a 2019 baseline | <p><b>Continued to decarbonise our service vehicles and vessels</b><br/>Since 2020, we have sourced 100 percent renewable electricity across our operations globally.</p> <p><b>In Offshore, we have successfully piloted the worlds' first dual-fuelled methanol and hydrogen- powered service vessels and introduced sustainable fuelled vehicles and vessels to our service fleet</b><br/>In July 2022, we pioneered the first hydrogen-powered vessel in the wind industry. During 2023 we added 465 sustainability fuelled vehicles to our feet, including electric vehicles (EVs) and biofuel vehicles that meet sustainability criteria.</p> <p>88 percent of benefit cars in-use or on order are now (PH)EVs. However, in 2023, the scope 1 and 2 GHG emissions increased by 9 percent compared to 2022. This is primarily due to our rapidly growing offshore construction and service business.</p> <p><b>Continued to build-out our electric charging infrastructure</b><br/>To support the scale-up of EVs, we installed charging infrastructure across our major locations.</p> <p><b>Increased our use of renewable energy for heating in factories</b><br/>In 2023, we continued mapping our energy consumption and initiated several efficiency projects. We are transitioning the industrial heating system at our Taranto blades factory from natural gas to biomass, the 2nd factory to be transitioned since 2020.</p>  | <p><b>4%</b><br/>Reduction in GHG emissions in Scope 1 and 2 in 2023 from the 2019 baseline.</p>         |
| KPI 2 | Reduce CO <sub>2</sub> e emissions in the supply chain by 45% per MWh generated by 2030 from a 2019 baseline         | <p><b>Progressing on supply-chain engagement</b><br/>Since 2022, we have actively worked with all our key suppliers in three hot-spot areas to reduce their emissions in line with our targets. These areas are: towers &amp; steel, blades, and transport. Cumulatively, these supplier categories account for approximately 70 percent of our scope 3 emissions.</p> <p>We also secured commitments from 77 of our key suppliers to track and report on CO<sub>2</sub>e emissions and set aggressive reduction targets for themselves and their own suppliers.</p> <p><b>Progress on supply-chain sustainability data and delivery</b><br/>We have invested in a sustainability data platform that uses digital twin technology to calculate real-time climate footprints and run scenarios that support monitoring, forecasting, optimisation, and target achievement.</p> <p>By the end of 2023, we successfully onboarded 104 suppliers, all of whom actively delivered emissions data through the platform.</p> <p><b>Emissions-reduced steel</b><br/>During 2022, we joined the World Economic Forum's First Movers Coalition, committing to procure at least 10 percent near-zero emission steel by 2030. Through this commitment we aim to accelerate the decarbonisation of steel by:</p> <ul style="list-style-type: none"> <li>- Incentivising the production of emissions-reduced steel in partnership with our suppliers</li> <li>- Partnering with our customers to jointly secure emissions- reduced steel volumes</li> <li>- Investing in the development of alternative materials, such as wooden towers, to manufacture our wind turbines</li> </ul> <p>In 2023, we signed our first multi-year off-take agreement for low-emission heavy plates used in wind turbine towers. This low-emission steel enables a CO<sub>2</sub>e reduction of 66% compared to conventional steel.</p> <p><b>Wooden-based tower</b><br/>We continued to support Modvion™'s scale up strategy for wooden towers, enabling a significant reduction in carbon emissions. Our goal is to integrate laminated veneer lumber (LVL) towers into our design process and manufacturing operations, and together with Modvion we have initiated dialogues with selected customers.</p> | <p><b>8%</b><br/>Reduction in supply chain CO<sub>2</sub>e intensity in 2023 from the 2019 baseline.</p> |

**KPI 3** Reduce material efficiency ratio by 90% per MW by 2030 from a 2021 baseline

The material efficiency rate is supporting our overarching ambition to produce zero waste turbines by 2040 and is a critical parameter in our industry-leading Circularity Roadmap

**Optimising our production processes**

In 2023, we continued to optimise the use of carbon, glass fabric, and chemicals in our blade manufacturing process.

In 2023, we identified and utilised new local recycling streams for production waste at our factories. We also established annual recycling targets for each factory specifically. These initiatives helped result in an increase in recycling rate from 55% in 2022 to 68% in 2023.

In 2023, our material efficiency improved 25 percent compared to previous year. To continue making progress on the target, reducing waste and scaling up recycling streams from our blade manufacturing is critical.

**40%**  
Reduction in waste generation in our own operations (to avoid landfill and incineration) in 2023 from the 2021 baseline.





## 2. Bond characteristics

The financial characteristics of any bond issued under this Framework will be specified in its related bond documentation. For any bond issued, there will only be one possible Step Up Date which would impact the financial characteristics of the bond.

The KPIs are assigned the following relative weight of the aggregate coupon Step Up Event, as specified in the security documentation of each respective Sustainability-Linked Bond issued under our Sustainability-Linked Bond Framework.

Depending on the KPI performance in relation to the SPTs, a Step Up Event may occur which will result in an increase in coupon, applying to the relevant bond from the first day of the next interest period following immediately after the Step Up Event until maturity. An increase in coupon shall be triggered if:

- a KPI has not achieved the SPT on the Reference Year, or
- the reporting does not meet the requirements as set out in the terms and conditions of the relevant bond documentation, or
- the verification of the KPI performance has not been provided and made public as per the terms and conditions of the relevant bond documentation.

No Step Up Event has occurred on any outstanding bonds based on 2023 results.



# 3. Accounting policies



## 3.1

### KPI base year rationale and policy for baseline adjustment

The rationale for a 2019 base year of scope 1 & 2 and 3 CO<sub>2</sub>e emissions is connected to the validation by the Science Based Targets initiative (SBTi) in August 2020. The rationale behind the material efficiency KPI was for the launch of Vestas' Circularity Roadmap in 2021.

Recalculations of the base year shall be made in accordance with our policy for baseline adjustments for CO<sub>2</sub>e emissions, which complies with SBTi criteria. The levels of CO<sub>2</sub>e emissions [base year 2019] and material efficiency [base year 2021] during the base years for the KPIs will be re-calculated to reflect any significant changes in Vestas' structure (e.g., acquisition, divestiture, mergers), or technical changes (for example updated IT system, changes required for obtaining a higher level of assurance). Base year emissions must be recalculated when changes occur that alter base year emissions by at least five percent. For example, in 2021, the CO<sub>2</sub>e emissions baseline was updated due to mergers and divestments.

Any recalculations of levels of CO<sub>2</sub>e emissions or material efficiency during the base years for the KPIs must be reported in this SLB Progress Report and verified by an independent, qualified external reviewer, as outlined in the verification section of this Framework.

# 3.2 GHG Emissions

GHG emissions covered by the SPTs cover Vestas' scope 1 and 2 and more than two-thirds of our scope 3 GHG emissions. GHG emissions are measured using the carbon dioxide equivalent (CO<sub>2</sub>e) to include relevant GHGs according to Greenhouse gas accounting standards issued by the Greenhouse Gas Protocol.

A distinction is made between scope 1, 2, and 3 emissions, as defined by the Greenhouse Gas Protocol. The improvement from the 2019 baseline is calculated as a percentage and rounded to the nearest whole number, with 0.5 rounded upwards. Vestas has reported on GHG emissions in the past 15 years in our verified Annual Report. Scope 3 CO<sub>2</sub>e emissions have been reported from 2019 onwards in Vestas' Annual Report.

## Direct emissions of CO<sub>2</sub>e (scope 1) (1,000 t)

Scope 1: Direct emissions of CO<sub>2</sub>e are calculated based on determined amounts of fuel for own transport and the direct consumption of fossil-based fuels (e.g., oil and gas), with the usage of standard factors published by the UK Department for Business, Energy & Industrial Strategy (BEIS) (2023).

## Indirect emissions of CO<sub>2</sub>e (scope 2) (1,000 t)

Scope 2: Covers emissions released in connection with the consumption of purchased electricity and heat. Indirect market-based emissions of CO<sub>2</sub>e from consumption of electricity are calculated using national grid emission factors published by the International Energy Agency (2023). Indirect CO<sub>2</sub>e emissions from district heating are calculated using BEIS (2023) emission factors.

## Indirect emissions of CO<sub>2</sub>e from the supply chain (scope 3) (million t)

Scope 3: Indirect emissions of CO<sub>2</sub>e from the value chain are reported based on the Greenhouse Gas Protocol. Scope 3 categories 8, 9, 10, 11, 13 and 15 are immaterial for Vestas, and category 14 is not applicable.

Wind plant: The largest part of the emissions is in category 1 'Purchased goods and services.' Emissions from materials going into products are calculated based on LCAs following ISO 14040 & 14044, publicly available at vestas.com. The CO<sub>2</sub>e emissions of different materials and component types are based on the total quantity of annual produced and shipped turbines and the material composition of the individual turbine types as stated in the LCA reports. Based on this, the global material mass balance is calculated for all materials consumed during the production, and CO<sub>2</sub>e emissions are calculated using GaBi (2023) emission factors per material group for raw materials used in production and manufacturing processes. The actual steel mass for all produced and shipped turbines is used to calculate global CO<sub>2</sub>e emissions for the raw material production of steel and for foundation materials. The CO<sub>2</sub>e emissions from concrete and steel used in foundations is based on the same LCA reports as the remaining material groups

Construction: The CO<sub>2</sub>e emissions emitted during the construction of a wind farm is estimated based on the quantity of diesel-fuel consumed per wind turbine produced and shipped in markets in which Vestas is responsible for installing the wind turbine. LCA studies for the diesel combustion per turbine installation and respective BEIS emission factors (2023) are applied.

Service: CO<sub>2</sub>e emissions from service operations are estimated using the quantity of spare parts that are replaced and repaired in the reporting year, as well as expected repair and replacement levels. GaBi (2023) emission factors for the raw materials are applied to estimate global CO<sub>2</sub>e emissions

Capital goods: (category 1) Other purchased goods and services and capital goods (category 2) and waste generated in operations (category 5) are estimated based on spend data using BEIS factors (2023) for indirect emissions from the supply chain (2011). Fuel- and energy-related activities are calculated using BEIS factors for emissions related to the production of fuel, NREL factors (2019) for renewable energy, and IEA factors (2023) for grid electricity.

Transportation: Emissions from upstream transportation (category 4) are based on supplier information and estimated based on the LCA reports for weight and distance of components transported and BEIS (2023) carbon emissions factors. Business travel (category 6) emissions for air flights are activity-based data provided by the travel agency used for all bookings. Employee commuting (category 7) is reported on daily commute by car, which is estimated based on the average number of FTEs and a selected sample of commuting distance. It applies standard factors published by the BEIS (2023)

End-of-life treatment: of sold products (category 12) is estimated based on material composition of all produced and shipped wind turbines in the reporting year. For materials that are not recyclable, an average GaBi (2023) emission factor for inert landfill is applied.

## Indirect emissions of CO<sub>2</sub>e from the supply chain (scope 3) (kg per MWh generated)

The amount of MWh generated is based on the number and type of wind turbines produced and shipped in the financial year, wind turbine capacity factor, and site-specific lifetime. Vestas applies an expected lifetime based on site-specific agreed lifetimes where this differs from the standard design lifetime.

In relation to the target to reduce carbon emissions in the value chain, indirect emissions of CO<sub>2</sub>e from the value chain per MWh generated include 70 percent of the scope 3 emissions<sup>2</sup>.

<sup>2</sup>Fulfilling criterion C 6 of the SBTi criteria and recommendations for near-term targets (Version 5.1)

## 3.3

### Material efficiency

As part of our Circularity Roadmap, we reported for the first time on materiality efficiency in the 2021 Annual Report.

#### Material efficiency (tonnes of waste excl. recycled per MW produced and shipped)

Material efficiency is defined as the total tonnes of non-recycled waste materials from Vestas' own manufacturing per MW capacity produced and shipped during the reporting period. Non-recycled waste materials include those that are incinerated or landfilled.

## 3.4

### Independent Limited Assurance scope

The scope of verification is the actual performance of the Vestas Group versus the baseline as a percentage.

The verification will form the basis for evaluating whether a Step Up Event has occurred referring back to Condition 4(c) of the terms and conditions of the Sustainability-Linked Bonds.



# 4. Independent Limited Assurance Report

## Independent limited assurance report on the performance against baseline in Vestas Wind Systems A/S' Sustainability-Linked Bond Progress Report 2023

### To the Board of Directors of Vestas Wind Systems A/S

Vestas Wind Systems A/S ("Vestas") engaged us to provide limited assurance on the performance against baseline of KPIs in Vestas' Sustainability-Linked Bond Progress Report for the year ended 31 December 2023 ("SLB Progress Report 2023") as described in the section "What we are assuring".

### Our conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing came to our attention that causes us to not believe that the performance against baseline on page 6 of Vestas' SLB Progress Report 2023 is prepared, in all material respects, in accordance with the accounting policies developed by Vestas as stated on pages 10-12 of Vestas' SLB Progress Report 2023 ("accounting policies").

This conclusion is to be read in the context of what we state in the remainder of our report.

### What we are assuring

The scope of our work was limited to assurance on the performance against baseline on page 6 of Vestas' SLB Progress Report 2023 for the following KPIs:

- Scope 1 & 2 GHG absolute emissions (1,000 tonnes)
- Scope 3 GHG emissions per MWh generated (kg per MWh generated)
- Material efficiency in own operations (tonnes waste excl. recycled per MW produced and shipped)

We express limited assurance in our conclusion.

### Professional standards applied and level of assurance

We performed a limited assurance engagement in accordance with International Standard on Assurance Engagements 3000 (Revised) 'Assurance Engagements other than Audits and Reviews of Historical Financial Information' and, in respect of the greenhouse gas emissions, in accordance with International Standard on Assurance Engagements 3410 'Assurance Engagements on Greenhouse Gas Statements'. The quantification of greenhouse gas emissions is subject to inherent uncertainty because of incomplete scientific knowledge used to determine the emissions factors and the values needed to combine emissions of different gases.

A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks; consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

### Our independence and quality control

We have complied with the independence requirements and other ethical requirements in the International Ethics Standards Board for Accountants' International Code of Ethics for Professional Accountants (IESBA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour, and ethical requirements applicable in Denmark.

Our firm applies International Standard on Quality Management 1, ISQM 1, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Our work was carried out by an independent multidisciplinary team with experience in sustainability reporting and assurance.

## Understanding reporting and measurement methodologies

The performance against baseline on page 6 needs to be read and understood together with the accounting policies. The accounting policies used for preparation of the SLB Progress Report 2023 are the applied accounting policies developed by Vestas, which Management is solely responsible for selecting and applying.

The absence of a significant body of established practice on which to draw to evaluate and measure non-financial information allows for different, but acceptable, measurement techniques and can affect comparability between entities and over time.

## Work performed

We are required to plan and perform our work in order to consider the risk of material misstatement in the performance against baseline for the KPIs in Vestas' SLB Progress Report 2023. In doing so, and based on our professional judgement, we:

- Evaluated the appropriateness of the accounting policies used, their consistent application in the underlying KPIs to measure performance against baseline;
- Made inquiries and conducted interviews with Vestas' Management with responsibility for management and reporting of the performance relative to the baseline to assess reporting and consolidation process, use of company-wide systems and controls performed;
- Performed limited substantive testing on a sample basis to underlying documentation and evaluated the appropriateness of quantification methods and compliance with the accounting policies for preparing the performance relative to the baseline at corporate head office and in relation to selected Vestas' reporting sites;
- Performed analytical review and trend explanation of the performance of the underlying KPIs to measure the performance against baseline;
- Performed calculation of the percentage reduction against baseline; and
- Evaluated the evidence obtained.

### Management's responsibilities

Management of Vestas is responsible for:

- Designing, implementing and maintaining internal control over information relevant to the preparation of the performance of the

underlying KPIs to measure the performance against baseline that are free from material misstatement, whether due to fraud or error;

- Establishing objective accounting policies for preparing the performance of the underlying KPIs to measure the performance against baseline on page 6;
- Measuring and reporting the performance against baseline on page 6 based on the accounting policies; and
- The content of the underlying KPIs, for the period 1 January to 31 December 2023, to measure performance against baseline.

### Our Responsibility

We are responsible for:

- Planning and performing the engagement to obtain limited assurance about whether the performance against baseline for the KPIs is prepared, in all material respects, in accordance with the relevant accounting policies;
- Forming an independent conclusion, based on the procedures performed and the evidence obtained; and
- Reporting our conclusion to the stakeholders of Vestas.

Hellerup, 20 March 2024

[PricewaterhouseCoopers](#)

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