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FA LK – resolution for
Technical guideline
TG 2 Rev. 17

Berlin, 14.11.2018

FGW Technical committee for power curve (FA LK) – resolution of 14th of November 2018:

The Technical committee for power curve votes for an alteration of formula (2-2) and its explanation on page 3 of revision 17 of the Technical Guideline 2 (TG 2). The formula defines the wind shear correction factor which is needed for the determination of the reference yield based on the rotor equivalant wind speed. The alteration is needed to convert the different measurement heights of the power curve measurement to the correct heights that are relevant for the hub height at which the determination of the reference yield should be applied.

The alteration is valid with immediate effect.

Following the alteration is presented with and without visible track changes.

On behalf of FGW TC

Bente Klose

TG 2 “Determination of Power Curves and Standarised Energy Yields”, chapter 2, page 3:

[...]

Further aspects to be considered when determining the reference yield in accordance with TG 5 [3]:

10. If the power curve was measured based on the rotor equivalent wind speed and a reference yield (“Referenzertrag”) for the determination of the site quality (“Standortgüte”) according to § 36h EEG 2017 [4] is to be specified, the bin-averaged power curve for calculating the reference yield in accordance with Annex P in [1] must be normalized to the wind speed in hub height with a reference wind speed profile according to the Hellmann profile with a wind shear exponent of 0.25 and a wind veer of zero in the entire height range of the WT rotor. For that the equation P.5 in [1] must be applied to the bin-averaged rotor equivalent wind speed v_{eq} with the following wind shear correction factor for the reference wind speed profile:

$$f_{r,reference} = \left(\sum_{i=1}^{n_h} \left(\frac{\frac{z_{i+1} + z_i}{2} \cancel{z_i} + H_R - H_M}{H_R \cancel{H}} \right)^{3*0,25} \frac{A_i}{A} \right)^{\frac{1}{3}} \qquad \textbf{(2-1)}$$

with n_h, z_i, ~~H,~~ A_i and A according to Chapter 9.1.3.2 in [1]. H_M ~~H~~ stands for the hub height at which the power curve was measured ~~the reference yield refers to~~ and H_R stands for the hub height the reference yield refers to. The expression $(z_{i+1} + z_i)/2$ describes the height of the i^th wind speed measurement above ground level.

If the power curve was measured based on the hub height wind speed, it shall be used directly for the calculation of the reference yield. The same applies if a reference yield for the determination of the term of the increased initial tariff according to § 46 EEG 2017 [4] should be specified.

[...]

TG 2 “Determination of Power Curves and Standarised Energy Yields”, chapter 2, page 3:

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$$f_{r,reference} = \left(\sum_{i=1}^{n_h} \left(\frac{\frac{z_{i+1} + z_i}{2} + H_R - H_M}{H_R} \right)^{3*0,25} \frac{A_i}{A} \right)^{\frac{1}{3}} \qquad \textbf{(2-2)}$$

with n_h, z_i, A_i and A according to Chapter 9.1.3.2 in [1]. H_M stands for the hub height at which the power curve was measured and H_R stands for the hub height the reference yield refers to. The expression $(z_{i+1} + z_i)/2$ describes the height of the i^th^ wind speed measurement above ground level.

If the power curve was measured based on the hub height wind speed, it shall be used directly for the calculation of the reference yield. The same applies if a reference yield for the determination of the term of the increased initial tariff according to § 46 EEG 2017 [4] should be specified.

[...]