Technical Appendix 10.2: Wind speed calculations for hub height

Supplementary Guidance Note 4: Wind Shear Equations

a) To obtain wind speed at hub height where measurement are available at two different heights the wind shear exponent 'm' based on known data (v_1, v_2, h_1, h_2) for each 10 minute data period can be calculated according to Equation 1.

Equation 1 $m = \ln(v_2/ v_1) / \ln(h_2/ h_1)$

b) Standardising from hub height to 10m

Equation 2 $v_{10} = v_{hh} * (\ln(10/0.05)/\ln(hh/0.05))$

v_{10} = Standardised 10m wind speed v_{hh} = Hub height wind speed hh = Hub height

0.05 = Standard ground roughness length which remains constant