<table>
<thead>
<tr>
<th>Symbol</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFD</td>
<td>Analytical Fluid Dynamics</td>
</tr>
<tr>
<td>AD</td>
<td>After Death</td>
</tr>
<tr>
<td>BC</td>
<td>Before Christ</td>
</tr>
<tr>
<td>BEM</td>
<td>Blade-Element-Momentum theory</td>
</tr>
<tr>
<td>CAD</td>
<td>Computer Aided Design</td>
</tr>
<tr>
<td>CSCF</td>
<td>Constant Speed Constant Frequency</td>
</tr>
<tr>
<td>CFD</td>
<td>Computational Fluid Dynamics</td>
</tr>
<tr>
<td>DC</td>
<td>Direct current</td>
</tr>
<tr>
<td>EC</td>
<td>Energy content of wind (kWhm$^{-2}$)</td>
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<tr>
<td>EFD</td>
<td>Experimental Fluid Dynamics</td>
</tr>
<tr>
<td>EPF</td>
<td>Energy Pattern Factor</td>
</tr>
<tr>
<td>GWEC</td>
<td>Global Wind Energy Council</td>
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<tr>
<td>HAWT</td>
<td>Horizontal Axis Wind Turbine</td>
</tr>
<tr>
<td>MNRE</td>
<td>Ministry of New and Renewable Energy</td>
</tr>
<tr>
<td>MRF</td>
<td>Multiple Reference Frames</td>
</tr>
<tr>
<td>NACA</td>
<td>National Advisory Committee for Aeronautics</td>
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<tr>
<td>NREL</td>
<td>National Renewable Energy Laboratory</td>
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<tr>
<td>PLA</td>
<td>Power Law Index</td>
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<tr>
<td>SEIG</td>
<td>Self-excited Induction Generators</td>
</tr>
<tr>
<td>TSR</td>
<td>Tip Speed ratio</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>USA</td>
<td>United States of America</td>
</tr>
<tr>
<td>VAWT</td>
<td>Vertical Axis Wind Turbine</td>
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<tr>
<td>VSCF</td>
<td>Variable Speed Constant Frequency</td>
</tr>
<tr>
<td>VSVF</td>
<td>Variable Speed Variable Frequency</td>
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<tr>
<td>WECS</td>
<td>Wind Energy Conversion System</td>
</tr>
<tr>
<td>WPD</td>
<td>Wind Power density (Watts/m$^2$)</td>
</tr>
</tbody>
</table>
a  Axial induction factor
a' Tangential induction factor
A  swept area (m²)
b  Width of blade (m)
C  Weibull Parameter (Shape)
c  chord of aerodynamic profile (m)
d  Diameter of the rotor (m)
D  drag force (N)
h  Hub height (m)
H  Height (m)
I  current (amps)
i  incidence angle (degree)
K  Weibull Parameter
L  lift force (N)
n  Parameter used in power law
N  Number of blades
P  Mechanical power produced by the turbine (W)
Q  Turbine Torque (N.m)
r  Radius of the blade element (m)
R  Rotor radius (m)
T  Axial thrust (N)
V  Wind velocity (m/s)
W  Velocity of wind relative to the aerofoil (m/s)
α  pitch angle (degree)
η  Available efficiency
ηₐ alternator efficiency
η₉ generator efficiency
ηₘ mechanical efficiency
θ  angle of attack (degree)
\( \theta_{\text{max}} \) Maximum angle in a quadrilateral (degree)
\( \lambda \) tip speed ratio
\( \mu \) Hellmann coefficient
\( \rho \) density of air (kg/m\(^3\))
\( \sigma \) Blade solidity
\( \phi \) Flow angle (degree)
\( \omega \) angular rotor speed (rad/s)
\( C_D \) aerodynamic drag coefficient
\( C_L \) aerodynamic lift coefficient
\( C_M \) power performance of a wind turbine
\( C_p \) power coefficient
\( C_Q \) Torque coefficient
\( C_T \) Thrust coefficient
\( E_a \) available wind energy (J)
\( E_{\text{as}} \) available energy flux (W/m\(^2\))
\( F_M \) moment force (N)
\( F_N \) Thrust (N.m)
\( F_T \) Torque (N.m)
\( F_x \) Thrust on the turbine rotor (N.m)
\( F_{x(\text{max})} \) Maximum thrust on the turbine rotor (N.m)
\( h_r \) Reference height (m)
\( H_{\text{ref}} \) Reference height (m)
\( K_E \) Energy Pattern Factor
\( m_w \) mass of air (kg)
\( N_m \) Number of hourly wind speed values during the month
\( P_a \) total wind power available (W)
\( P_d \) Wind power density (W/m\(^2\))
\( P_e \) electrical power output (W)
\( P_{\text{max}} \) Maximum power in wind stream (W)
\( P_{\text{out}} \) power recovered from the wind (W)
\( P_{\text{out.max}} \) maximum power that can be drawn from the wind (W)
\( P_s \) Shaft power output (W)
\( P_{\text{total}} \) Total power in wind stream (W)
\( P_w \) Wind power in the upstream wind (W)
\( P_{\text{air}} \) Air pressure (Pascal)
\( R_g \) Gas constant (J/kg.K)
\( T_p \) time period (Hours)
\( T_a \) Air temperature (K)
\( T_s \) Shaft torque (N.m)
\( T_{\text{max}} \) Maximum torque on the turbine rotor (N.m)
\( U_o \) upstream undisturbed wind speed (m/s)
\( V_h \) Wind speed at height (h) (m/s)
\( V_{\text{ave}} \) average velocity (m/s)
\( V_C \) cut-in-speed (m/s)
\( V_d \) Velocity of wind downstream of wind turbine (m/s)
\( V_F \) furling speed (m/s)
\( V_i \) inlet wind velocity (m/s)
\( V_{hr} \) Wind speed at reference height (m/s)
\( V_m \) mean velocity of wind (m/s)
\( V_o \) outlet wind velocity (m/s)
\( V_R \) rated wind speed (m/s)
\( V_r \) Calculated wind velocity (m/s)
\( V_{\text{ref}} \) Wind velocity at the reference height (m/s)
\( V_{\text{tip}} \) Blades tip speed (m/s)
\( V_u \) Velocity of wind upstream of wind turbine (m/s)