Technical note
Wind power generators
One platform for all high speed solutions

Main drivetrain concepts – both Doubly-fed (DF) and Full converter (FC)
All high speed solutions – using DF, PM or squirrel cage rotors
One generator platform – reliable, cost-effective, fast delivery
All MW class turbine sizes – a proven fast-track for offshore turbines

Flexible generator platform
The ABB platform design covers all high speed solutions by using squirrel cage, DF or permanent magnet rotors. The common DF can be upgraded easily to FC concept, still keeping the same familiar drivetrain construction. The standard base construction for different powers enables high quality large-scale manufacturing for fast deliveries and the modular turbine interface connections can be modified to suit individual customer specifications. It is also an excellent choice as a replacement unit at existing wind parks.

Key advantages:
- Flexibility in concept selection
- Same drivetrain for different markets
- Easy upgrade from DF to FC concept
- High power density, small size, low weight
- Component availability, logistics, assembly
- Fast-track market introduction of new turbines
- Easier to establish local manufacturing worldwide

Standard drivetrain
Choosing the common high speed drivetrain enables small turbine size and offers an easy adaptation of both DF and FC concepts without the need for extensive re-engineering. It gives a fast-track for a new turbine concept and the multi-megawatt class offshore market. One drivetrain for all sizes also enables a global market approach with identical production lines and simple supply chain management in all main markets.
ABB is a leader in power and automation technologies that enable utility and industry customers to improve their performance while lowering environmental impact. The ABB group of companies operates in around 100 countries and employs about 124,000 people.

In the wind power sector, ABB is the largest worldwide supplier of electrical solutions, technology and market leader in generators, converters, motors, transformers, circuit breakers & contactors and HVDC.

ABB has delivered more than 30,000 generators over 30 years for wind, based on experience since 1889. Leading turbine manufacturers of all drivetrain types rely on proven ABB technology, offering solutions such as inner or outer rotor direct drive PM generators, integrated medium speed generators and our flexible high speed platform.

Proven ABB solutions provide continuous operation for maximum energy production with lowest lifetime cost.

Typical data of high speed generators up to 7 MW:

<table>
<thead>
<tr>
<th>Frame size</th>
<th>Frame / power (depending on speed)</th>
<th>Speed range</th>
<th>Rotor options</th>
<th>Cooling</th>
<th>Voltage</th>
<th>Frequency</th>
<th>Ambient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>up to 2000 rpm</td>
<td>Doubly-fed (DF)</td>
<td>Air or water cooled</td>
<td>690 V to 15000 V</td>
<td>50 and 60 Hz</td>
<td>Standard: -20°C ... +50°C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>up to 2000 rpm</td>
<td>Permanent magnet (PM)</td>
<td></td>
<td></td>
<td></td>
<td>Low temp: -30°C ... +50°C</td>
</tr>
</tbody>
</table>

Typical dimensions (PM type, LxWxH, weight):

- 500: 2500 x 1700 x 1800 ; 5–7 tn
- 560: 3000 x 2100 x 1900 ; 7–10 tn
- 630: 3200 x 2300 x 2000 ; > 11 tn
- 710: 3700 x 2400 x 2300 ; > 15 tn

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