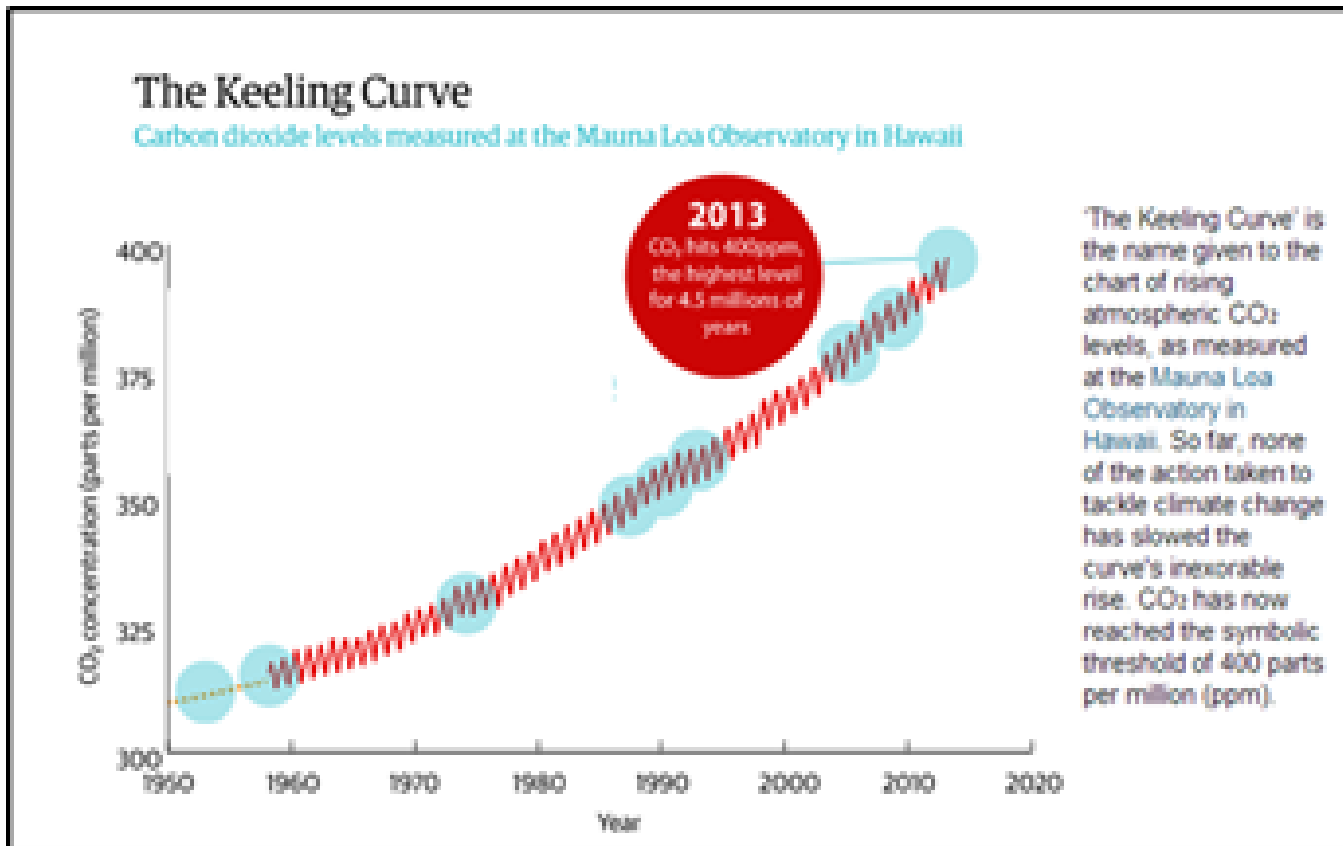


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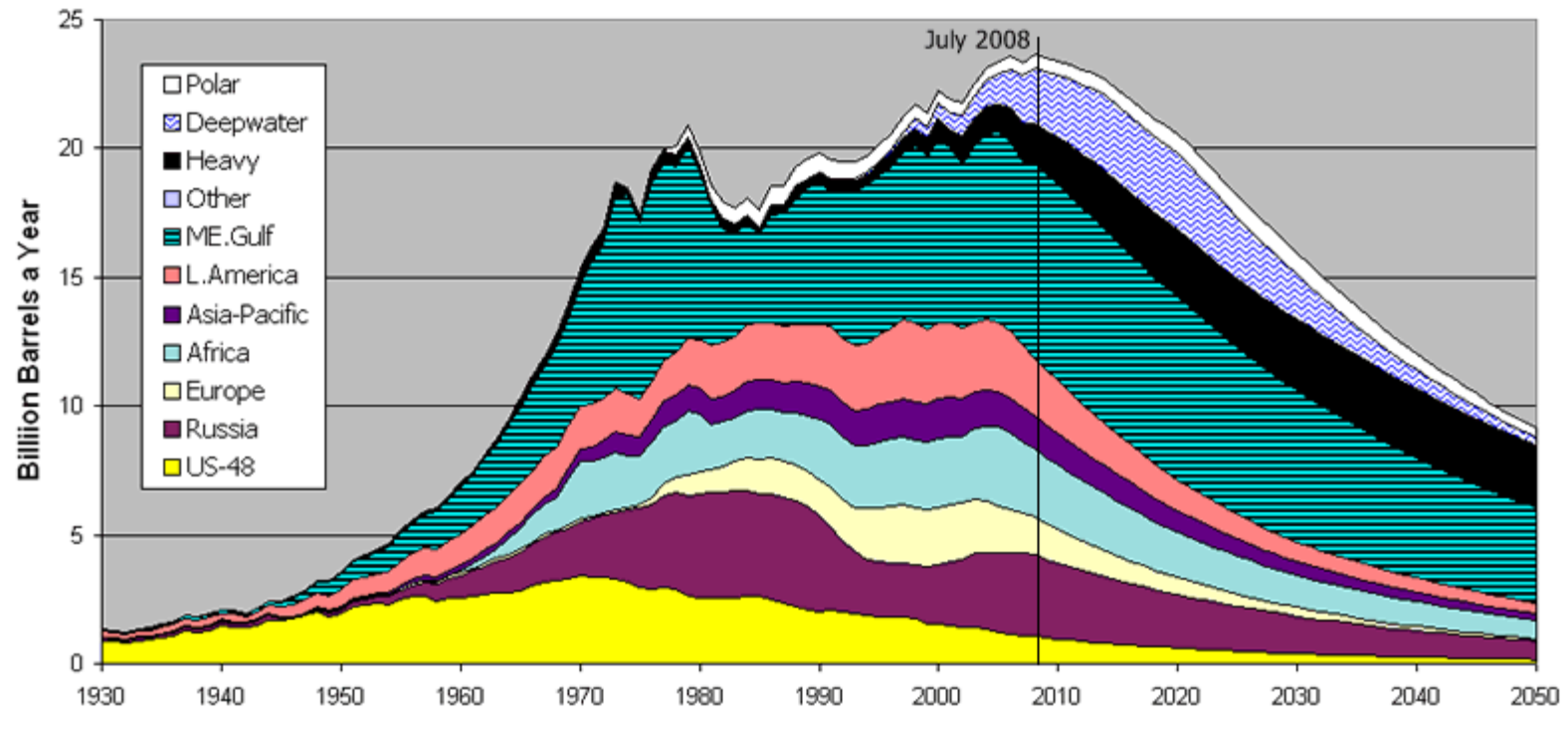
Keeling curve of GHG concentrations vs time



(<http://www.guardian.co.uk/environment/interactive/2013/may/10/climate-warming-gas-carbon-dioxide-levels-interactive>)

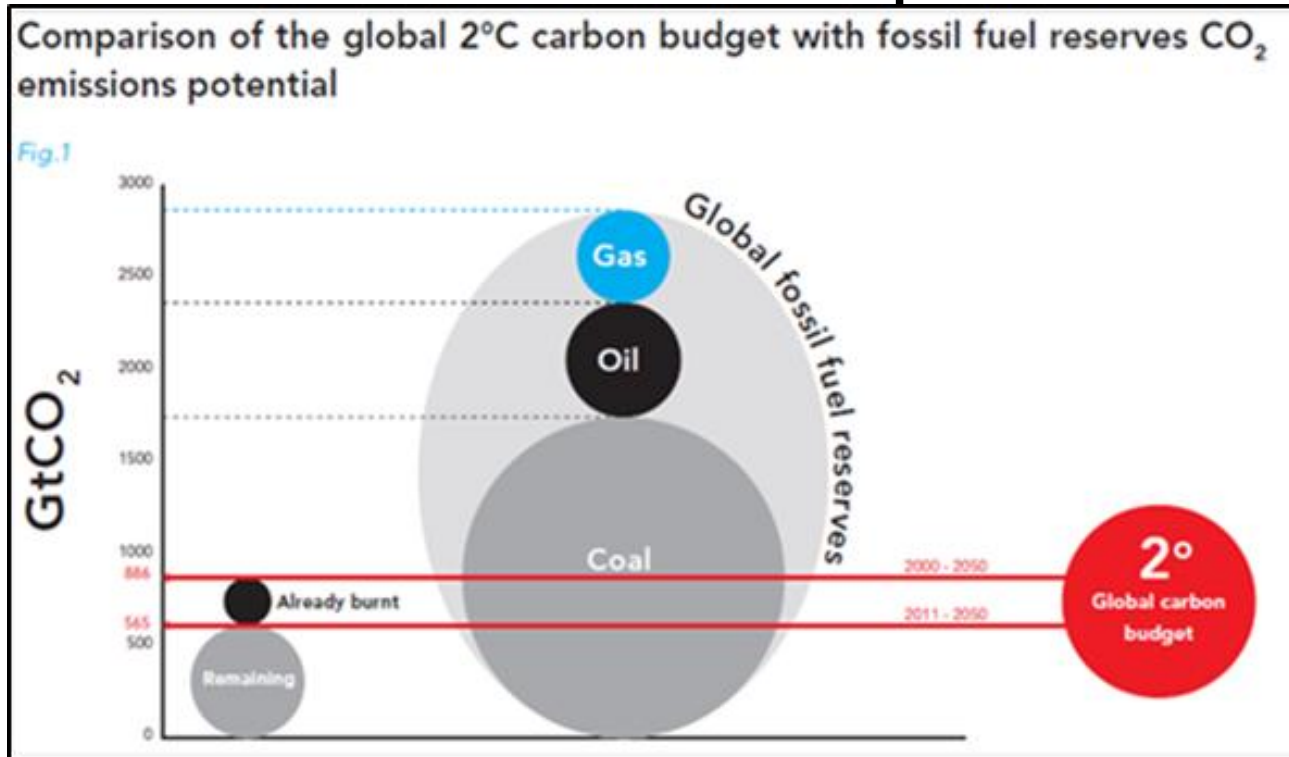
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OIL PRODUCTION



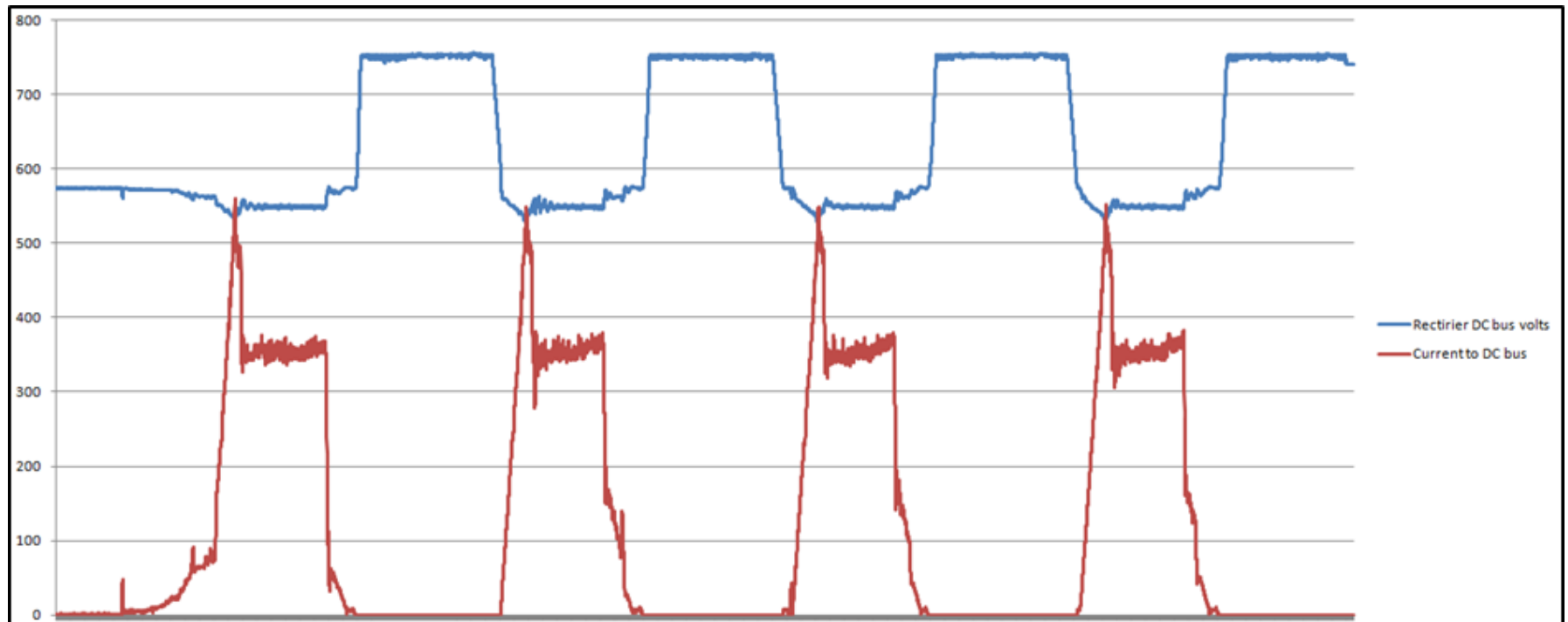
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Comparison of the global 20C carbon budget with fossil fuel reserves CO₂ emissions potential



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Measurements of current and voltage on an RTG crane at Felixstowe



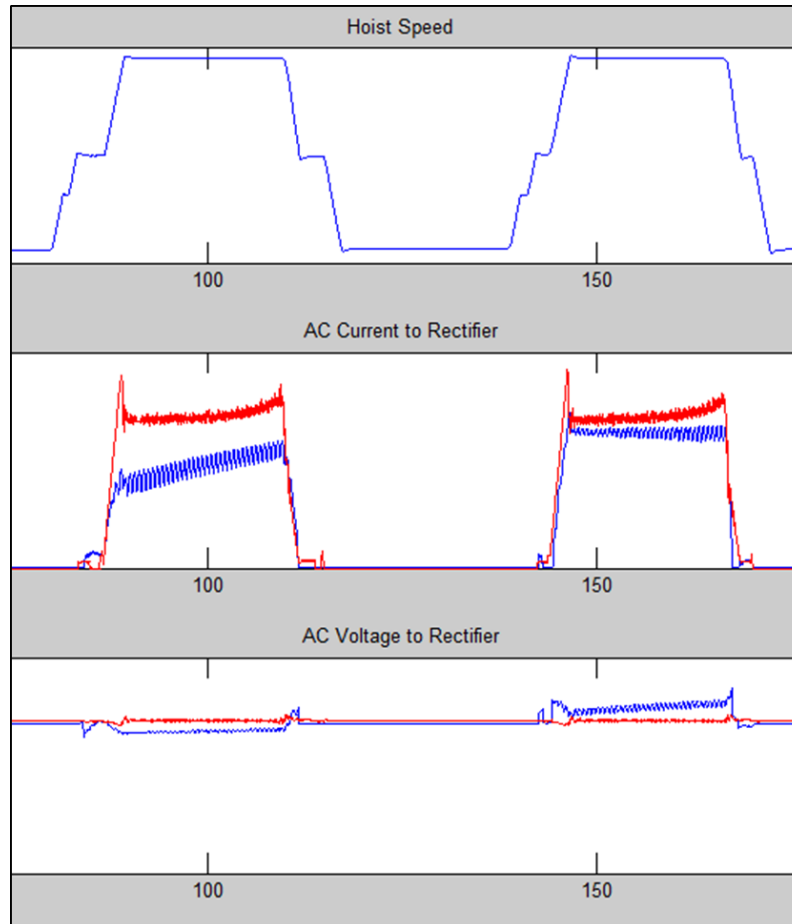
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Modelling operation of RTG crane

- The model requires various sections to reflect the actual system.
- Flexibility of modular design allows model to be easily adapted to new cranes and situations.
- The current model is divided into the following:
 - Diesel Engine and Speed Control
 - PMSM and Automatic Voltage Regulator
 - DC Link with Break Chopper
 - Induction Motors (representing the hoist, trolley and gantry in RTG) with Speed Control
 - Energy Storage System
 - Global Energy Control

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Modelling predictions of a RTG crane



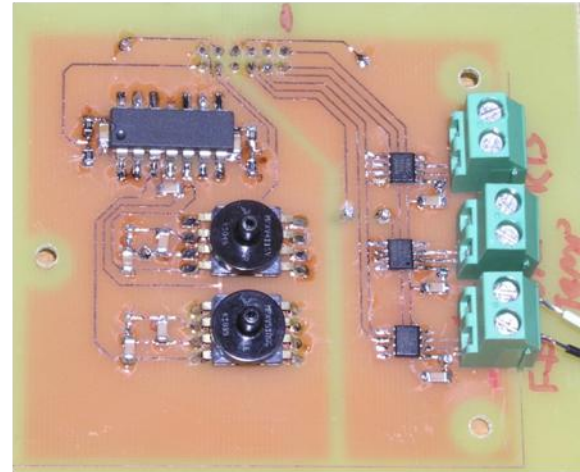
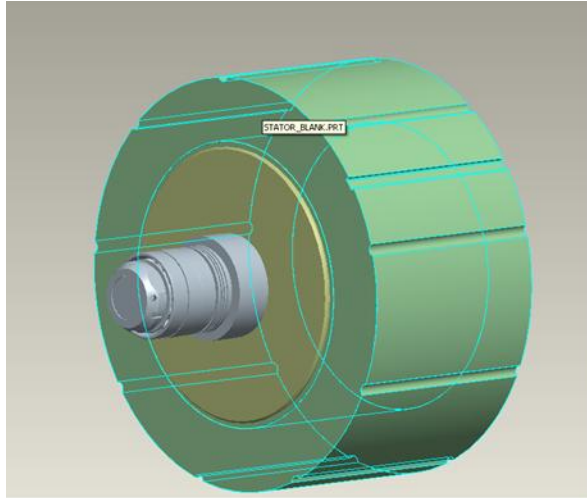
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Safety casing which surrounds flywheel rotor overwrapped with aramid tape



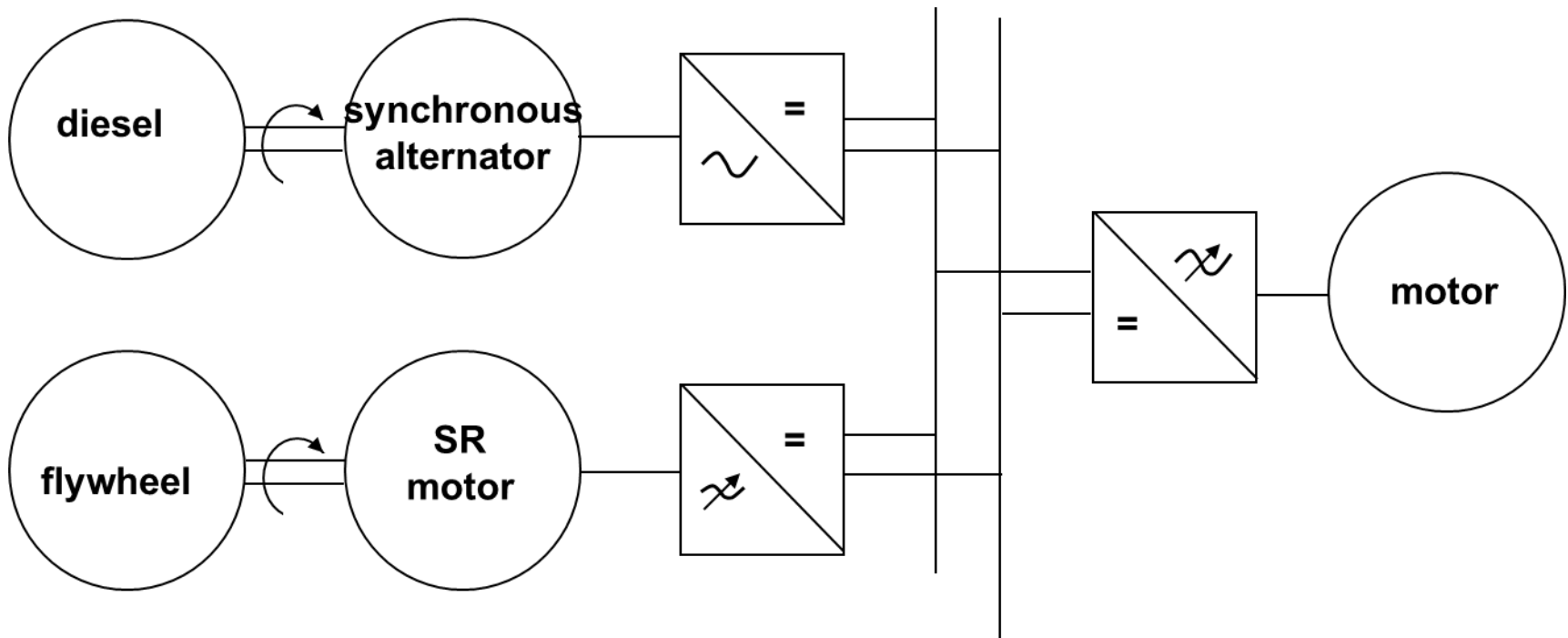
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CRESS components



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Electrical interconnection (DC)



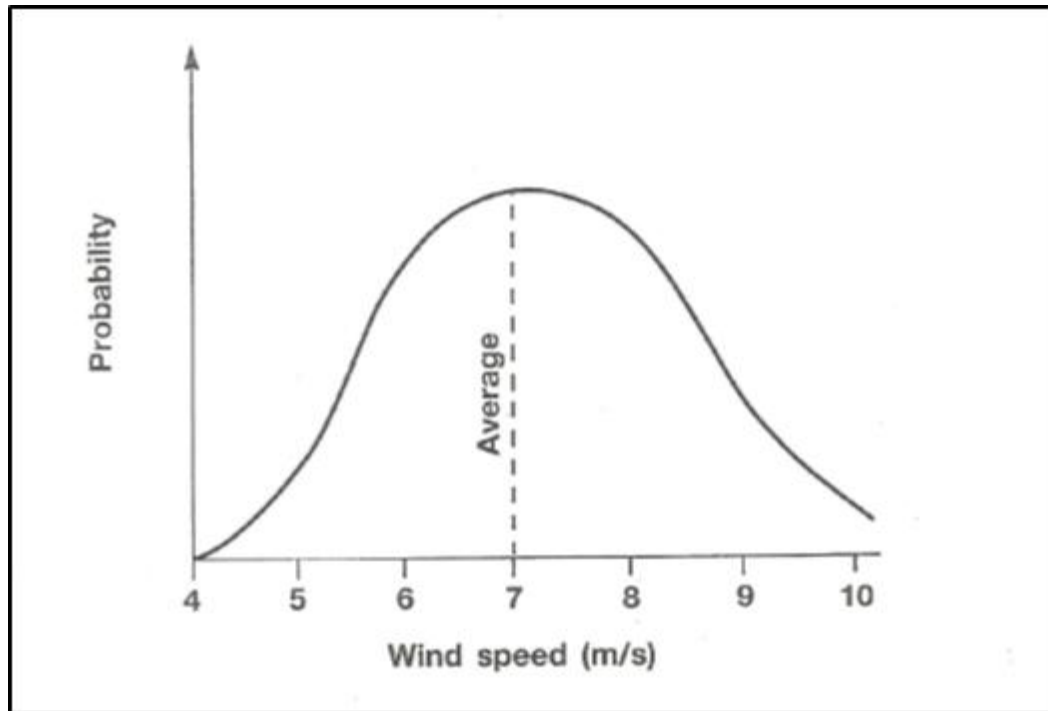
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The back to back storage rig



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Typical wind speed distribution curve



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Typical power curve showing the effect of wind turbulence on power generation

