# Hardware-in-the-Loop-Test System

Partner:

Energy from renewable sources, such as wind or solar, is typically fed into the grid via converters. The Power Hardware-in-the-Loop (PHIL) test system can provide a realistic test environment for the converter. On the grid side as well as on the source side, the real environment is emulated by the simulation model software in the real-time simulator. The PHIL interfaces ensure the exchange of information and energy between the converter and the simulation environment. Extreme grid conditions (voltage and frequency deviations, fault-ride-through) can be easily simulated in the PHIL test. This enables cost-saving already in the development phase and appropriate measures to be taken for a grid-compatible end-product.

- Characteristics:
  - 30 kVA Class
  - Real-time simulation of grid and source side (wind blade and pitch & yaw system, hydraulic turbine, photovoltaic cell ...)

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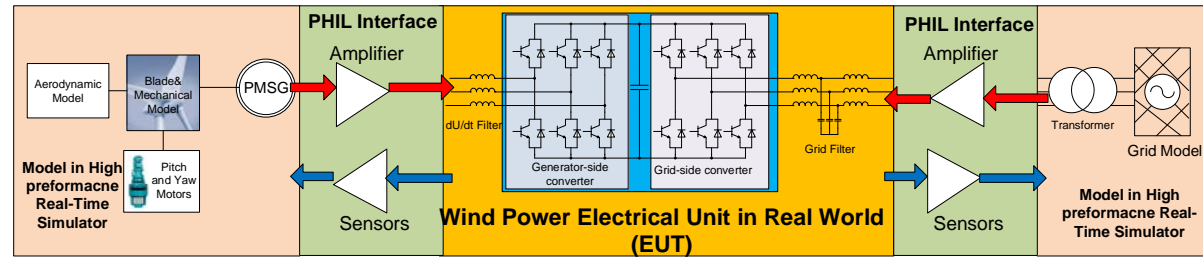
The PHIL interfaces, realized by power amplifiers, are responsible for converting the power signals from the converter into corresponding information for the simulation environment of the real-time simulator and vice versa..