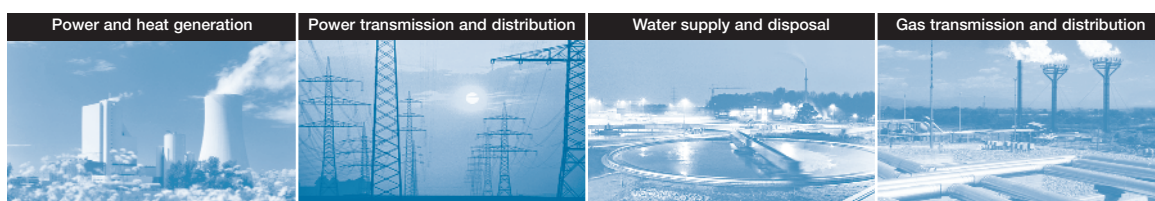
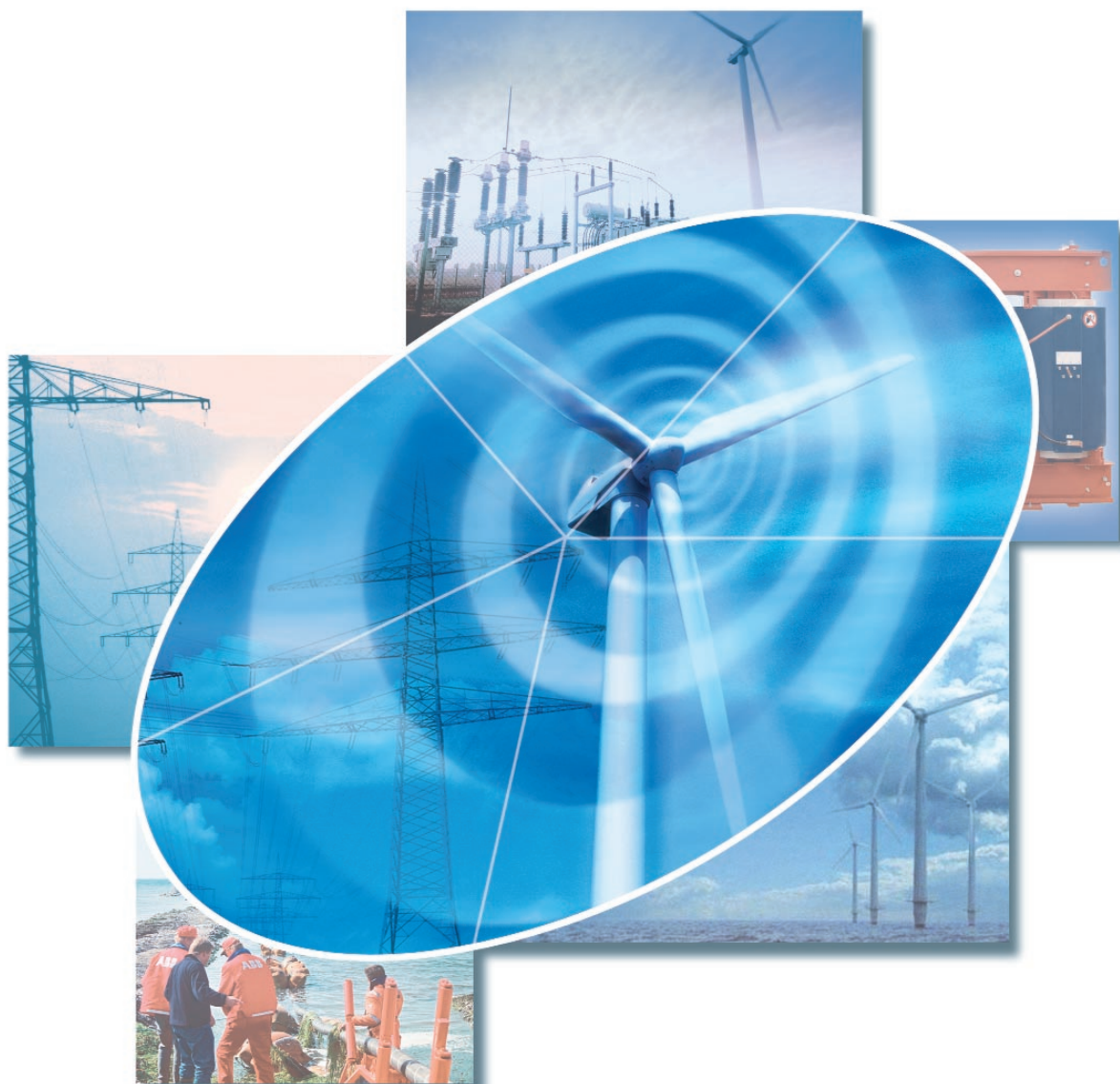


ABB – Enabling the Power of Wind

Scope of Supply



ABB

ABB - Environmentally Engaged

ABB can look back on a hundred years of experiences in power and automation technology. Today and with this background we are convinced that decentralised energy generation on the basis of renewable energy sources will play an ever increasing role in fulfilling the global energy requirements.

In a developing world which is continuously growing closer together, technologies which can be applied to small distribution systems as well as medium sized and large projects, are superior to the current technology based on fossil fuels. Even the short term feasibility of such systems makes them more up-to-date in comparison with the larger systems with their longer development and construction periods.

Through the high development investments in past years, ABB has created a basis enabling them to offer economic and environmentally friendly solutions assembled from modular sub-

systems. Especially the utilisation of wind energy has profited from these investments and is currently the focal point in the products and systems in the field of renewable energy sources.

In many countries, as a result of the increased environmental awareness of the population, the peripheral political conditions are changing in favour of renewable energy. The technologies for the realisation of such new concepts have already been developed. The paths have been levelled for a modern and responsible energy supply.

Profit from the know-how of a reliable partner and experience which products and systems can be applied in our projects.

For a clean environment. With economic and enduring solutions from ABB.

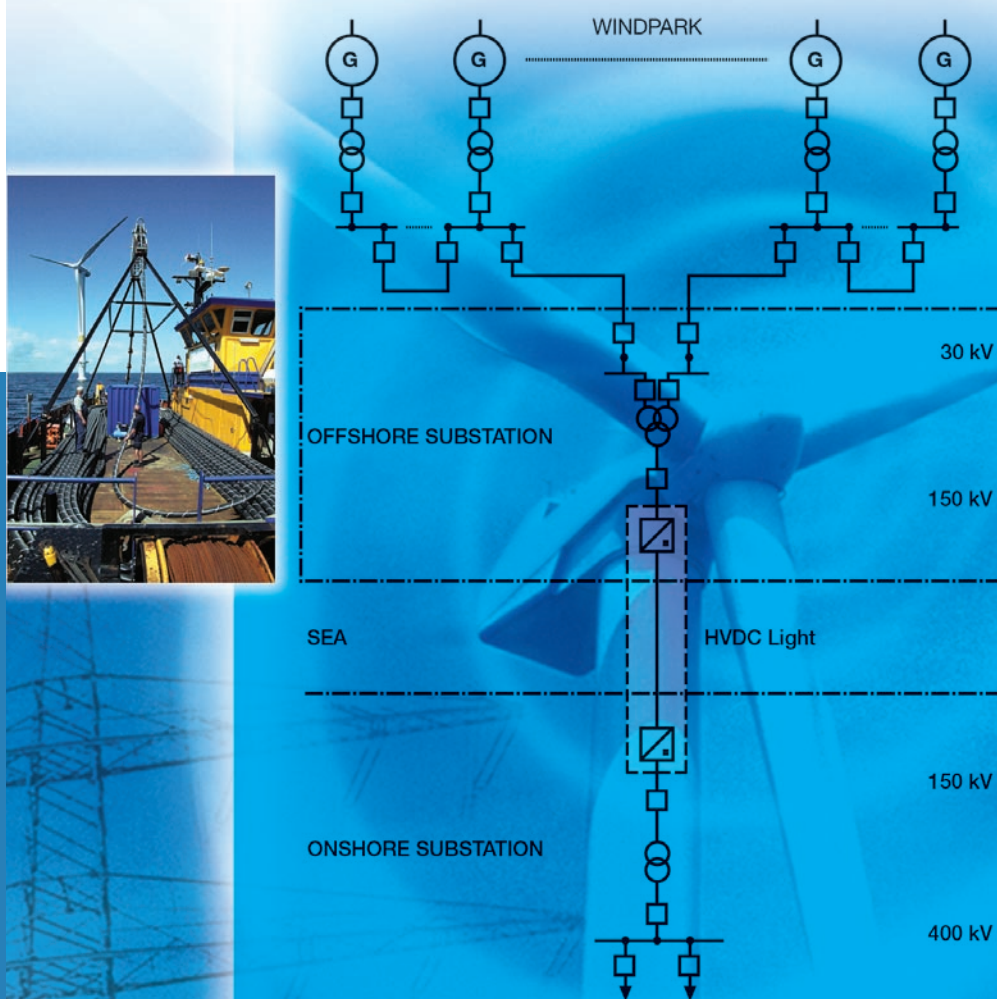


ABB - the leading component supplier of:

- Generators
- Motors
- Converters
- Low voltage equipment
- Switchgears
- Cables
- Protection & control



**Technology leadership in
components and systems**

All inclusive solutions

**Experience and global
resources guarantee the
optimal solution**

**Global lead with strong
local presence**

System Competence

As »Builders« of electrical infrastructure systems ABB undertakes the Turn-Key construction and delivery of:

- Wind farm interconnection
- AIS and GIS Substations on land and on off-shore platforms
- Submarine cable transmission
- On-shore OH-line/cable transmission
- Power grid connection
- Control and protection systems
- SVC-systems
- HVDC light
- SCADA , Industrial^{IT}



instead of split approach

Rich experience in
management of large
projects

All key components from one
source

World market leader
in HVDC technology

ABB – More than just a Supplier



ABB supports windfarm developers in permission process and executes

- Electrical engineering
- System studies for grid connection
- Stakeholder consultations with Grid Utilities



Our competencies and services for grid connections

- System and Feasibility studies
- Project - Management
- Engineering and design
- Contracting and construction supervision
- Delivery and commissioning

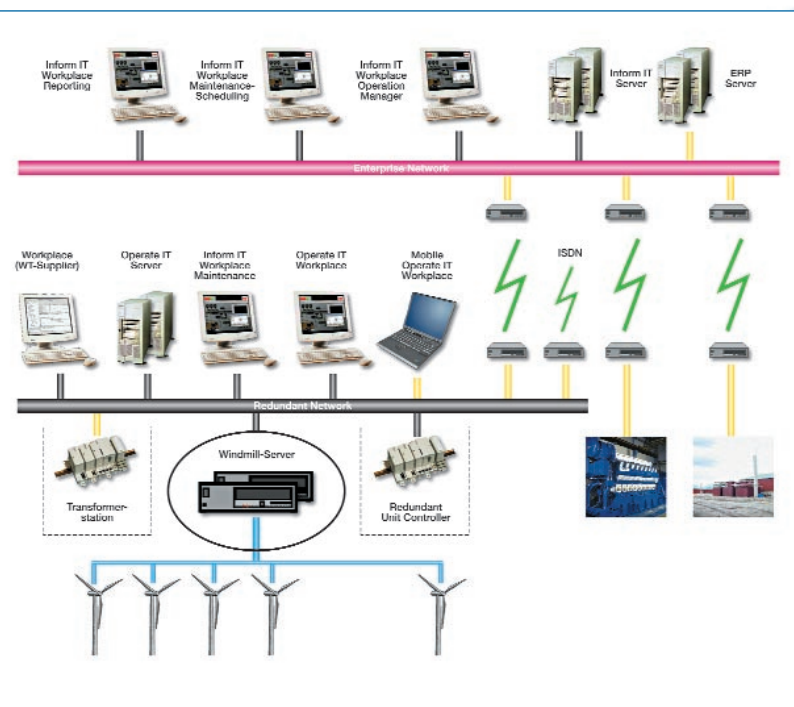


ABB assists with wind farm operation and service

- Tools for Operation and Maintenance Management
- Condition based reliability centered maintenance
- Repair & preventive maintenance
- Diagnostics
- Spare parts

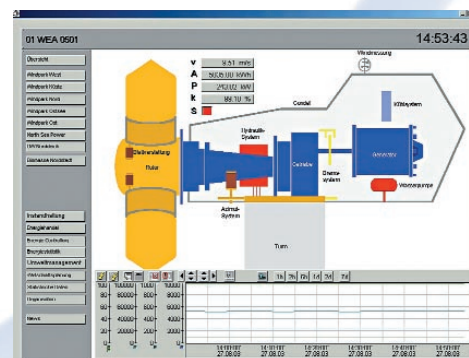




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