

# Services note

## Life cycle management of wind turbine converters

### ABB wind turbine converter life cycle phases

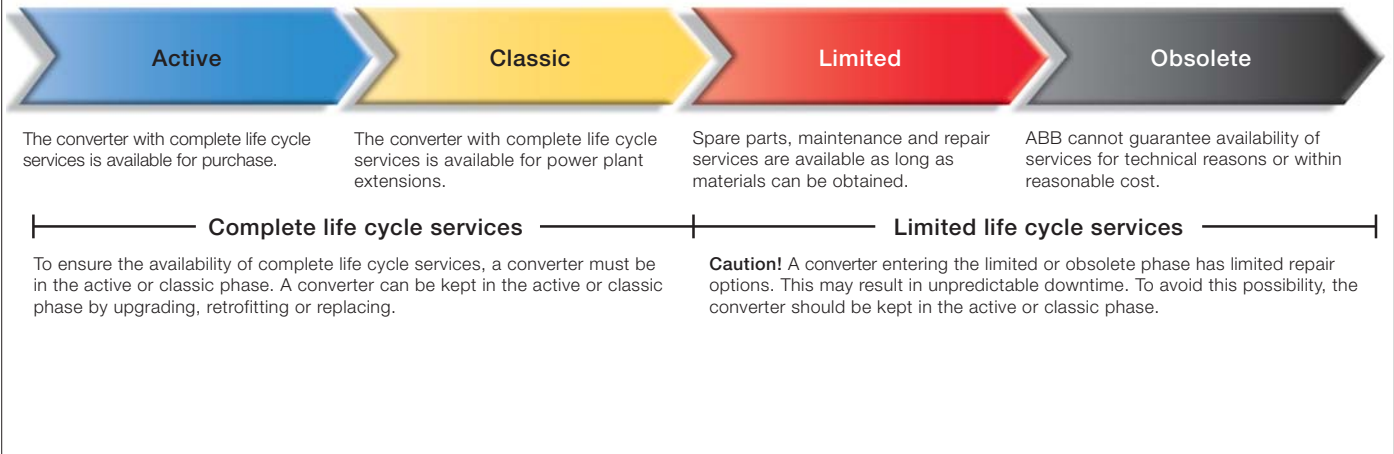


ABB follows a four-phase model for managing life cycles of its wind turbine converters. The aim is to enhance customer support and improve plant efficiency.

**ABB has developed a wind turbine converter life cycle management model aimed at providing proactive services for maximizing availability and performance. This model not only provides optimum support to end users but also a smooth transition to a new wind turbine converter when the converter has come to the end of its lifetime.**

The model divides a product's life cycle into four phases: active, classic, limited and obsolete. Each phase has different implications for the end user in terms of services provided.

#### Benefits of life cycle management

Life cycle management maximizes the value of the converter and its maintenance investments by:

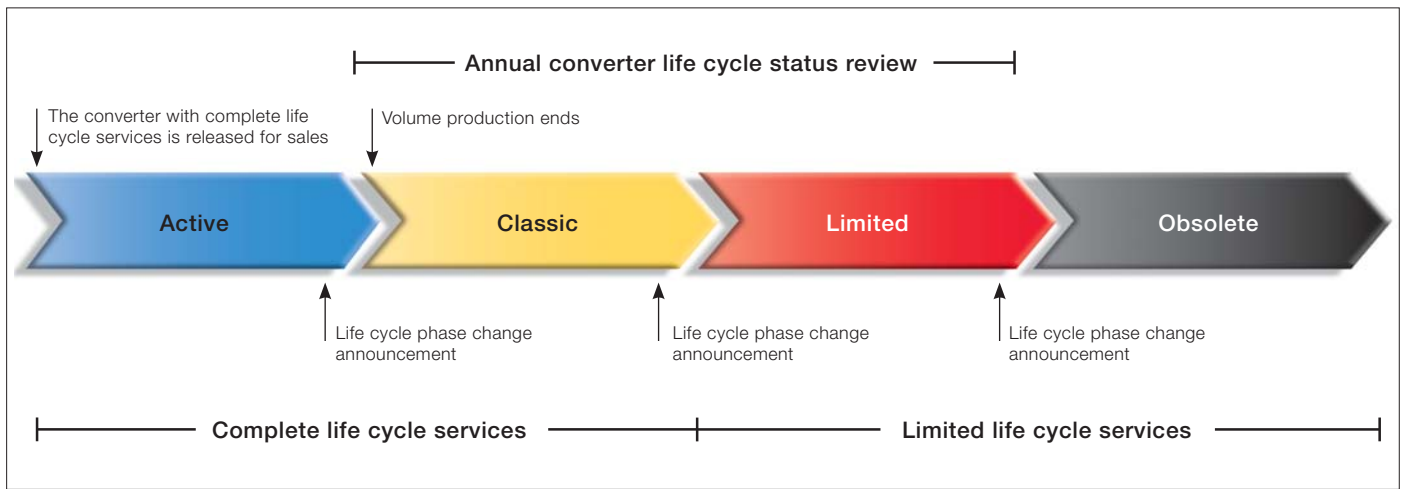
- ensuring spare parts and ABB competence availability throughout the lifetime
- enabling efficient product support and maintenance for improved reliability
- adding functionality to the initial product by upgrading or retrofitting
- providing a smooth transition to new technology at the end of the product lifetime

#### Active phase

The active phase starts when the converter is launched. In the active phase the end user benefits from different warranty options and other services such as training and technical support including converter adjustment for optimum performance. Complete life cycle services from spare parts and preventive maintenance to retrofits and service contracts are also provided. The active phase ends when the volume production of the converter ceases. ABB issues an announcement of the life cycle phase change.

#### Classic phase

ABB wind turbine converter users continue to benefit from complete life cycle services throughout the classic phase. The classic phase is closely aligned with ABB's research and development work to provide continuing support for wind turbine converters while developing future converter generations. In the classic phase new converter hardware and software development may be required to provide the maintenance techniques and upgrades needed to guarantee that the converter continues to operate at its peak performance.



Even though ABB wind turbine converters are no longer marketed in the classic phase, converter modules are available for purchase. Complete converters and converter modules for power plant extensions, spare parts and software upgrades are available.

The ABB wind turbine converter maintenance is straightforward. By following ABB's maintenance schedules, life cycle costs can usually be minimized. Maintenance schedules, which are available for every wind turbine converter, are based on ABB's four decades of experience in frequency converter technology. Wind turbine converter upgrades and retrofits improve performance and extend the converter lifetime. Throughout the classic phase, ABB reviews the availability of services. Should there be any changes in the availability of services for the converter, ABB issues a life cycle announcement. This way the end users are kept fully informed.

To ensure the availability of complete life cycle services, ABB recommends that a converter is kept in the active or classic phase of the life cycle. The converter can be kept in the active or classic phase by upgrading, retrofitting or replacing.

### Limited phase

In the limited phase, services gradually become obsolete. Spare parts are available as long as components and materials can be obtained. In addition to the annual life cycle status reviews, ABB issues a life cycle phase change announcement, half a year prior the product becoming obsolete. This is the last opportunity to transfer to new technology before product services end.

### Obsolete phase

The ABB wind turbine converter is transferred to the obsolete phase when it is no longer possible to provide services at reasonable cost, or when ABB can no longer support the product technically, or the old technology is not available.

For more information, contact your local ABB representative or visit:

[www.abb.com/drives](http://www.abb.com/drives)  
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