ABB’s TrafoSustainableRetrofit™ offers a package of new technologies to expand the use and extend the value of aged transformers, making business more sustainable. While lowering the risk of fire and environmental impact, this new service combines extra overload capabilities with extended life.

**What are the technology improvements?**
The rational use of cellulose or high temperature materials combined with ABB’s less flammable insulating liquid BIOTEMP can now be used to increase transformer power ratings. Included are the safer maintenance free dry type bushings and the vacuum type load tap changer which also requires minimal maintenance while increasing transformer availability.

As preference moves towards the monitoring of equipment, ABB’s Online Monitoring - TEC permits a reliable overloading control and a more convenient condition based maintenance due to the easy access to the instant and lifetime data of the equipment.

Supporting the optimization of the transformer’s maintenance strategy is the Mature Transformer Management Program. The MTMProgram combines ABB’s extensive experience with multiple technologies and leading expertise on transformers to provide valuable executive information after a complete assessment of the transformer’s condition.

Naturally, ABB Transformer Service works in partnership with customers to leverage all these elements and improve the performance of their transformer or fleet.
Below are some of the solutions ABB can offer using new insulation systems and technologies:

I) Retrofit with an increased rating:
- added capacity and higher overload
- reduced losses at original ratings depending on the original design
- the technology can provide an average increase in power or overload capability of 50%

II) Retrofit with the same capacity rating but reducing coil size:
- added reliability with the use of high temperature insulation
- fast execution
- the value of the transformer is optimized
- possibility of cost reduction using less copper and labor

III) Retrofit with the same rating and coil dimension:
- allows increased overload capability of the transformer i.e. for critical units in the grid.
- adds reliability and ensures higher oil quality over time
- the transformer can be overloaded more often and is more durable

IV) Our decision matters:
- Retrofit or Retrofit with BIOTEMP®, biodegradable fluid, improves transformer safety
- bio-degradable material obtained from renewable resources minimizes environmental impact of oil spillages
- less flammable fluid reduces the risk of fire and associated collateral damages
- outstanding stability to assure long term operation combined with reduced maintenance
- step towards a sustainable grid

V) Improve reliability and safety:
- ABB’s MTMProgram for transformer of fleet assessment optimizes the resources for maximal performance and reliability with minimal environmental impact
- ABB TEC monitoring system allows real time condition assessment and control over the transformer life improving capability and safety during overloads
- ABB dry type RIP (Resin Impregnated Paper) bushings with composite insulators, withstand rigorous seismic requirements and do not brake into pieces nor explode
- ABB vacuum technology for tap changers reduces the maintenance frequency and improves safety by containing the arc inside the vacuum chamber
- ABB expertise in transformer noise reduction. ABB can help substation owners meet new noise regulations in old substations by mixing the specialized knowledge in transformer noise with traditional and advanced technologies as the ABB Active Noise Control (ANC)
- ABB TrafoSiteRepair® has been improved for more than 25 years to eliminate transportation risks and reduce equipment unavailability during the remanufacturing process

ABB TrafoSustainableRetrofit™ benefits:
- reliable alternative to a new transformer with shorter lead time
- cost effective and environmentally friendly reuse of materials
- delay larger investment in the purchase of new equipment
- added reliability for transformers operating in critical conditions
- more operational system flexibility from increased overload capacity
- increased power for a given unit size or available space
- improve safety of the equipment and personnel
- meet or exceed environmental requirements and expectations from the community

To improve the performance of your transformer fleet, contact your local ABB Specialist.