

Take the MotorAdvantage and unlock the hidden savings within your electric motors

MotorAdvantage is a scheme to determine how best to save money, reduce energy use and lower maintenance costs from a plant's installed electric motor base.

MotorAdvantage aims to encourage industry to uncover the true cost of running electric motors. Research by ABB reveals that UK industry is failing to efficiently manage its motor inventory, thereby incurring millions of pounds of unnecessary downtime, repair and energy costs.

MotorAdvantage is aimed at companies operating a continuous process such as those found in food & beverage, chemical, oil & gas and pharmaceuticals. Such processes tend to have critical applications, whereby if a motor fails the cost to a company can be hundreds of pounds per hour in lost revenue. It is not just the loss of production but the potential loss of the company's customer.

How it works

There are three stages to MotorAdvantage:

1. Consultation

During the consultation process ABB examines the installed motor asset register for the plant and, working with the local engineers, identifies up to five critical applications that are running either continuously or for more than 4,000 hours per annum. They then determine some basic information about these motors such as:

- How old are the installed motors?
- How efficient are the installed motors?
- How many hours do they run per annum?
- Have they been rewound before?



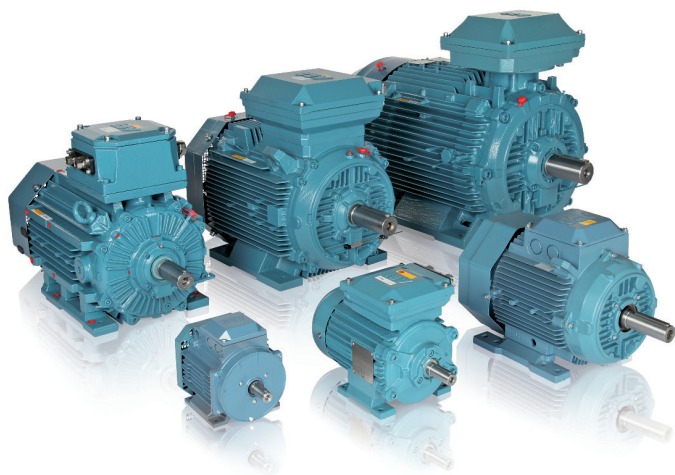
- What spares holding do you have for critical plant?
- What is your repair/rewind policy for 'failed' motors?

ABB also engages with the plant's process engineers to determine the exact design criteria for the various processes. This gives ABB a clearer understanding of how the process is meant to operate and its critical design operating points, thereby ensuring that a properly dimensioned motor is selected should a replacement be deemed necessary.

2. The Appraisal

An ABB engineer, or one of ABB's authorised channel partners, visits the end-user to inspect the selected motors, get an understanding of the plant, the inventory of spare motors, energy and maintenance plans. It is not unusual to find that an old motor can be 1-5 percent lower in efficiency compared to a new premium efficiency variant. If that motor is running continuously then you can achieve a typical payback of between 2-3 years should you wish to take the decision to scrap the motor prior to failure.

If the motor is replaced at the point of failure then, taking the rewind cost into the payback calculation, the new motor cost can be recovered in less than twelve months. Bear in mind that many rewind motors will only have a six month warranty of the repaired components whilst a new premium efficiency motor from ABB will come with a full three year warranty.



3. Proving the savings – report and recommendations

Following the collection of the data, the findings are analysed and potential savings identified using dedicated software. The findings are methodically presented, with tables being created to help identify where savings are likely to arise. Among the data available includes an estimation of present energy usage; whether the application would benefit from variable speed control; payback time if an investment is made in new motors; carbon dioxide emission reductions; along with many other key facts and analysis.

An action plan is prepared, usually comprising an Executive Summary and a detailed Engineer's Report, highlighting applications that can save the most. The figures will normally be translated into monthly savings, and there will be detailed recommendations for implementation.

Benefits

- In just half-a-day, an ABB engineer can quickly assess up to five installed motors that could benefit from a motor management plan
- Assesses the end-users current policy in the event of a motor failure and the financial impact on the company
- Identifies improvements to be made with regards to maintenance and stockholding
- Determines the energy use of the current installation
- Avoids damage to a customers brand or image caused through loss of production
- Avoids overly ambitious motor management plans that try to assess every single motor on a plant

Considerations

While mechanical repairs – such as bearings and shafts – will always be needed, electric motor users should carefully consider whether a rewind is preferred to a replacement motor. What if this is a critical, continuous process application? Taking it off line could cost hundreds of pounds per hour.

With MotorAdvantage, a few simple measurements can enable an estimate to be given for the likely time to a motor failure and the impact on production can be calculated. It also gives a realistic view of only having a repair policy when compared with a replacement policy. The scheme shows the value of using a third party to hold replacement motors within close proximity to the site to minimise inventory.

Do not just consider the efficiency of a motor. Just because a motor has a high efficiency does not mean that it is the most reliable. Users must consider preventive maintenance, critical spares, total failure scheduling etc. No matter how energy efficient the motors are, if they are not managed and maintained properly a company will be wasting money through unplanned outages.

Further reading

Other useful guides, which can be obtained from BrochureLine 0800 7837491, include:

- The Motor Guide
- Motor Quality Guide - your questions answered
- Brochure: Process performance premium efficiency motors

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