

# ABB Replacement Savings Analysis



Investing in a new motor to replace an existing, less optimal unit will often have a payback time of one year or even less. ABB Replacement Savings Analysis evaluates the benefits and provides an immediate report on payback time and savings based on improved energy efficiency and reliability.

There are a number of reasons why existing motors may need to be replaced, including:

- Motors get old and could be subject to fatigue
- Motors may be oversized or not appropriate for their application (original selection was wrong)
- Motors are incurring excessive energy and reliability costs

An on-site assessment could be required to calculate the potential savings available through replacements.

ABB Replacement Savings Analysis (for use with HV induction motors exclusively) supports optimized decision making on investments: the available budget is targeted in the most profitable way.

A solution based on both energy efficiency and reliability highlights the importance of the lowest life cycle cost, because many motors that seem cheaper to buy are actually much more expensive to run.

Reliable, higher efficiency motors not only reduce energy costs and greenhouse gas emissions, but also deliver:

- Reduced maintenance
- Uninterrupted production
- Longer lifetime
- Lower life cycle costs

At the conclusion of the analysis a report is automatically generated which summarizes the entire assessment

The various replacement options are presented with details of potential savings and payback analysis.

# Deliverables

## – comparing existing motors with new motors from ABB

### Payback time

- Indicates how soon the investment in a new replacement motor will be recovered
- Shorter payback time is preferable, as it indicates a higher quality investment
- Payback time is calculated on the basis of savings achieved through energy efficiency and reliability



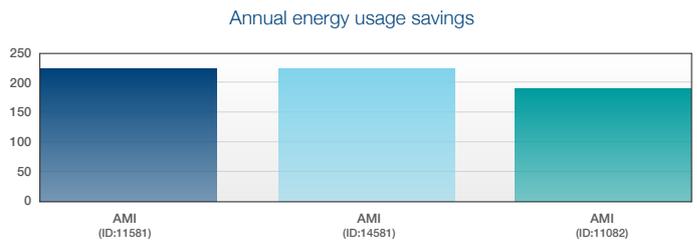
### Accumulated savings

- Savings realized by the better energy efficiency and reliability of the replacement motor will continue to accumulate over time
- The points where the graphs cross the zero line correspond to the payback times for the replacement motors
- The motor that produces the highest cumulative savings should be the preferred choice for the replacement



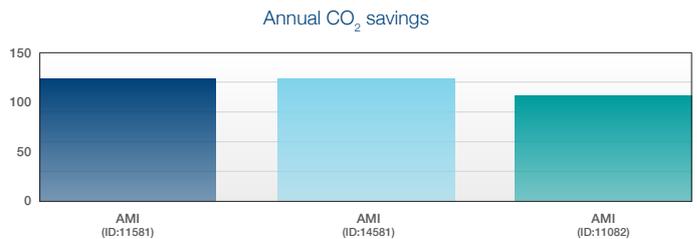
### Energy savings

- Energy efficiency savings should be an underlying criterion in the choice of replacement motors. After all, more than 70% of a motor's operational costs can be attributed to electricity usage
- Bigger savings in MWh (megawatt hours) translate into higher cost savings and lower CO<sub>2</sub> emissions, and hence indicate a better replacement option



### CO<sub>2</sub> reductions

- When energy is consumed, CO<sub>2</sub> is emitted at some point in the power chain
- Each MWh saved is converted into a saving in CO<sub>2</sub> emissions
- Higher MWh savings mean greater reductions in CO<sub>2</sub> emissions and therefore a better carbon footprint



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