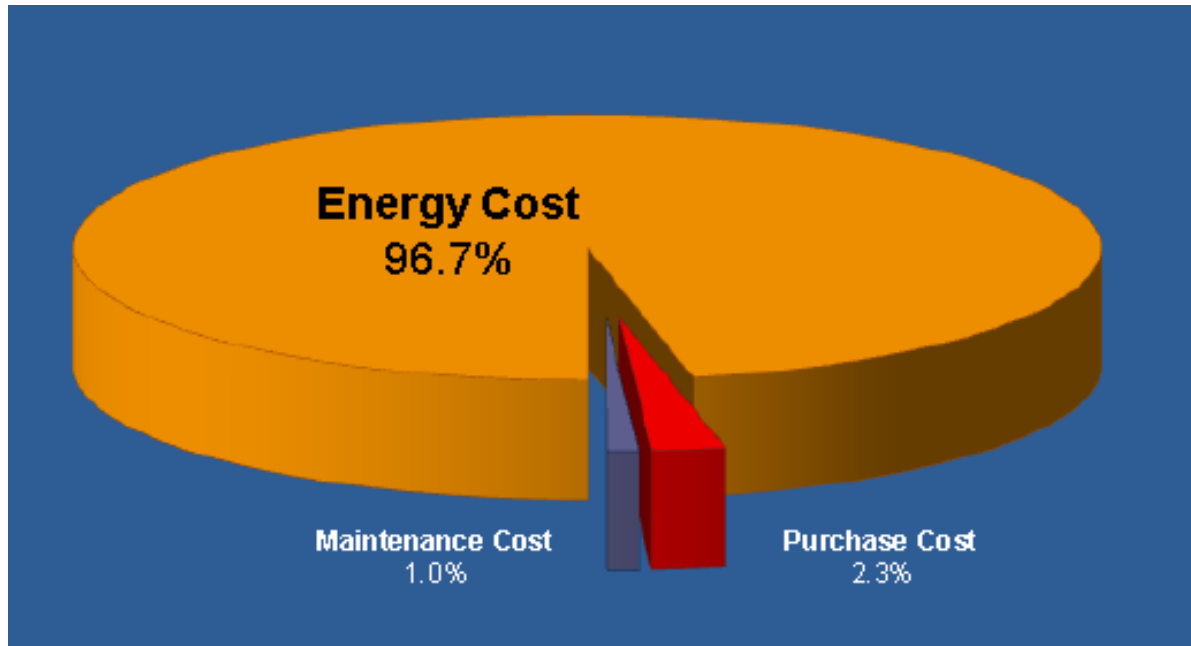# Tech Talk August 2010

Motor Energy Cost vs Motor Purchase Cost

To spend your money wisely when buying electric motors you really need to remember the significance of the chart below.

(The data above was based on a test of a 11kW IE3 motor,4,000 operating hours per year,15 year life cycle.Source: EuP lot 11,2008)

IN A SINGLE YEAR THE COST OF ENERGY CAN BE UP TO 10 TIMES THE PURCHASE COST. OVER THE LIFE OF THE MOTOR IT IS BY FAR THE MOST SIGNIFICANT COST.

After December 19, 2010 under the new Energy Independence and Security Act of 2007 (EISA), the minimum efficiency of many types of motors between 1 and 200 hp will increase to NEMA Premium levels, NEMA spec MG-1(2006) Table 12-12, if they are to be used in the United States or are purchased by the Federal Government. Motors made prior to this date can still be sold and installed.

The following motor categories, not previously required to meet the 1992 EPAct efficiency levels, are now required under EISA 2007:

1. **8-pole motors (900 rpm)**
2. **Close-coupled pump motor**
3. **Design C motors**
4. **U-frame motors**
5. **C-face or D-flange motors without base (footless)**
6. **201 to 500 HP motors not previously covered by EPAct will be required to comply with Energy Efficient efficiencies as defined by NEMA MG 1, Table 12-11**
7. **Vertical solid shaft normal thrust motors (P-base) (as tested in a horizontal configuration)**
8. **A poly-phase motor with voltage of not more than 600v (other than 230 0r 460v)**

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Motors not covered by the EISA regulation:

* Submersible motors

* Intermittent duty

* Adjustable speed with optimized windings

* High slip Design D

* Multi-speed motors

* DC motors

* Single phase motors

* Two digit frames (48-56)

* Medium voltage motors

* Definite and special purpose motors not used as general purpose

* Motors that are integral with a gear or brake