GETTING PRACTICAL WITH CLIMATE CHANGE

BEAMA marketing director Kelly Butler looks at the demands of Climate Change…

All organisations must respond to change. It's the same for trade associations like BEAMA and its members. Presently, we're tackling the demands of climate change.

In October 2008, we published our White Paper - an industry response to climate change, clearly laying out the contribution manufacturers of electrotechnical equipment can make towards helping the Government achieve its very challenging targets.

The numbers are significant. Our association's influence begins at the source of generation and ends at service applications in buildings. By improving performance of products through that value chain, our members can reduce combined losses from transmission, distribution and inefficient end use by 30%. Using Government figures that equates to nearly 6% reduction in overall UK primary energy demand. It is a contribution of this magnitude that is required to tackle climate change.

There are four key areas in which our members can make a big impact in reducing carbon emissions and achieve significant savings:

1. **Reduction of losses in transportation/delivery of electrical energy**
   Modern high voltage transformer use saves 3% carbon over a long asset lifetime of 20-30 years. Phasing of electrical energy equipment improves delivery of effective power, while capacitor based power factor correction equipment can increase effective efficiency of networks and equipment, thereby reducing carbon emissions for delivering electricity to end users. Efficient distribution switchboard rooms in large commercial buildings can reduce heat losses and air conditioning demand. A reduction in losses enhances overall carbon efficiency of equipment.

2. **Efficient integration of low carbon equipment**
   Government policy mechanisms will see a drive towards the growth in renewable generation equipment of all scales. Around 15% losses are estimated between local or building integrated renewable generation, and appropriate specifically designed distribution infrastructure is essential.

   Extra low voltage equipment and lighting in buildings has resulted in an increase in use of transformers from mains voltage AC to low voltage DC. Such losses can be as high as 25%, so more efficient transformers and automated switching equipment should be specified.

3. **Improvements in the efficiency of end use appliances**
   Controls are key - 40% reduction in energy usage is possible with highly controlled ventilation equipment and we have seen remarkable savings attributed

to the growth in domestic heating controls, with advanced controls products adding a further 6% savings. Products are becoming more efficient; heat pumps deliver 300-400% efficiency versus traditional electric heating, DC powered ventilation equipment 60-65% improved operational efficiency, and the shift to low energy lighting 70% reductions. Our members continue to innovate, pushing the agenda for enhanced controls and technology performance.

4. **Control and monitoring of equipment to reduce excess energy use**

   BEAMA Smart metering manufacturers hold the key to unlocking enormous savings in energy use. Providing information to customers enabling behavioural change, ensuring intelligent and controlled appliances integrate with the national grid network and in line renewables, allowing a complete reform in the UK tariffing regime are additional smart metering benefits. Appropriate Building Automation Systems (BACs) can save 20% of heating, ventilation and air conditioning consumption.

Crucially, it is the practicalities of bringing these ideas and savings to the mass market. BEAMA's White Paper identified that Government must show more leadership in achieving carbon savings - move away from policy rhetoric and into market practicalities.

Emphasis needs to be on rewarding technology performance. The Government has made a dramatic impact through its progressive Building Regulations changes, but for new-build and refurbishment, product selection is driven largely by how products scored within national calculation models (Standard Assessment Procedure for domestic buildings and Simplified Building Energy Model for non-domestic). It's hard to influence how these work and treat technologies. There must be far more partnering with industry from Government to make calculation models accurate and in touch with modern technology.

Further leadership is needed to encourage early equipment replacement in existing buildings and local networks. A Government backed assessment methodology is required, based on lifetime carbon savings and quantification of lost savings through extending asset life. Simple tools to make a difference; it's about *dialogue* and *delivery* - not just rhetoric.

Every industry and nation needs to project and plan for the longer term. However, the UK remains unclear about how and when the electricity grid will be de-carbonised, and this is confusing building related policy. Detailed planning and joined up policy is essential. Regulations for building technologies should address future energy demand patterns - UK thinking isn't there yet. Leadership and practical considerations of how energy markets must meet future building needs (and vice versa) are required.

The electrotechnical sector can make a major contribution in helping Government with its climate change objectives. It's good for business - customers and the environment. The time for big 'statement' driven policy headlines is over… it's time to roll up the shirt sleeves, get the right policy tools in place and focus on *practical* delivery.