



Improve Halogen's Eco-Credentials by Switching to a Dimmer

By Tony Doyle, Chairman at **Varilight**

The postponement of the planned EU phase-out of 'non-directional' halogen lamps until September 2018 and the fact that no timetable currently exists to phase out 'directional' halogen spotlights (such as GU10s) means that it is worth diverting our attention momentarily from the media 'spotlight' on LED lighting in order to address how the eco-credentials of halogen lamps can be improved by learning how best to control them. On studying the failure modes of halogen lamps a simple, if surprising, truth emerges which is that regular light switches are by no means the best method of controlling halogen lamps. Significant benefits can be gained by selecting the correct type of dimmer switch to control halogen lighting instead.

Many householders will have wondered why it is that halogen bulbs tend to 'blow' when they are first turned on but the reason for this is actually quite straightforward. When a light switch is turned on it immediately supplies full power to the lighting circuit, regardless of the type of lighting it is controlling. When cold halogen lamps are connected suddenly to full power in this way significant stress is applied and a proportion will fail when they are first switched on.

Despite halogen lamps not being nearly as energy-efficient as LED lighting alternatives, householders continue to choose halogen over LED, largely influenced by the comparative costs of purchase. There is, however, a hidden cost in the relatively high failure rates exhibited by halogen lamps and, in addition, the disposal and recycling of blown halogen lamps has its own environmental impact.

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Soft-Start Dimmers are Best for Halogen

In order to reduce the number of halogen lamps failing when they are first switched on regular light switches should be replaced by dimmer switches with a soft-start feature, which gently increases the power supplied to a lamp when the dimmer is first turned on. Soft-start allows the lamp to warm up gradually, reducing stress on the lamp which can reduce failures caused by rapid switch-on. Therefore, by choosing the right kind of dimmer, the lifetime of halogen bulbs can be dramatically extended and significant energy-savings can be made whenever the light is dimmed.

Several types of dimmer switch include soft-start and are available from most wholesaler including high-power options for larger halogen loads. For halogen lighting, choose either an “intelligent”, push-on/off dimmer or touch/remote control dimmer such as any dimmer from the Varilight V-Plus dimmer series. Intelligent dimmers have a microcontroller at their heart which enables a wide variety of features, including the ability to regulate the power supplied when the dimmer is first switched on.

Push-on/off intelligent dimmer switches can easily be used in 2-way circuits, as long as only one of the switches is replaced with a dimmer. Nevertheless, having a regular light switch in the circuit is not a problem in this case due to the presence of the intelligent dimmer switch. If the lights are switched on from the light switch rather than the dimmer then the power reaching the lamps will still be moderated in the same way by the soft-start feature of the dimmer.

Some touch and remote control dimmer switches, including all of those in the Varilight range, can also be used in 2-way (and indeed multi-way) circuits with the addition of a ‘dimming slave’ unit (or several) in the other switch position (or positions) in a circuit. In this case no regular switches remain and the dimming slaves facilitate the soft-start feature in the master touch and remote dimmer unit.

Similar life-prolonging benefits can also be provided by using a dimmer with a rotary switch where the dimmer will switch on at its lowest setting, depending on how quickly the knob is rotated to full brightness. In effect, we are creating a manual soft-start for 1-way circuits. Rotary dimmers, including high power versions, are available in the Varilight V-Dim series.

Energy-Saving Benefits

In addition to extending lamp lifetimes, dimmer switches offer energy-saving benefits when used with any kind of lighting, with halogen being no exception. Whenever the lights are dimmed, energy savings are made. It’s true that these energy savings are not on the same scale as would be achieved by replacing halogen lamps with LED equivalents but, with lighting making up 18% of a typical household’s electricity bill, the savings from dimming are not insignificant and this extra benefit should not be overlooked.

With the focus having been almost entirely on LED lighting in recent years, it is easy to forget that millions of halogen lamps are still sold each year in the UK and their use is widespread. For example, a survey of its members conducted by Which in May 2014 found that 49% still used halogen lamps in their homes. The impact of choosing soft-start dimmers instead of light switches to control halogen lighting could therefore be significant in reducing waste as well as saving energy while the lights are dimmed.

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The Varilight V-Plus dimmer series features soft-start which can prolong the life of halogen lamps