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Heads-up on the enforcement of new cable colour code for electrical wiring

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MOST Malaysians rarely think about the electrical wiring hidden behind the walls of their homes so long as the lights, air conditioners and other household appliances work when they are switched on.

Hence, most would not have paid much attention to the Energy Commission's announcement on June 11 about the enforcement of the implementation of the new cable colour code for electrical wiring. Malaysia is adopting the internationally harmonised IEC 60445 standard, replacing the traditional colour coding system based largely on the former British standard.

This announcement deserves greater public attention because it will influence future electrical installations in homes, offices and commercial buildings nationwide.

In most existing single-phase homes, the live conductor is identified by red and the neutral conductor by black. Under the new standard, these become brown and blue, respectively, while the protective earth conductor remains green and yellow.

For three-phase installations commonly used in commercial and industrial buildings, the phase conductors change from red, yellow and blue to brown, black and grey, and the neutral conductor will change from black to blue.

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This change is about more than colours. As Malaysia accelerates the adoption of rooftop solar systems, electric vehicle charging infrastructure and smart electrical technologies, harmonising with international standards will improve consistency, support safer installation practices and ensure compatibility with electrical equipment sourced from global markets.

Having led a research project commissioned by the Energy Commission in 2018 on Malaysia's transition towards IEC 60445, I have seen how this seemingly small technical change can have significant implications for public safety and consumer awareness.

The good news is that homeowners do not need to rewire their existing homes. Electrical installations that complied with the regulations in force when they were installed remain valid and safe. The new colour code mainly applies to new installations, major renovations, extensions and future electrical works.

Consumers are nevertheless likely to encounter the new colour coding when renovating their homes, upgrading distribution

boards, installing rooftop solar systems or fitting electric vehicle chargers.

During the transition period leading to full compliance on Jan 1, 2029, some buildings may contain both the old and the new colour coding systems. This is expected and does not mean that an installation is unsafe.

What matters is proper identification. Professional electricians do not rely solely on cable colours. They verify conductors using appropriate testing instruments before carrying out any work. Consumers should also avoid assuming that familiar colours always perform the same function, particularly in buildings where both systems may coexist.

Due to our DIY culture, many homeowners may attempt simple electrical repairs after watching online videos. While replacing a light fitting may appear straightforward, electrical work should never be based on assumptions about cable colours.

A mistake involving electrical conductors can have serious safety consequences. The safest approach is to engage competent and certified electrical personnel.

Ultimately, this transition reflects Malaysia's commitment to modernising its electrical infrastructure and preparing for a future that is increasingly electrified and interconnected.

Most consumers may never see the cables hidden behind their walls, but they will benefit from a system that is safer, more consistent and aligned with internationally recognised practices.

For homeowners, there is no reason for alarm or costly rewiring. What is needed instead is awareness. Sometimes, the smallest changes in our infrastructure play the biggest role in protecting lives and supporting the country's long-term energy future.

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(The writer was project leader of the research funded by the Energy Commission Malaysia in 2018, titled 'Study on Colour Coding Transition in Accordance to IEC 60445 in Malaysia Market and Proposal on Action and Implementation Plan to Move Forward'.)