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Amp up meter awareness

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By SAMANTHA WONG
 samantha.wong@thestar.com.my

EVERYONE has been in a blackout at least once in their lives. In the pre-smartphone era, remember how when the power went off, it was time to feel around in the dark?

The fond memories of the stumble-and-fumble process while looking for a candle or a torchlight are a reminder that home owners need to know where the fuse box and electric meter are.

While a fuse might trip during a power outage, the electric meter measures and records the total amount of electrical energy consumed by a home.

Supplied by Tenaga Nasional Bhd (TNB), the meters are housed in secure, weather-proof enclosures tailored to the property type such as gate posts for landed houses or electrical riser rooms for high-rises.

Within these enclosures, the meter is usually mounted on a fibreboard panel next to the utility cut-out fuses.

So, from gate posts to condominium corridors, the placement of the humble electric meter does reveal a piece of the puzzle of how technical rules fit in a home's layout.

It may seem like a minor design detail but it fits the practicality bill of how a utility company can, without disturbing the property owners, safely reach the meter when it needs to be installed, inspected or maintained.

TNB's Electricity Supply Application Handbook (ESAH) states that the utility provides

and maintains the meters needed to measure imported or exported electricity.

It also requires the point where a supply line terminates within a premise to be accessible to TNB personnel.

For home owners, that is why the meter is usually positioned outside the living space.

It allows access without requiring a technician to enter a private home while keeping the equipment in a location designed for electrical work rather than daily household activity.

Different properties, different needs

The same principle looks different across Malaysia's housing types. For landed properties with individual gate posts, TNB's guidance states that the meter is to be placed at the gate post, with access from the front.

In other cases, the service line

may terminate in a meter panel positioned outside the premises.

In high-rise homes, however, the task becomes more complicated. A single tower may contain hundreds of households, each needing an individually identified meter.

Rather than placing equipment inside every apartment, TNB's group-metering guidance requires meters in domestic multi-tenanted premises to be grouped in a dedicated metering room or steel-netting meter cage.

For buildings of up to five storeys, meters are generally grouped at ground level.

In apartments above five storeys, they are grouped at the relevant tenant-metering floor, with more than one metering location possible on the same floor.

As it is considered a shared service space, this explains the need for a dedicated corridor cabinet that services the whole floor instead of the apartment it

is placed closest to. There is also the crucial matter of labelling. The guide requires each meter to be permanently labelled to distinguish what it serves.

The nitty-gritty indicates that meter panels must be positioned within set height limits and have one meter of working space in front of them.

As for accessing the meters themselves, there is usually a

locking facility just to access the dedicated meter room.

Developer's role in electricity provision

On the developer's end, they are responsible for providing the meter board or meter panel according to TNB's specifications at the point where the supply lines terminate.

On TNB's end, they may change a meter, its accessories or its position when necessary for maintenance and meter reading.

Now, where do the architects fit in the picture? This is a big design challenge because the equipment has to be accessible yet protected. But it also has to fit the property's aesthetics.

In terms of infrastructure, maybe the landed home's frontage or a strata's common corridor. It is all about visual flow.

Some projects hide them smartly. They use recessed panels, coordinated doors or finishes that perfectly match the surrounding aesthetic. Some show them outright.

Regardless, the equipment has to be kept in a clean and dry location, protected from direct sunlight, rain, vibration and potential mechanical damage.

Smart meters give clearer consumption views

TNB describes their smart meter as a device that records electricity use and sends information automatically for efficient monitoring and billing.

They read daily energy usage and provide more accurate bills. The meters are an integral part of the creation of a smart grid, which uses digital technology to manage and supply electricity in properties.

TNB's 2025 integrated annual report stated that 5.56 million smart meters had been installed cumulatively. The group is working towards 9.1 million smart meters across Peninsular Malaysia in phases.

Its ESAH guidance also requires consumers to ensure sufficient 3G signal strength or another TNB-approved communication method at a meter room or meter location for remote reading. The handbook cites a minimum signal strength of minus 77dBm (decibel-milliwatts).

This does not mean every external meter cabinet exists because of smart meters.

Grouped and accessible metering has long been necessary for safety and maintenance. But as remote reading becomes more widespread, the meter location is no longer merely a point where someone checks a number once a month.

It is becoming a small but important connection point between the household and a more responsive electricity network.

That may become increasingly relevant as homes add rooftop solar panels, electric-vehicle charging and appliances that draw more power at different times of the day.

In the future, the simple meter cabinet outside a gate or apartment may play an even bigger role in showing households how they use energy and how they can really manage it better.

■ 5.56 million smart meters installed by TNB cumulatively as at 2025

■ TNB targets 9.1 million smart meter to be installed across Peninsular Malaysia

■ For high-rise apartments, TNB requires each meter to be labelled to distinguish which unit it serves

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