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Challenges of Sabah's electricity system

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MY journey of engaging the public on matters of electricity supply and system reliability often makes me feel like I'm sounding like a broken record. Yet, I persist, because the stakes are too high for us to ignore. I am making a presentation on the ways and means to strengthen the sustainability of SESB in a certain convention today so I should write something related to my talk today.

This isn't just a technical issue for engineers or a budgeting concern for policymakers—it's a matter that touches every one of us. When our electricity falters, it's not just an inconvenience. Its impacts are far reaching namely: a disruption to our daily lives and well-being; threats to our national security as well as our health systems; disruption of our education system, our businesses, our investment and thus our economic growth. In other words, we are all in the same boat, and the challenges we face today will inevitably affect us all.

One issue that continues to loom large is the System Average Interruption Duration Index, or SAIDI in short. For those who might not be familiar, SAIDI is a critical metric that measures the average duration of power interruptions for customers over a period of one year per person. So, if I say the SAIDI in the district of Ranau is over 800, it means the disruption of electricity power supply per person, per year in minutes is 800 or 13 hours, which is obviously no good. In short, it's an indicator of the reliability of our power systems.

As of May, this year, the annualized SAIDI across Sabah stands at 219.38 minutes per customer. To put that in perspective, this means that on average, each customer in Sabah endures nearly four hours of power outages over the course of a year. However, the performance in each district varies. For example, the SAIDI for Kunak is 52, Tambunan 70, Kuala Penyu 42, Sandakan 93, Tuaran 159, Telupid 317,

Ranau 853, Kota Kinabalu 203, Labuan 99 and so on. In fact, in the Kota Kinabalu Industrial Park (KKIP) area the SAIDI is single digit.

SESB has been working very hard to address the issue of SAIDI over the years because as I have said we are mindful of the broader implications.

It is not hard to imagine the implications of say four hours of SAIDI, especially if those four hours occurs during crucial moments. When businesses are in the middle of important operations, or when students are preparing for exams, or even when families are simply trying to enjoy a quiet evening at home. I agree that these outages, though seemingly minor on paper, have real and often disruptive impacts on people's lives.

Looking closer at the data I mentioned earlier, we see that the top contributors to this SAIDI figure in Sabah are areas like Ranau, Kota Marudu, Pitas, Kota Belud, and Sipitang.

The reasons for these outages are varied but often come down to a few key factors: the absence of critical infrastructure such as Main Distribution Substations or Pencawang Pembahagian Utama (PPU), upgrading of the distribution cable from All Aluminium Cable (AAC) to Aluminum Bundle Cable (ABC) which results in long animal interference, cable faults, vegetation encroachment, lightning strikes, and aging infrastructure.

While the SESB's annualized SAIDI performance has improved by 49 percent compared to 2023, where it stood at 426.94 minutes, there is no room for complacency.

Yes, this improvement is noteworthy, and it's a testimony to the hard work being done on the ground, but it's also a clear signal that our work is far from over. We must continue to push for further reductions in SAIDI, because every minute counts when it comes to the reliability of our power supply.

This also goes to show that SESB require the much-needed fund to upgrade existing

infrastructure such as PMU, PPU and the transformation of the cable from AAC to ABC.

One of the other ways SESB is working on overcoming the key challenges in our electricity supply system, particularly the persistent SAIDI issues, is by focusing on improving our generation capacity. Generation is the backbone of our electricity system, if we don't get this right, the rest of the network suffers.

But generation isn't just about having more power. It's about having the right kind of power. This reduces the strain on the grid and ensures that even remote areas have access to reliable power.

In addition to generation, we are making substantial investments in upgrading our infrastructure. Mind you all these investments are from the savings of generated revenue and not from government allocation. It is the savings from the bills collected from consumers.

One of the key initiatives has been the replacement of old, vulnerable cables (AAC) with new, coated ones (ABC). This may seem like a small detail, but it's a critical step in preventing power trips caused by external factors like vegetation overgrowth and animals' intrusion.

These incidents, though often overlooked, contribute significantly to the SAIDI numbers I mentioned earlier. By installing coated cables, we can reduce the frequency of these interruptions and enhance the reliability of our network.

However, these upgrades come with their own set of challenges. The process is both expensive and time-consuming. Replacing cables across our vast network requires not only financial resources but also careful planning and execution.

Each kilometre of cable replaced represents a step forward, but it's a journey that takes time. We still have more than 5,000 km of cables that need upgrading and our financial capacity to upgrade is only 130 Km per year.



Another critical area that deserves more attention is the issue of subsidies. It's clear that there is still a considerable gap in public awareness regarding the different types of subsidies available to ensure financial sustainability to SESB.

SESB must urgently reduce non-technical losses due to electricity theft, which currently exceed RM200 million annually, to a more manageable level, such as RM90 million per year. A key focus should be on recovering stolen electricity, particularly in the more than 300 squatter areas across Sabah.

Beyond the subsidies provided by the federal government, there are specific subsidies aimed at domestic and industrial consumers, as well as targeted subsidies that could play a important role in our journey towards sustainability.

The concept of targeted subsidies is particularly intriguing, especially as we look to the future and consider how best to manage our resources.

Targeted subsidies offer a way to direct support where it's needed most, ensuring that those who require assistance receive it, while also promoting responsible energy consumption. This approach not only makes economic sense but also aligns with our broader goals of sustainability and environmental stewardship.

In closing, I urge everyone to stay engaged and informed. These issues might seem distant or technical at times, but they have a direct impact on our lives.

Whether it's through understanding the importance of metrics like SAIDI, recognizing the role of subsidies, or simply being aware of the challenges that our electricity system faces, every bit of knowledge contributes to the shared effort to improve our energy future.