From source to switch: How energy gets to your home

By Timothy Goh

Singapore’s electricity is generated and delivered to homes via a complex system that involves power plants, transmission and distribution networks, and a control centre. In this article, we explore how energy is converted, transported, and delivered to Singapore’s homes.

**Power Generation**

Energy is generated at power plants using a variety of sources, including natural gas, coal, and renewable energy. The steam turbine turns, converting thermal energy into mechanical energy. This mechanical energy is then used to power a generator, which converts the mechanical energy into electrical energy.

**Transmission and Distribution**

The generated electricity is then transmitted through high-voltage transmission lines to distribution centres. From there, it is distributed to homes and businesses through lower-voltage distribution networks.

**Control Centre**

The power system control centre (PSCC) monitors and controls the electricity network to ensure a stable and reliable supply. It receives data from various sensors and devices to forecast and respond to changes in demand.

**LNG Terminal**

The LNG terminal receives and stores liquefied natural gas (LNG) which is transported from remote locations. The LNG is then converted back into gas for use in power plants.

**Conclusion**

The process of generating, transmitting, and distributing electricity is a complex one that requires careful planning and management. By understanding the various components involved, we can better appreciate the effort required to ensure a reliable and sustainable energy supply for all.

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*Images and diagrams courtesy of the Singapore Power System Control Centre (PSCC).*

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**About the Author**

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