



PUTTING POWER IN THE HOUR

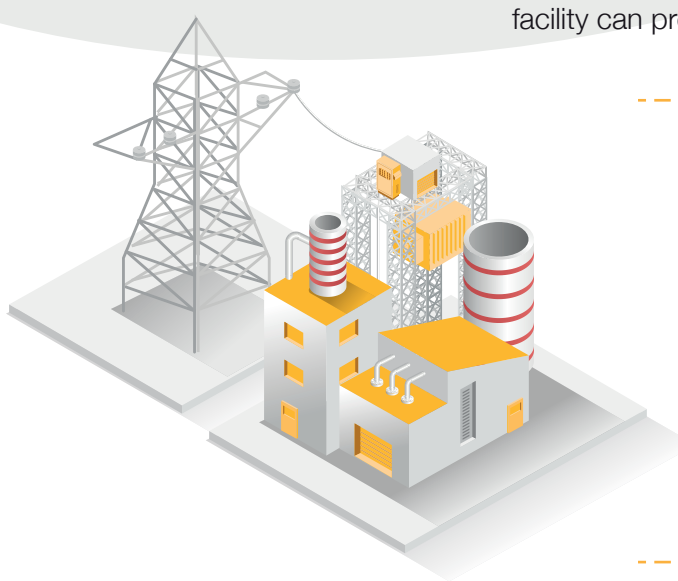
A QUICK GUIDE TO UNDERSTANDING POWER PRODUCTION CAPACITY

DID YOU KNOW?

Whenever an energy company or state utility announces a new power plant project, the first thing they mention is its **generation capacity**. But what exactly does this mean, how does power capacity work, and how do you measure it?



Generation capacity means the amount of electricity the facility can produce under specific conditions.



Nameplate capacity is the maximum amount it can produce at full power.

Facilities also specify their peak **summer and winter generation capacity**.

Capacity is measured in kilowatts (KW), megawatts (MW) or gigawatts (GW). These are all measurements of power.

Capacity factor is how reliably the facility can produce power. A plant with a capacity factor of 100% would mean it produces power non-stop.



Renewables generally have the lowest capacity factor – wind (35%) and solar (25%) produce electricity less reliably, as they rely on suitable weather conditions to work.

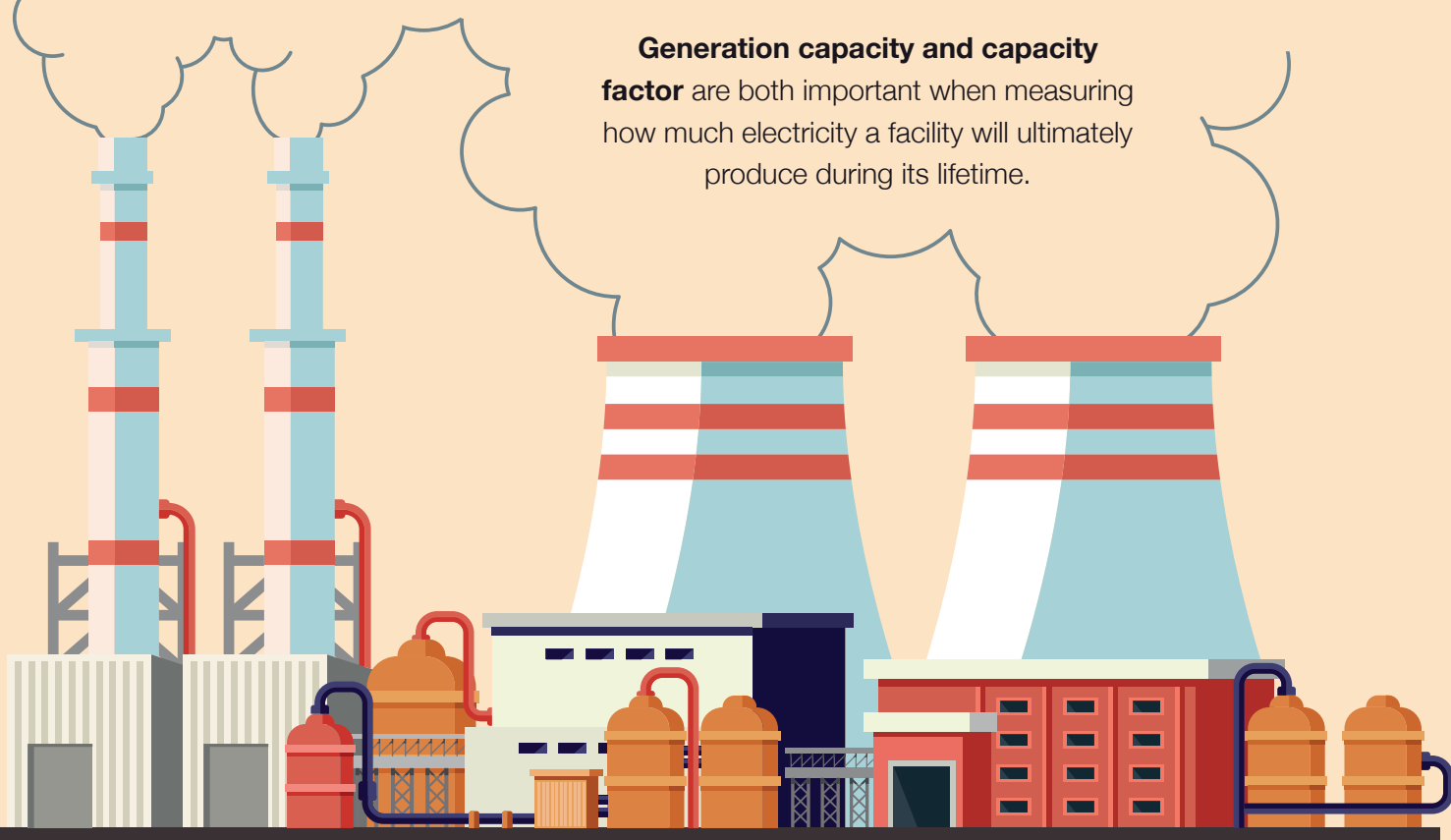


Coal and natural gas facilities tend to maintain capacity factors of around 48% and 54% respectively.



Nuclear power plants have the highest capacity factor – routinely running in the high 90s.

Generation capacity and capacity factor are both important when measuring how much electricity a facility will ultimately produce during its lifetime.



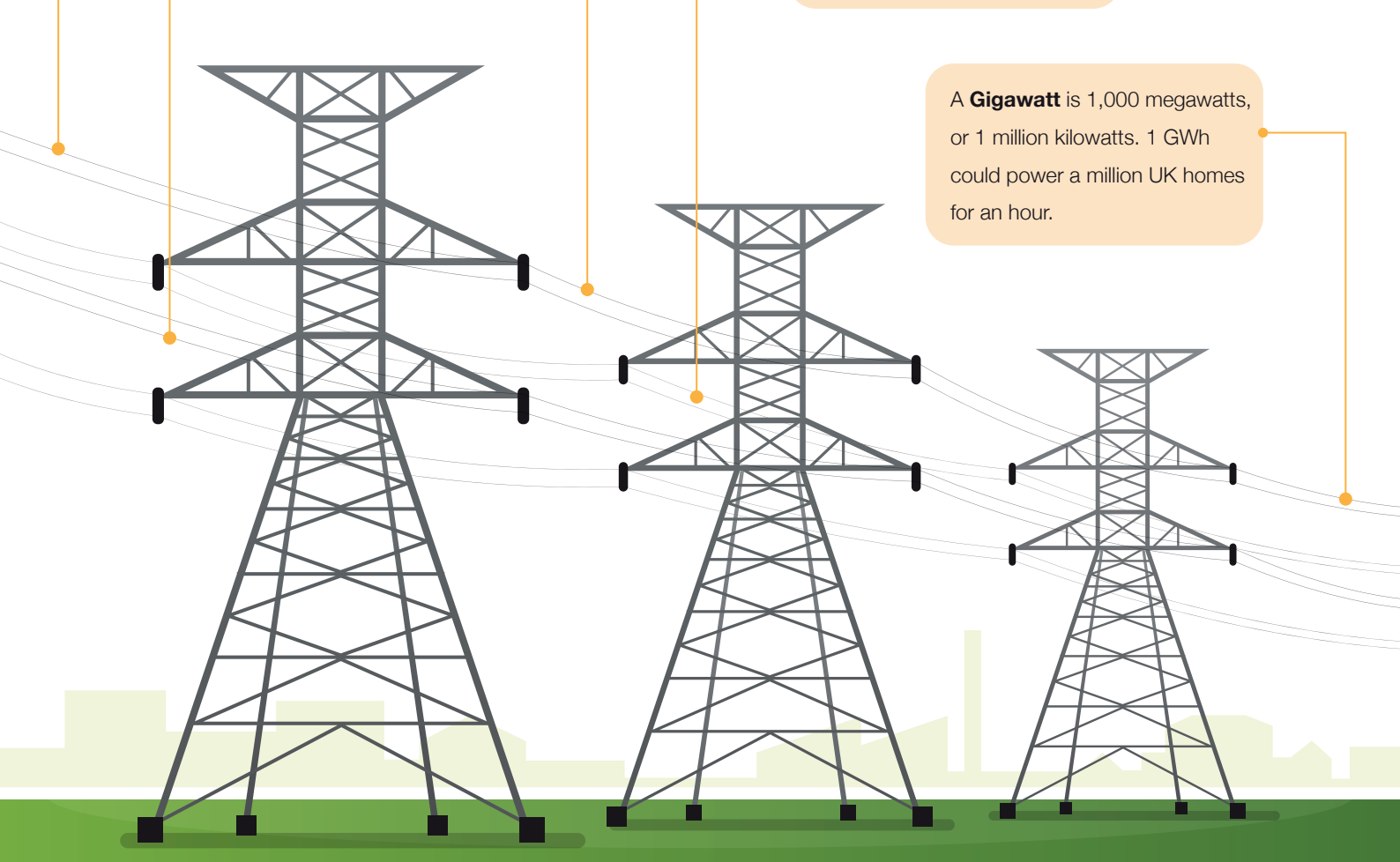
When using electricity, power (KW, MW or GW) is the rate which an appliance uses energy. Everyday appliances measure this rate in kilowatt-hours (KWh) – i.e: how many KWs it needs to work for one hour.

1 **KWh** of electricity is enough to run a vacuum for an hour, or a TV for ten hours.

The average UAE resident uses 20-30 KWh of electricity per day. In comparison, people in India as an example, use roughly ten times less than this (2.5KWh per day).

A **Megawatt** is 1,000 kilowatts. 1 MWh could power around 2000 UK homes for an hour.

A **Gigawatt** is 1,000 megawatts, or 1 million kilowatts. 1 GWh could power a million UK homes for an hour.



WHAT CAN YOU POWER WITH ONE MEGAWATT?

Provide electricity for an average home for

1.2 MONTHS



3,600 MILES

driven by an electric car



Two 60-watt light bulbs continuously for **1 YEAR**



Cool two refrigerators for **1 YEAR**



ONE KILOWATT-HOUR IS ENOUGH TO POWER

Watch television for **10 HOURS**



Run a vacuum for **1 HOUR**



Wash **12 POUNDS** of laundry

