

Can efficiency power sustainability?

Every delay has a carbon cost

Delayed data, sluggish grid responses, and slow system optimisation keep fossil fuels running longer than needed. A recent study of the U.S. and Canadian grid found that latency in development and decision-making directly increases both carbon output and energy costs.¹



9%
rise in gas- and coal-fueled generation when transmission is delayed¹

14%
increase in system congestion, reducing grid efficiency and resilience¹

\$28 billion
annual increase in energy costs — a 4% jump in national spending when generation is delayed¹

Milliseconds might sound like a technical detail, but they're often the difference between saving energy and wasting it.

The sustainability latency gap

Enterprises talk about emissions, but rarely about the timing of emissions. This oversight creates the **sustainability latency gap**: the divide between the speed we have and the speed a low-carbon world demands.



Energy that could have been sourced from renewables gets drawn from fossil reserves

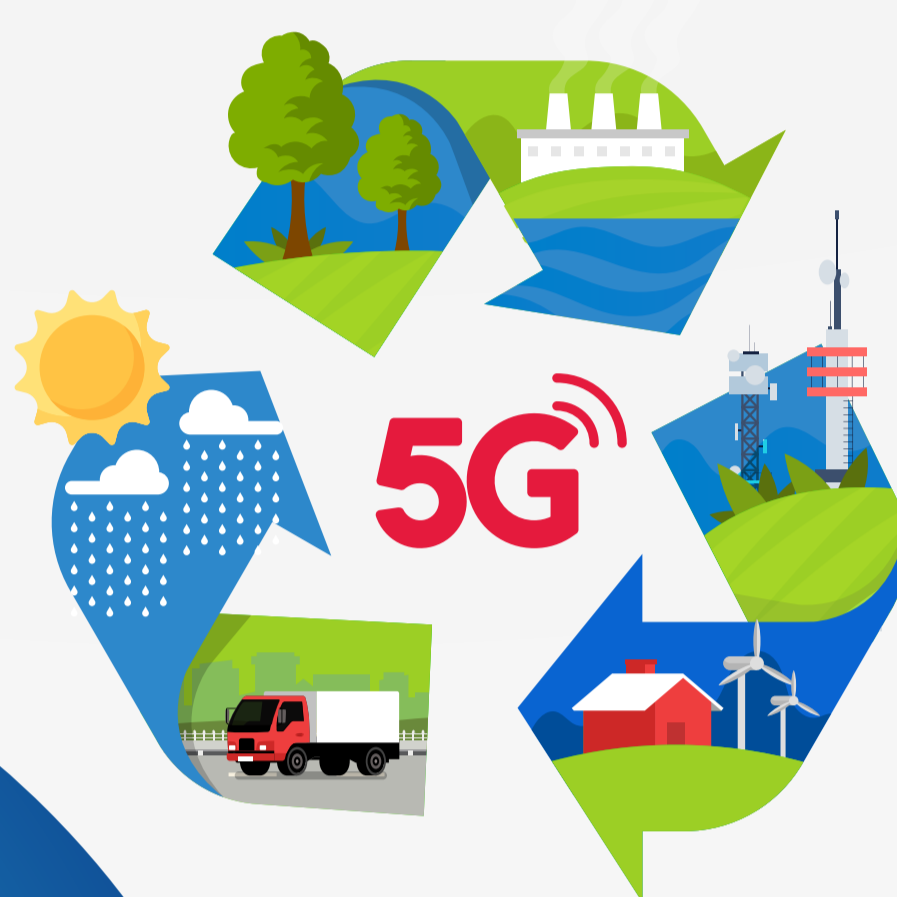
Resources that could have been conserved are consumed

Emissions that could have been avoided get released into the atmosphere



To close the sustainability latency gap, data systems must process and respond as fast as possible, ideally in real time.

How 5G network can change the equation



High performance in technology systems depends on how fast they can react. A grid balancing power. A truck rerouting to save fuel. A factory line adjusting to avoid waste.

When the signal moves slowly, the system does too and emissions keep rising. That's what latency means for the planet.

With 4G, it takes about 200 milliseconds for data to travel and trigger action. **With 5G, it can happen in just 1 millisecond.** That single heartbeat of time decides whether a machine powers down in time or keeps burning fuel unnecessarily. **The Exponential Climate Roadmap says digital tech like 5G could cut fossil fuel emissions by 15% by 2030.**³

5G has the potential to:

Operate equipment remotely, avoiding unnecessary travel or idling.

Capture and act on detailed energy data in real time.

Support the reduction of CO₂ across logistics, buildings, mining, manufacturing, and agriculture.



From faster networks to smarter decisions

When 5G is paired with edge computing, data no longer travels long distances for analysis; it's processed where it's generated. That means decisions can be made instantly.

Logistics
Rerouting freight before congestion builds to reduce idling.

Agriculture
Triaging irrigation needs before a drought escalates.

Energy
Balancing grid loads before demand peaks.

Each millisecond saves compounds to avoid resource use, energy strain, or emissions that would otherwise occur. **A path to net zero runs through real-time energy intelligence.**

5G underpins smart grids and smart meters that continuously monitor supply and demand, keeping renewable power flowing efficiently.

By enabling virtualised, decentralised energy networks, **5G helps replace today's centralised, loss-heavy systems** with ones that adapt instantly to local conditions.

Precision networks for precision impact

5G brings accuracy to how industries use energy and resources. With network slicing, it can be shaped to fit each sector's sustainability priorities.⁴

Industrial automation
Control robotics and production lines with minimal latency to reduce energy waste.

Connected IoT
Optimise traffic and logistics systems in real time to cut fuel consumption.

Smart energy
Ensure renewables stay synchronised with demand across distributed grids.

Tailored slices give enterprises the performance edge needed to reduce operational wastage and shrink their carbon footprint.

Closing the latency gap with Singtel

Singtel 5G+ gives enterprises the foundation to move faster and work smarter. With speeds far beyond 4G, ultra-low latency, and higher bandwidth, it supports operations that depend on instant response and reliable data flow.

The 700MHz spectrum extends coverage indoors and across remote sites, keeping systems connected even in hard-to-reach places. That consistency helps reduce downtime, energy waste, and the need for resource-heavy workarounds.

From real-time robotics and connected logistics to smart infrastructure and remote operations, Singtel 5G+ helps enterprises respond at the pace the planet needs.



Unlock ultra-low latency for your net-zero goals with Singtel 5G+

[Talk to us now](#)

References

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