



COMMUNITY INFORMATION SHEET

# Electromagnetic fields (EMF)

*Power-frequency magnetic fields, the science, and what to expect*

## What is EMF?

Anything that uses mains electricity creates low-frequency magnetic fields — your fridge, wiring and hairdryer included. Larger sources are power lines, substations and transformers. A data centre brings this equipment together, so people understandably ask about it. These fields are measured in milligauss (mG).

## What does the science say?

There is a **weak statistical association** between very long-term exposure to higher household fields (above about 3–4 mG on average) and childhood leukaemia, which is why the fields are classed “possibly carcinogenic.” But the link is **not proven**, has no known biological mechanism, and recent research shows it weakening. The World Health Organization and ARPANSA advise there is no established health risk at the levels people normally encounter.

Situation	Typical magnetic field
Inside a typical home, day to day	0.1 – 2 mG
The level discussed in health studies	about 3 – 4 mG (long-term average)
Right at a substation fence or wall	about 10 – 20 mG — dropping to background within a metre or two
The official safety limit (ICNIRP / ARPANSA)	2,000 mG

**The most important fact:** how much field reaches a home depends on distance and design — not on how big the data centre is in megawatts. At a well-set-back industrial site, fields at the nearest homes are expected to be at everyday background.

## What good practice looks like

- Fields at nearby homes, schools and public areas designed to be as low as reasonably practicable — preferably below 3–4 mG.
- Independent EMF modelling before approval (at full size), with baseline and post-commissioning measurement.
- Substation and high-current equipment sited centrally and away from boundaries, with good cable design.
- Results reported publicly in plain units (mG and  $\mu$ T), with mitigation if anything exceeds the target.

**Want to know more?** Your local council, the EPA Tasmania and ARPANSA publish further information. This sheet is general information, not medical, legal or planning advice; figures are indicative and a specific proposal is confirmed by qualified assessment.