



Office of the Prime Minister's Chief Science Advisor  
Kaitohutohu Mātanga Pūtaiao Matua ki te Pirimia

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INFORMATION SHEET: 5G in Aotearoa New Zealand - Infographics

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<b>Notes:</b> -				

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# 5G roll out

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## Trials



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## Barriers to use

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Availability in location



5G capable device needed

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# 5G Frequencies

Existing radio bands and current use examples:

Lower  
frequency

FM radio stations  
(30 MHz – 300 MHz)

Existing cell  
networks  
(300 MHz – 3 GHz)

Vehicle radars,  
satellite comms  
(3 GHz – 30 GHz)

Higher  
frequency

Planned 5G frequencies: Rural trial Roll out Future

# 5G Benefits

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**Faster data speeds**



**Quicker response**



**More people & devices online together**



**Larger network capacity**

# Radio Waves & Radiation



Radio waves send out energy (radiation)



Very high exposure can cause heating (like a heater or lamp)



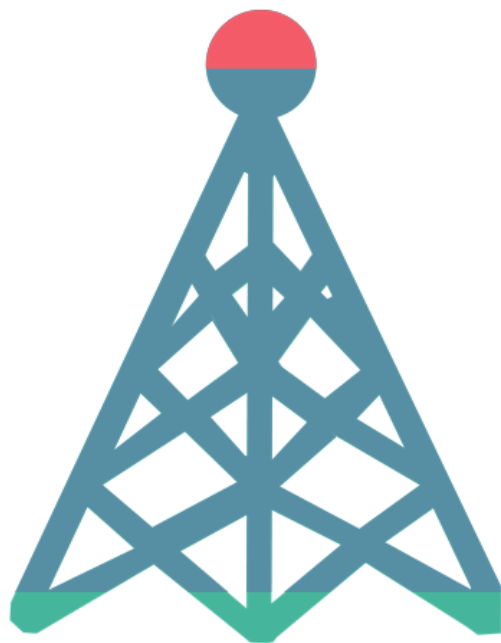
Strict NZ standards prevent us from being harmed



NZ monitors international developments and ensures that exposure standards keep us safe

# NZ Safety Standards

Potential for  
negative  
health effects



50x  
safety  
margin

NZ  
Exposure  
Limit



# Exposure at NZ Cell Sites

**NZ Exposure Limit**



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**Rarely 1-10% of limit**

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**Most <1% of limit**


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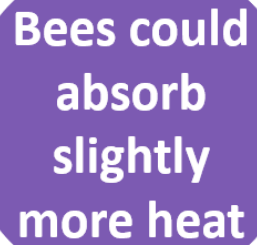
‘No health risks with weak electromagnetic fields have been established...’



# Bees and 5G



If more of the network uses higher frequencies...

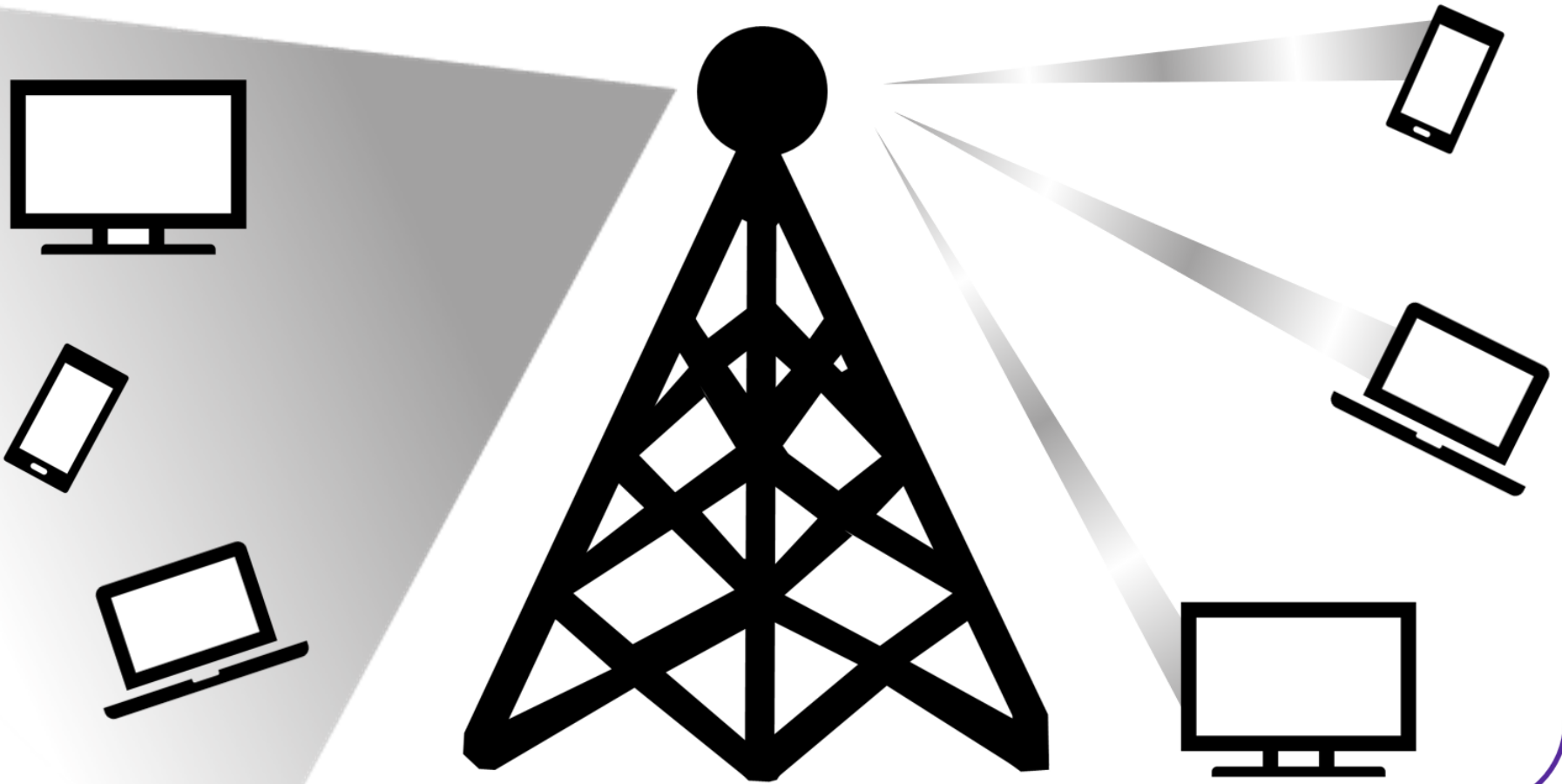


Bees could absorb slightly more heat

**Is this an issue?**  
At exposure levels under the NZ standard this is unlikely to harm bees



# 4G vs 5G



# International Agency for Research on Cancer: Classifications & Examples

**Carcinogenic**



**Probably carcinogenic**



**Possibly carcinogenic**



**Not classifiable**

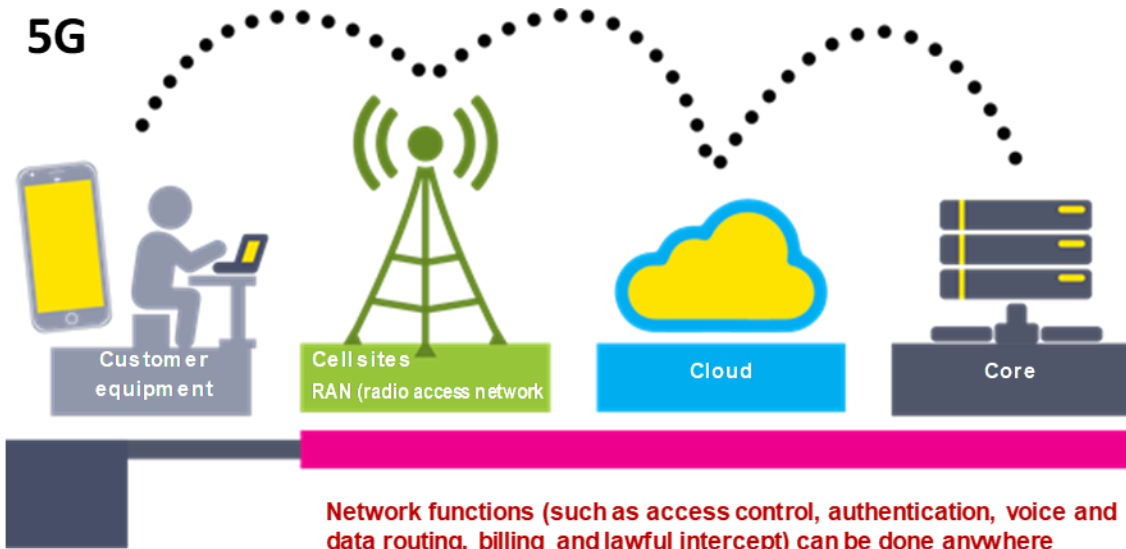


**Probably not carcinogenic**

No substances have been classified as probably not carcinogenic

‘...no adverse health effects have been established as being caused by mobile phone use.’

5G



4G

