

The GSMA MWC Barcelona logo, consisting of the GSMA logo (a red bar chart) and the text "MWC Barcelona" in white and red, with the dates "28 FEB - 3 MAR 2022" below it.

5G IOT SUMMIT

# CAN 5G & IOT BE GREEN?

Stephen Douglas  
Head of Market Strategy

# Our house is on **FIRE**

Earth is likely to reach the **1.5°C warming limit** in the early 2030s

(Intergovernmental Panel on Climate Change (IPCC) 2021 report)

**Weather Extremes**  
growing in intensity & frequency

**Risk to natural and human systems**

**Net Zero**  
CO<sub>2</sub> emissions needed sooner to stabilize climate change

UN chief warns of **'point of no return'**

- U.N. Secretary-General Antonio Guterres, Dec 2<sup>nd</sup> 2019 -

# Along comes **5G** (concerns)



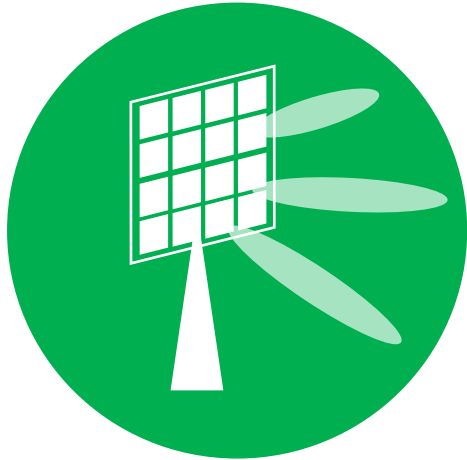
**300%** more Base Stations  
**10X** more Antennas  
**1000's** more Edge Servers  
**100's** more Data Centers  
**Billions** more Devices



more Power Consumption  
& CO<sub>2</sub> Emissions ????

Can 5G be a **GREEN** tech?

# Well....5G is focusing on **energy efficiency**



## NR Efficiency

*Idle / sleep mode operations*

up to **70%** reduction  
in energy  
consumption

(NEM)

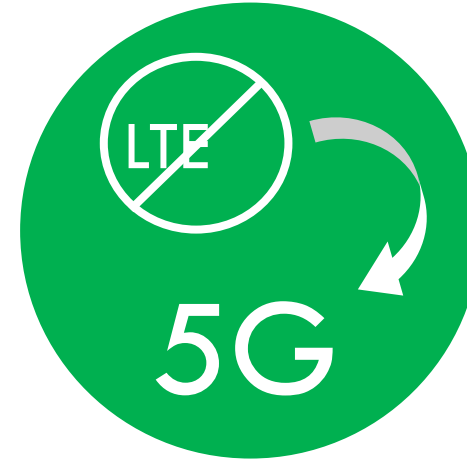


## RAN Optimizations

*Chipsets & Liquid cooling*

up to **80%** CO<sub>2</sub>  
emissions  
reduction

(NEM)



## Switching from LTE

up to **70%+**  
network energy  
reduction

(NEM)



## Edge & NFV

up to **25%** less  
energy  
consumption

(RESEARCH BODY)

# But there are **BIGGER** challenges

## ICT Industry



0.86 Gigatonnes CO<sub>2</sub> emission annually.

Source: Gartner

~40% PCs & Monitors

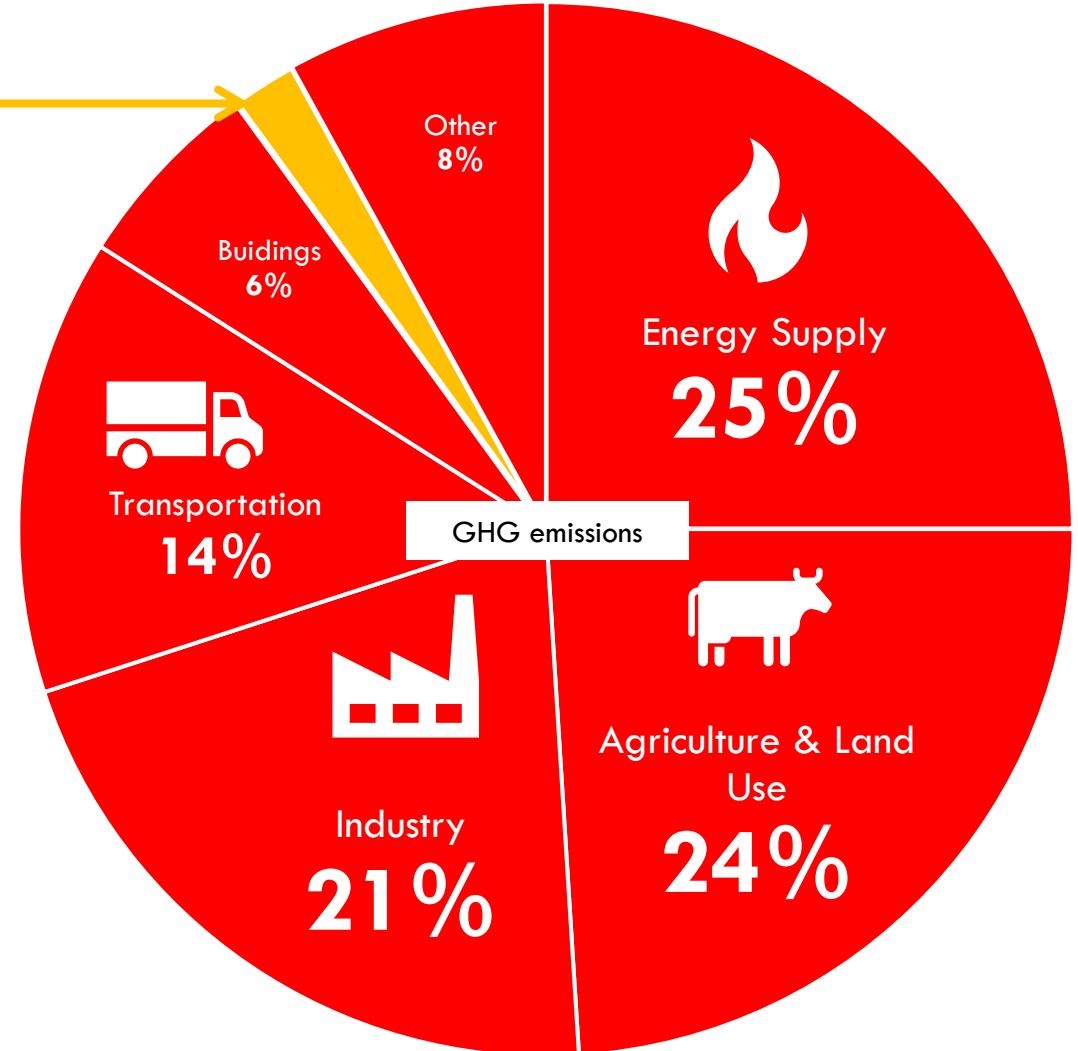
~24% Telecoms

~23% Data Centres

Source: ITU

2%-3%

GHG emissions



Source: EPA - United States Environmental Protection Agency

# The Industrial Opportunity



Process Monitoring



Process Automation



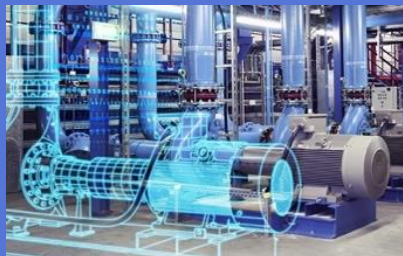
Remote Maintenance



Supply Chain Optimization

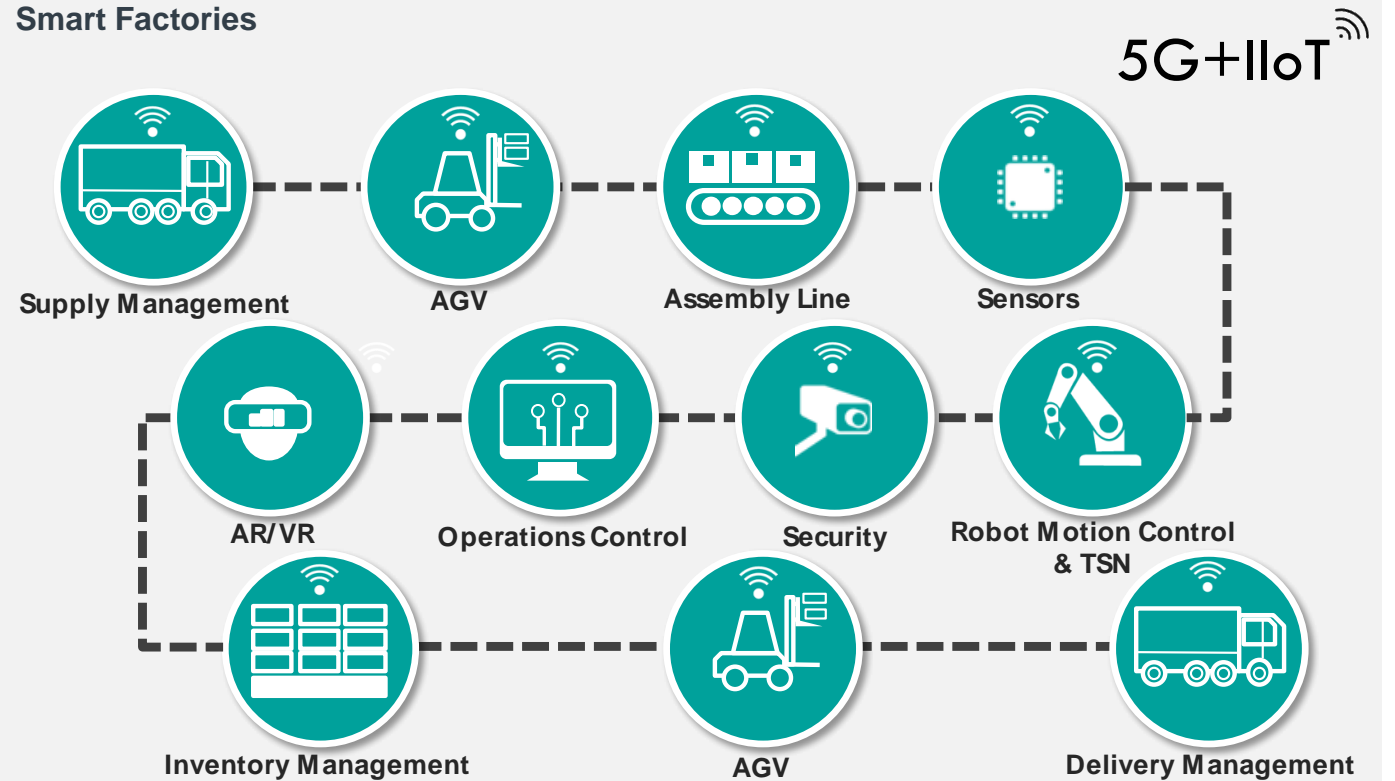


Precision Manufacturing



Digital Twins

## Smart Factories



POTENTIAL 20% REDUCTION IN ANNUAL ENERGY - Exponential Roadmap

# The Transportation Opportunity

Platooning

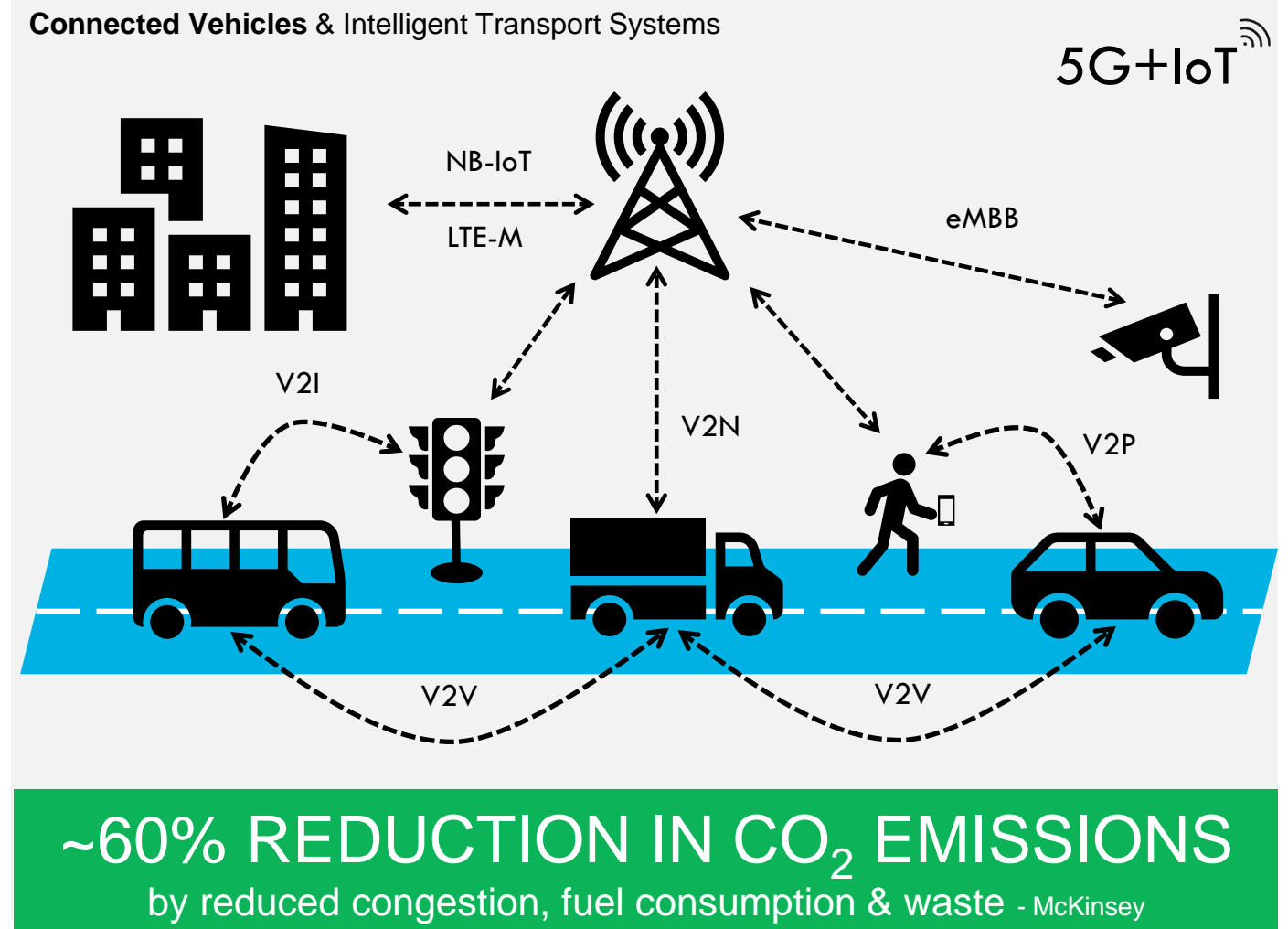
Extended Sensors

Remote Driving

Automated Driving

Big Data & AI

Digital Twins



# The Agricultural Opportunity



Precession Farming



Water Management



Pasture Management



Carbon Sinks



Vertical Farming



Methane Management

Smart Farming

5G+IoT

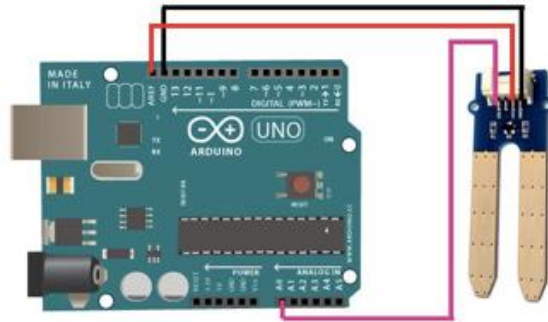
~7GT REDUCTION IN CO<sub>2</sub> EMISSIONS  
by 2030 via Precession Farming of RICE production – Exponential Climate Roadmap



# START NOW!



~74 gallons of water to produce one pound of avocados (to water & leach salts)



soil moisture sensors

## 75% reduction in water usage

Source: Spirent trial in San Diego

## Connected Avocado Farm

### Managing water consumption



### Using soil moisture sensors & automated watering



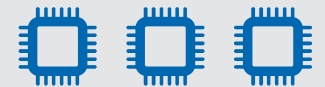
Cellular



Gateway



LPWA



Sensors (soil moisture & temp)



# Let's help put the **FIRE OUT**



**Leading by example**



**Enabling global outcomes**



**Aligning with civil society**

**Helping to limit global warming to 1.5°C**

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