



# Next Generation Power

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# Main challenges of the energy sector

## Global and local energy sector facing a series of different challenges

Limited natural resources for the traditional energy production (fossil fuels)

Energy waste and storage limitations

Unstable cost of production, driving market turmoil in a global scale

New uses of electricity power high on the global agenda (i.e., electric cars)

Overpopulation and growing demand in existing electricity production sources

Green energy targets towards a carbon neutral world

Poor and outdated infrastructures (lack of visibility and control)

Unexplored renewable energy options and the energy transition

Poor distribution system (lack of visibility and control)

Public policy and regulatory framework at a changing environment

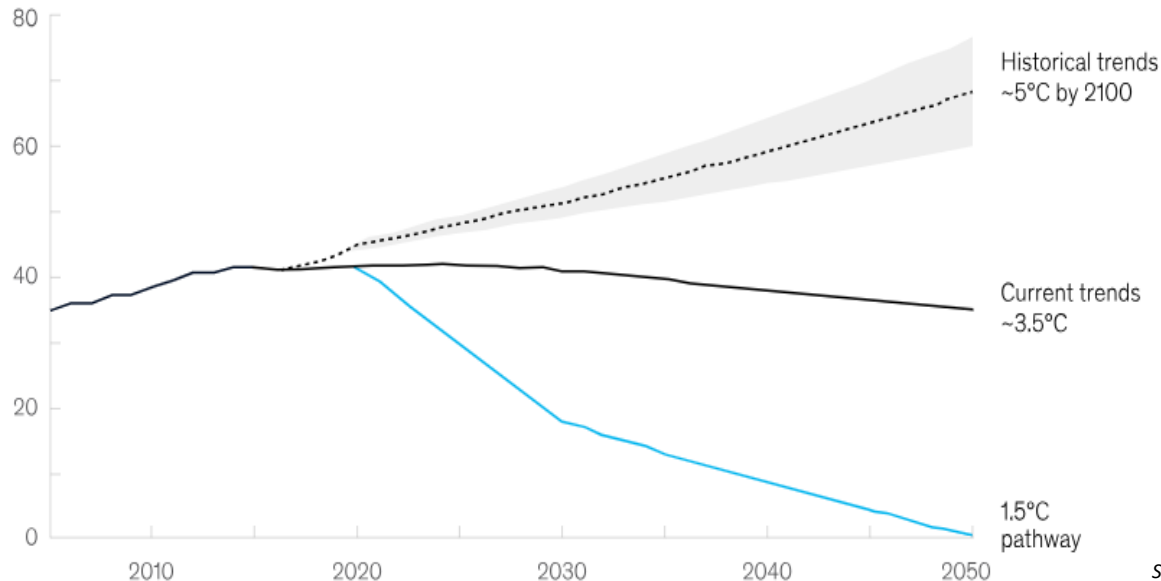
Source:

- *Market insights*
- *Accenture : Fuel for Innovation: Greece's race to 5G*

# Carbon dioxide emissions would need to reach net zero by 2050 to avoid the worst effects of climate change...

To avoid the most dangerous and irreversible effects of climate change, the world would need to **limit global warming to 1.5 degrees Celsius**. That means carbon emissions would need to reach **net zero by 2050**, a significant deviation from the path we're on now.

## Projected global CO<sub>2</sub> emissions, billion metric tons of carbon dioxide (GtCO<sub>2</sub>) per year



- **Rapid declines in CO<sub>2</sub> emissions** would be required to reach a 1.5°C pathway under various implementation scenarios
- All the 1.5°C scenarios would require major **business, economic, technological and societal shifts**—each enormous in its own right, and with intricate interdependencies.

Source: McKinsey

# What about leverage? The major drivers of CO<sub>2</sub> emissions glidepath..

Power and industry are major energy consumers and together generate about 60 percent of CO<sub>2</sub> emissions.

Share of emissions<sup>1</sup> per energy and land-use system, 2019, %



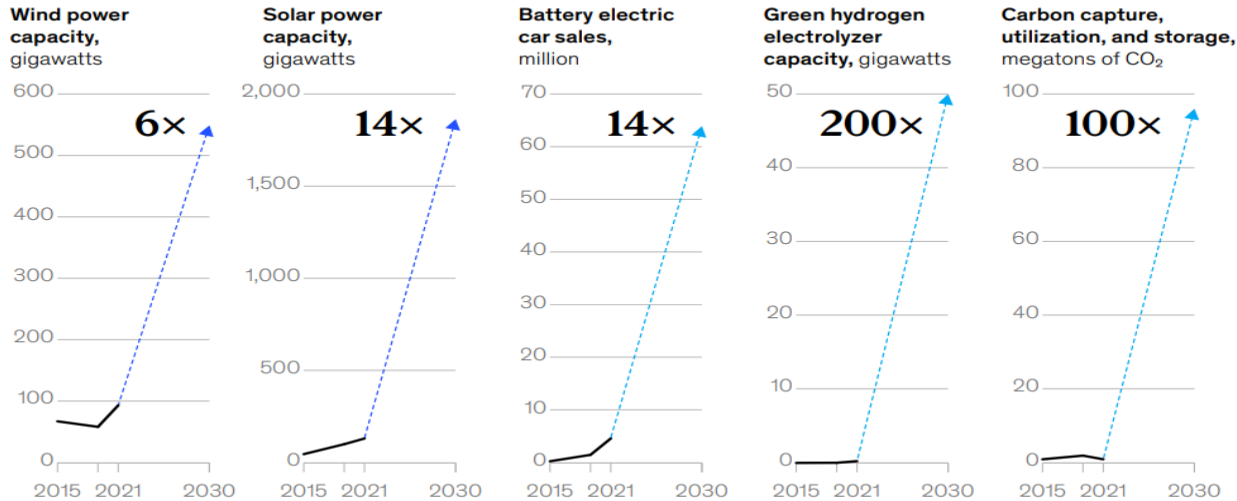
- More than 45 % of global CO<sub>2</sub> emissions are produced by energy or energy related industries.
- More than 80% of global CO<sub>2</sub> emissions derive from 70 countries, also generating ~90% of global GDP.

Source: McKinsey

# What about scaling?

To reach net-zero targets, a set of existing climate technologies would need to scale exponentially by 2030.

Annual deployment of climate technologies needed,<sup>1</sup>  
multiples of current supply



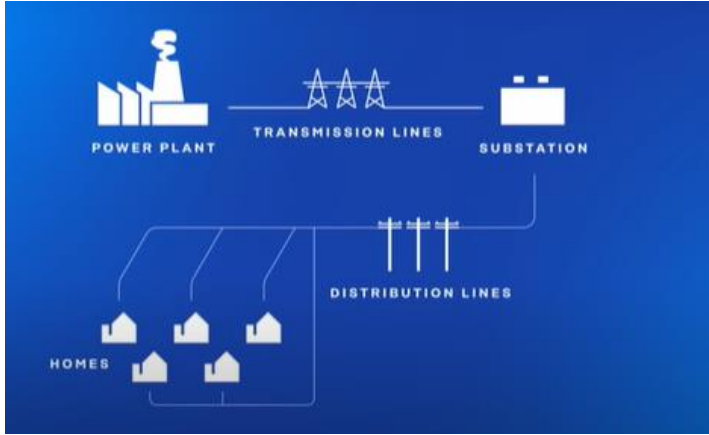
<sup>1</sup>Based on the McKinsey 1.5°C achieved commitments scenario, which represents existing commitments from companies and policies from countries. To conduct this analysis, we estimated the current trajectory of supply of key climate technologies (based on historic and current activity), factored in current emissions-reductions commitments from countries and governments, and assessed the supply of these technologies that would be required by 2030 to stay on track for a 1.5° pathway.

Source: EV-Volumes; IEA; International Renewable Energy Agency; McKinsey analysis

- The transition cost to net-zero targets expected to reach ~275 T (US Dollars) , ~ 9,2 T US Dollars per year an uplift of ~ 3,5 T US Dollars for run rate.
- The additional new grid costs expected to increase the **cost of energy** ~25% till 2040 where it is expected to decline
- ~8M new jobs in renewables, hydrogen & bioenergy

# The surprising key to a clean energy future : Transmission

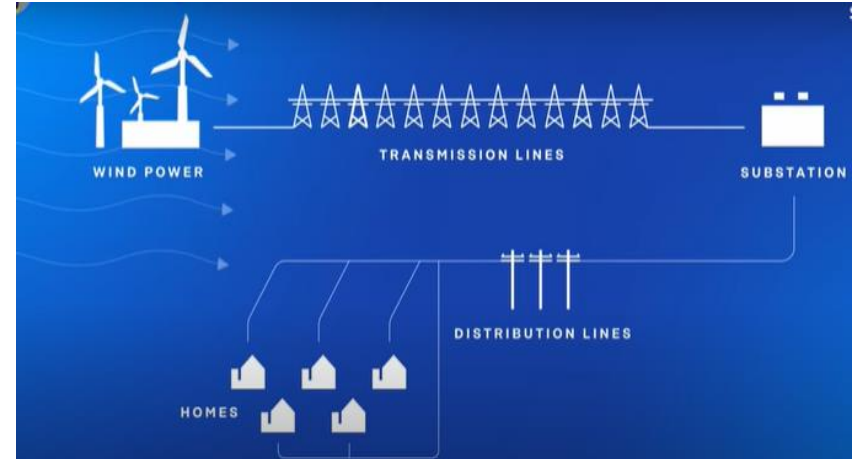
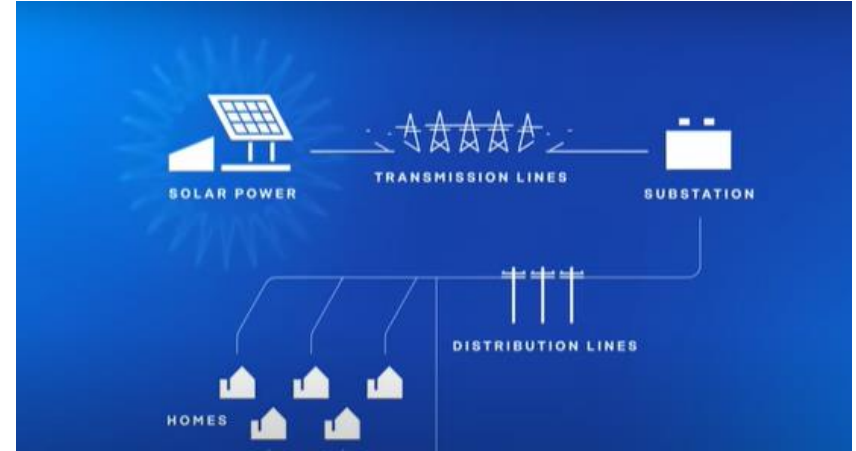
“ If you care about climate change, you should care about transmission...”



- Traditional plants located close where the demand was close
- Plants are now located in far greater distances (Renewables)
- Requirements for highly connected and automated grid

Source:

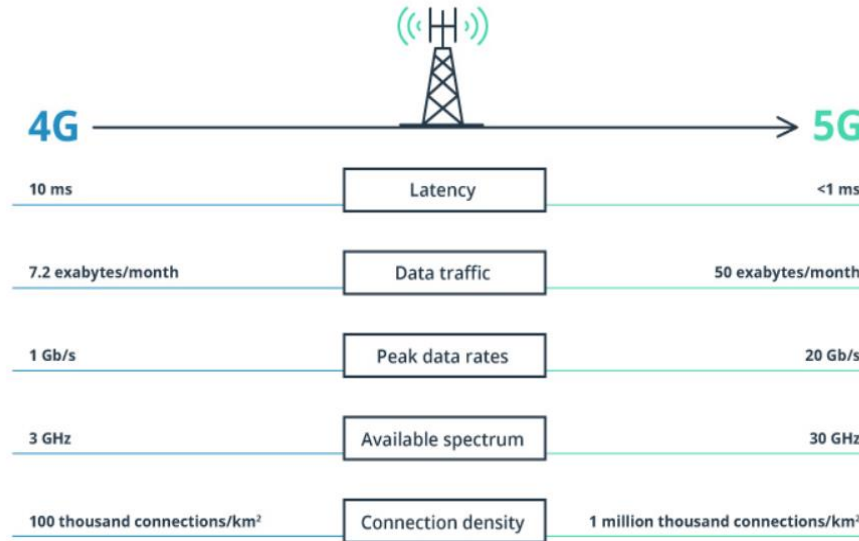
- Breakthrough Energy Org.



# Transmission = 5G ?

- **Main performance characteristics** : The 5<sup>th</sup> generation of mobile networking technology, working on the same principles as 4G , however it comes with **improved performance characteristics** and an **extensive functionality 'over and above'** just mobile internet, **providing a higher level of scalability and flexibility**.

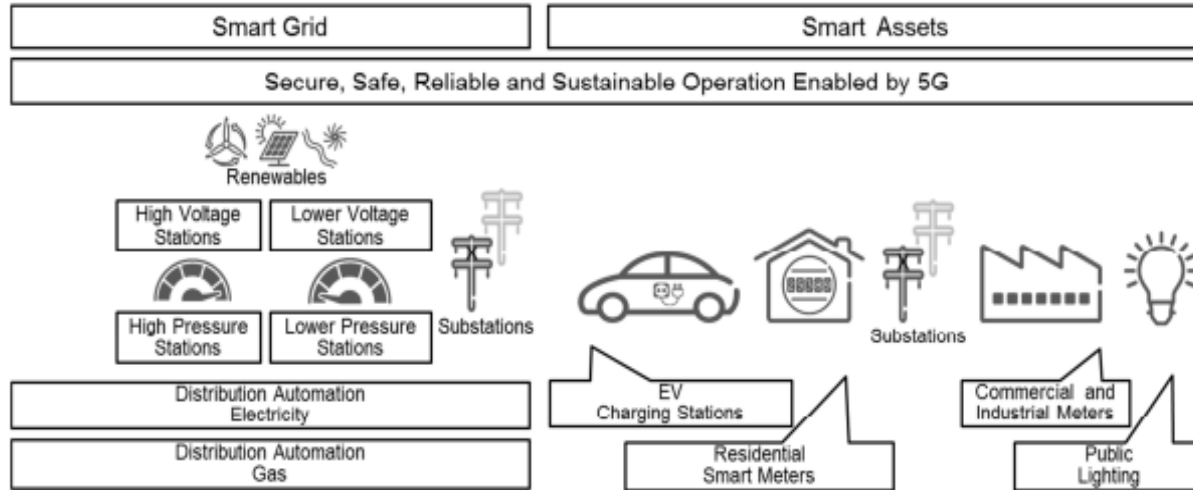
Comparison of key 4G and 5G parameters



Source: Qorvo – Getting to 5G : Comparing 4G & 5G System Requirements

# 5G powered smart grid, a requisite for the energy transition..

- Energy and Utility sector are at the forefront of a sweeping energy transition that will radically alter existing business models and customer interactions.
- **Besides optimization of existing power networks, 5G enabled grids are essential for the transition to renewable sources:**



Source: 5G Infrastructure Public Private Partnership

## A Zoom-in Renewable production requirements:

- **Production is uncertain and variable daily** based on weather conditions per location (i.e., sun, wind)
- **Production is much more distributed** in the landscape than traditional power plants (i.e., fossil fuel or hydroelectric or nuclear)
- **Real-time dynamic routing of electricity flows** needed to support optimized use of renewables and black-outs prevention
- **New electrical equipment and continuous (remote) supervision** and configuration needed
- Advanced data processing
- Advanced security



# Summing up, use cases for energy and utilities powered by 5G

- **5G technology** has the capability to **connect a massive number of devices** and **provide visibility and control over a diverge and dynamic landscape on energy sources.**

Smart grid 5G enabled technology	Smart meters for private or industrial properties	Remote monitoring of energy sites	Digital asset management
<ul style="list-style-type: none"><li>• Energy management- monitoring and <b>forecasting of demand</b></li><li>• <b>Reduction of production cost</b> by efficiently balancing the required energy load</li><li>• <b>Optimization of investments</b></li></ul>	<ul style="list-style-type: none"><li>• <b>Real-time monitoring</b> of energy consumption</li><li>• <b>Efficient planning and control of energy costs</b> of consumer or corporate energy spending</li></ul>	<ul style="list-style-type: none"><li>• Monitor the health and <b>readiness of the equipment</b></li><li>• Detect parameters deviation in a large-scale</li><li>• <b>Remote control and configuration of equipment</b></li><li>• Reducing system faults and <b>optimizing restorations</b></li></ul>	<ul style="list-style-type: none"><li>• Eliminate different data formats across the network</li><li>• Unification of energy data statistics and advanced analytics requirements</li><li>• Enhance the data management and utilization process</li></ul>

# Retail use case of energy and telco bundling

- Advanced utilities offered to the retail market merging economy, convenience and piece of mind

### Customer layer:



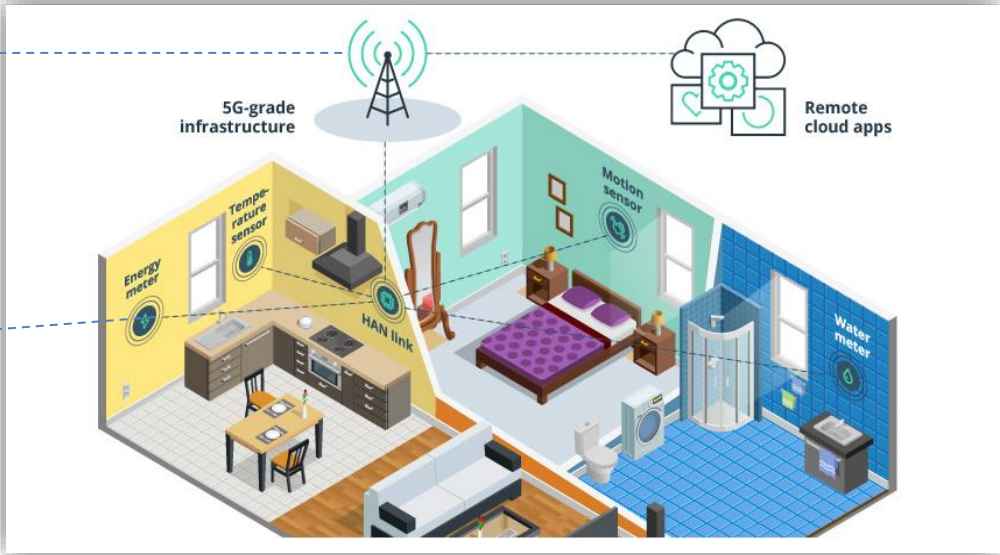
### Telco subscription



### Energy Subscription -Smart Meter

- Data Collection
- Usage -Charges monitoring
- Alerts and Remote actions
- Consumer Interface (Self-Care)

### In House Deployment of Smart Meters



### Service Provider layer:



- Advanced customer profile data
- 'Bundling' Telco and Energy
- Improved value proposition
- Improved CEX
- Improved Customer Lifetime Value
- Portfolio margin optimization



# Volton Group of Companies

## Milestones and highlights

- **2016: licensed** for **Electricity Supply**
- **2017: commenced** the Supply of Electricity to consumers
- **2019: acquired “KEN” energy company**, commenced activities in the **Natural Gas** sector
- **2021: Licenced** for Telecommunications
  
- **350+** experienced executives
- Modern network of **25 stores**
- **120,000+** customers

## Dynamic Infrastructure investments

- **Renewable ‘Green’ Energy Sources** and Guarantees of origin targeting production capacity of **~ 560+ MW**
  
- **Full xVNO development plan** in progress for **mobile** and **fixed telephony and Broadband**

## Our Vision

- **‘Green’ & Environmentally- Friendly**
- **Multiservice** provider:
  - **Customer Experience**
  - **Economy**



**Thank You**



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