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Energy in 2040-2050: markets to be transformed, but there's no silver bullet for climate crisis

Capgemini's white paper demonstrates possibilities and limitations of tech disruption in the energy market, as global population and energy consumption continue to rise

Paris, February 07, 2020 – Capgemini has today published a new white paper "The Future of Energy" that looks ahead to the energy market in 2040-50, exploring notably the potential for technology to help mitigate the rising energy demand of a growing global population – an additional 1.7 billion people on the planet are expected by 2040[1], leading to a 25% rise in energy consumption and new climate impacts.

The white paper predicts that by 2050, the energy landscape will be entirely redesigned due to the impact of new regulations, changes to customer mindsets, as well as combination of deep / digital technologies and blurring industries.

Key conclusions include the interrelations of about 20 key factors, influencing the future, and:

- Despite the commitment by 59 countries, states and provinces to rely on 100% renewable energy by 2040, the abandonment of fossil fuels by this time is very unlikely. While political support and falling costs will continue to make renewables the fastest-growing segment, **a 100% renewables mix would demand a radical overhaul of infrastructure – including the installation of solar PV and wind farms at 4-5 the per capita rate of China, currently the world leader in renewable capacity.** A reasonably optimistic scenario - but with issues to be tackled - is for fossil fuels to fall to 20% of market share by 2040 (from 65%), while renewables rise from 6% to 38%.

- Improvement in energy intensity, the energy spent by every $1,000 of GDP, is set to hover between 1%-2.9% per year, short of the 3-4% needed to comply with global sustainability targets. **Achieving the more aggressive target would require a radical shift towards a circular economy and replacement of short-life, high tech solutions with energy savvy tech alternatives.**

- Technology will bring about dramatic change within the market, delivering between $213-$830bn in cost savings through the use of intelligent automation. However, no major breakthrough in energy technology can be expected by 2050, although it is likely that a 'rescue by technology' narrative will remain dominant in a society that continues to live by intensive energy consumption. **Energy will cease to be a discrete subject and will become defined entirely by its final use.** Talk will be of mobility, lighting, heating or cooling and charging – with all these uses labeled and certified according to their environmental impact.

[1] Source : United Nations https://www.un.org/en/development/desa/population/index.asp

Philippe Vié, Global Head of the Energy and Utilities sector at Capgemini, says: "*The energy landscape in 2050 will be shaped by the collective choices of providers, consumers and Governments made up of about 20 key factors. The extent of our global progress towards a carbon neutral future will depend on these key factors that are outlined in this report, from energy demand and the fossil/renewable mix to regulation, development of deep and digital technologies as well as customer changes.*"

He adds: "*The idea that technology alone will avert the climate crisis is wishful thinking. There is no silver bullet, only decisions to build the infrastructure, develop the regulation and encourage the changes in consumer behaviour will create a sustainable future.*"

The Future of Energy point of view published today leverages years of expertise developed from the **World Energy Markets Observatory**, the annual flagship publication by Capgemini that monitors the main indicators of the electricity and gas markets in North America, Europe, Australia, South-East Asia, China and India, and reports on the developments and transformations in these sectors.

Key topics covered in the new whitepaper:

- Population growth and economic development lead to growing demand for energy, transportation, construction that increases Green House Gas emissions
- Multiple interrelated parameters are to be considered to draw the future energy scenarios within a region
- Progress but no deep technology disruptions expected by 2040-2050 when Carbon neutrality is needed
- Combination of deep and digital technologies could leverage potential important gaps
- Complete renewal of players and ecosystems should dissolve energy supply in larger value propositions beyond energy to populations and residential, commercial as well as industrial energy consumers

For more information and to download a full copy of the report, click here.

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