

# How 5G and AI are helping Shanghai become a more sustainable city

Maddyness is collaborating with environmental publication Ours to Save, whose latest podcast episode, 'Cities in crisis: towards greener urban planning', is on Spotify now. To mark this, we investigate how the winner of the 2020 World Smart City Awards, Shanghai, is harnessing technology to meet emissions targets.

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The World Smart City Awards (awarded November 2020) went to cities 'for developed global strategies combining projects, initiatives and policy implementations for their citizens'. How is the Chinese city of Shanghai helping the world become a more liveable and sustainable place?

China itself is currently responsible for a quarter of the world's greenhouse gas emissions, but recently pledged to achieve carbon neutrality before 2060. The nation doesn't tend to set targets unless it plans to meet them - for example, it met its 2020 emissions goals three years early. An integrated smart cities plan will be - and already is - a key part of how it does this, because building houses and offices constitutes a large part of China's overall emissions.

Already, hundreds of 'eco city' developments are cropping up across the country - as explicitly outlined in the 13th Five-Year Plan (2016-2020). There have been several complications, however. Tianfu Park City, near Chengdu, boasts 70% blue and green space, but its construction involved controversial

demolition and there are concerns it won't attract enough residents.

Shanghai's own 'Smart City Plan', which started in 2016, is now in its final year. At its core, it revolves around digitisation and the rollout of 5G and artificial intelligence to make the city better-functioning, greener and more liveable.

It won this year's World Smart City Awards for meeting a series of ambitious digital infrastructure targets - as well as taking big steps in industrial and environmental strategy more generally.

Undoing years of heavy pollution and environmentally destructive policy will require a lot of work. What specifically does the mass rollout of 5G and other tech mean for Shanghai's greener future? In itself, 5G uses less energy than 4G and transmits far more data. A good start!

Yanfan Chen, director at Shanghai Unicom Smart City Research Institute, says 5G's low latencies are powering efficiency, which in turn reduces emissions - and innovation, from self-driving cars to smart factories.

She says,

*"It can also enable big connections. For every mile we have one million connections and with this capacity we have a much smarter city. This is a city that can see and think for itself. Everything in the city is intelligent now."*

According to Columbia Earth Institute, "5G technology with the Internet of Things will be able to increase energy efficiency, reduce greenhouse gas emissions and enable more use of renewable energy."

"According to the UN, 68 percent of the world's population will live in cities by 2050. City governments and businesses are looking to 5G, AI and IoT technology to create smart cities where sensors, cameras and smartphones will be linked; the connectivity and speed of these networks will enable cities to be better managed and more efficient and sustainable."

To give an example that's already in motion: Shanghai has adopted the Alibaba-designed 'City Brain', which uses real-time data to optimise public resources. In the case of roads, for instance, pollution and traffic are reduced because the system runs more efficiently overall. There's less sitting in traffic, and therefore less fumes. Travel time is reduced – and public transport becomes quicker, easier and more popular.

*Cities in crisis: towards greener and more resilient urban planning is up on Spotify now, with Pushpa Arabindoo (Codirector, UCL Urban Laboratory), Ray Hopkinson (Creative Partner, Hubbub), and HY William Chan (Forbes 30 Under 30 urbanist and design strategist).*

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