



Gain visibility and control. Helping enterprises and local authorities achieve their air quality and net zero targets – today.

Improving air quality is a major corporate priority – but most large businesses set clean air and net zero targets for the distant future. With legislative, investor and consumer pressure increasing, enterprises need to show progress today.

Here's how.

Enterprise clean air and net zero targets typically focus on increasing building efficiency, reducing power requirements for manufacturing and offsetting carbon – but they struggle with a major pollution source: logistics transportation.

Reducing air pollution and greenhouse gas emissions is a major priority for everyone, especially as COVID-19 increases scrutiny on respiratory health and urban air quality.

A recent Harvard University study found an increase of only **1 $\mu\text{g}/\text{m}^3$** (microgram per cubic metre) in PM2.5 is associated with an **8% increase** in COVID-19 death rate, for example.

But exploding demand for deliveries, especially in urban areas is contrary to that. Enterprises with large and complex logistics operations face growing pressure to meet environmental targets rather than sail past them.

Long-term, the solution will depend on collaboration across the last mile ecosystem, major infrastructure change, and changes in urban design. But short-term, pressure to show progress now continues to grow.

Keep reading to learn about a solution that empowers enterprises to take immediate action to meet air quality targets, by gaining visibility and taking control over logistics transportation pollution and emissions.

Pollution from logistics transportation is growing

Everyone's familiar with the effects of greenhouse gasses on the environment. We're less familiar though with the effects of poor air quality on health. Outdoor air pollution causes 40,000 deaths each year in the UK, costing around £20bn and driving many major health conditions.¹

Short- and long-term exposure to NOX, PM10 and PM2.5 has been directly linked to cancer, asthma, stroke, heart disease, diabetes, infertility, obesity and lung infection.² It's also been linked to adverse birth conditions³ and can stunt children's lung growth by double-digit percentage points.⁴

These problems are especially critical in urban areas, where emissions are higher and populations are denser. In the UK, 56 million people live in urban areas – five times more than live rurally.⁵

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Plus, the United Nations estimates that **two-thirds of the world's population** will live in urban areas by 2050⁶ - this is an issue with global scale.

Urban logistics – that is, the movement of goods into and throughout urban centres – is a major contributor. And only getting more so, as cities get denser and deliveries increase. Plus with COVID, there are fewer small, private vehicles picking up purchases and many more medium and large commercial vehicles making multiple deliveries.

The World Economic Forum states that the number of delivery vehicles in the largest 100 cities globally will increase by 36% over the next decade without intervention.⁷

That's a long-term trend but it's been accelerated by COVID-19. Royal Mail report that 45% of adults have been receiving more parcels since lockdown, for example.

It's looking likely the pandemic will change people's behaviour for good too, with more than two-thirds of adults saying they'll continue their current frequency and spend online shopping after restrictions are lifted.⁸

Consumers want uninterrupted service, fast deliveries and well-stocked shelves. But at the same time, they expect clean, sustainable local communities. Large businesses have to meet those needs to survive and thrive.

But doing so is a tightrope – and pressure on enterprises to show evidence of progress towards publicly stated net zero and clean air targets is growing. Reputations are at stake.

What's being done to make urban logistics sustainable?

95% of businesses feel there are unique business challenges associated with operating in growing urban centres.⁹ 58% of businesses identify air quality as their biggest concern in the urban environment.¹⁰

But only 47% feel prepared to address these challenges.¹¹

The fact is, enterprises do recognise the scale and impact of the problem. The fact that 84% of large businesses have established environmental goals is testament to that.¹² But they're struggling to move the needle.

Some current tactics being explored can be found on the following pages...

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Sustainable vehicles for last mile deliveries

There's no doubt that sustainable vehicles – like cycles and electric vehicles – are part of the long-term solution for meeting air quality targets. Diesel-to-electric conversion and brand new electric fleets are both on the table.

However, there are limitations right now around power, resilience and availability, as well as cost barriers to large-scale adoption in the next decade. Plus there's the significant upfront environmental impact of creating batteries to consider too. Some studies suggest electric vehicles roll off the assembly line on day one with a CO2 footprint equivalent to 90,000 miles of driving.¹³

Off-hours/out-of-hours delivery programmes

Initiatives that see deliveries limited to off-peak hours do have potential, where they're possible. Often supply chains are so intensive, deliveries have to happen all day without pause. Off-hours programmes are also particularly beneficial to limiting urban congestion at peak times, like during the commute.

Realistically though, they're only moving the problem elsewhere rather than reducing emissions. So they do little to help enterprises meet clean air or net zero targets. Plus there's a significant issue of increasing noise between 21:00 and 06:00. And there's a commercial implication too – out-of-hours hours delivery means paying people out-of-hours rates.

Vehicle size restrictions

In some cities, last mile vehicle restrictions have been introduced – or exist naturally thanks to narrow streets and non-existent parking, like in Hamburg.¹⁴ In principle, replacing last mile trucks with localised micro-depots and smaller fleets does have potential. Especially where those smaller fleets are sustainable vehicles.

However, this means deliveries are severely limited in size and scale (as well as causing congestion thanks to more vehicles being on the road – another problem in itself).

Last mile tricycles work excellently for delivering small consumer packages, but not well at the normal urban scale. Tricycles can't deliver huge volumes of smaller commercial items or small volumes of industrial items: for enterprises receiving or sending large shipments – or heavy, sizeable items – smaller vehicles simply aren't an option.

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Limited operation initiatives

Some cities have introduced local initiatives to limit operation of supply chains – like Mexico City's 'no drive days' based on vehicle registration plate.¹⁵ Bogota in Colombia has also tried similar.¹⁶

Such schemes are well intentioned but don't account for the realities of commercial demand. In Mexico City, for example, enterprises and logistics operators simply increased their fleet to assure coverage – and over time, the scheme resulted in a 13% increase in CO levels.¹⁷

Enterprises are invested heavily in meeting air quality and net zero targets – but to be viable solutions can't cause disruption for customers. Especially during COVID when access to deliveries is especially critical.

Low emissions zones

There are 250-odd low emissions zones across Europe, with various degrees of ambition, coverage and success.¹⁸ Such zones – whether they ban vehicles that don't meet emissions standards or use fines as a deterrent – are definitely part of the long-term solution. In most zones ('LEZs'), NOX and CO2 emissions have notably decreased.¹⁹

But 31% of large businesses say they struggle to meet city emissions levels.²⁰ Not least because restrictions are based on certified standards and not real-world emissions.

One big problem is that fleet upgrades aren't always commercially viable, especially when fleet operators have already sunk large sums into vehicles they expect a seven to ten year return on. Plus, even the most up-to-date vehicles cause harmful emissions if they're not working properly.

Long-term, modernising fleets makes sense – but what about now?

Despite these various initiatives, progress is slow. That's why 53% of large businesses feel unprepared to address the air quality and emission challenges of logistics transportation.²¹ It's also why the UK faces significant pressure for currently missing legally binding GHG emissions targets. They're on track to reduce GHG emissions by only 10%; not the required 31% by 2030.

The fact is, the logistics ecosystem involves many players and there are complex, long-term challenges that make meeting air quality and net zero targets difficult.

65% of enterprises identify poor collaboration as the major barrier to more sustainable urban logistics, for example, and 64% lack of critical infrastructure. Other top challenges centre around lack of appropriate leadership and governance.²²

What's really needed – as these vital long-term conversations continue – is a commercially viable, immediately actionable solution that allows large businesses to take action today.

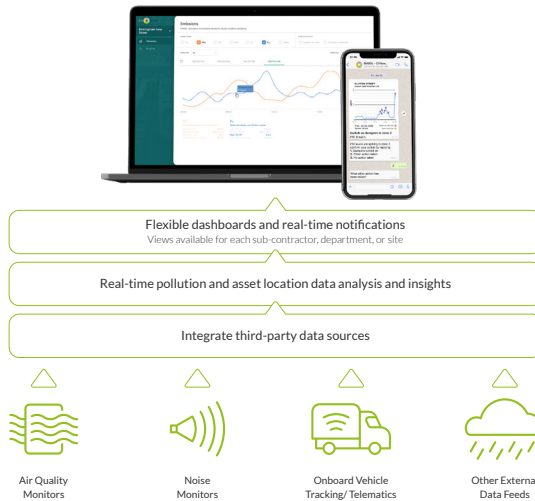
Here's why that's EMSOL.

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EMSOL helps enterprises achieve clean air and net zero targets

EMSOL is a modern cloud-based technology platform that helps large businesses get visibility and take control over logistics pollution and emissions – to actually achieve (not just talk about) air quality and net zero targets. To show meaningful progress to government, customers and investors today. Not in 2030 onwards.



How EMSOL works

EMSOL combines monitoring with small location-tracking tags affixed to vehicles (like a tax disk), to tell you which vehicles are causing emissions problems, when, and where. In real time.

84% of large businesses might have established environmental goals but 45% don't collect delivery emissions data that would help achieve them.²³ EMSOL gives you that data, bringing all players effortlessly into the same system to create a single, unified view across your logistics operation. However complex.

The relevant people then get a mobile alert and view these precise, targeted insights through a modern dashboard – so they can take immediate action to resolve. Like flagging an underperforming vehicle for service, or retraining drivers who consistently idle engines, or targeting vehicle upgrade investments.

The result is, you're empowered to take actions at local scale, every day, to achieve your air quality and net zero targets. And show progress to your stakeholders.

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Visit our website at www.emsol.io
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