

Zero-Emission Construction Sites

- Changing the way we build in cities

How does sustainable innovation in the construction sector affect me as a citizen?

Conventional construction machinery and heavy-duty transport of materials to, from and around building sites is a major source of noise and air pollution, and also contributes to global carbon emissions.

Transitioning to zero-emission construction sites means...



Health improvements due to improved local air quality, by avoiding emissions caused by burning fossil fuels. This is a direct benefit for construction workers and all city residents.

- ★ In London, 9% of PM2.5, 4% of PM10, and 6% of NOx emissions come directly from the exhaust fumes of construction machinery.¹ Dust and exhaust fumes from fossil-fuelled machines worsen urban air quality and negatively affect health.
- ★ Air pollution causes around 400,000 premature deaths per year in Europe, and 90% of European city-dwellers are exposed to harmful levels of air pollution.²



Increased liveability with less noise. Live, work or play in the vicinity of a construction site without the disturbance of diesel-powered machinery for months on end.

- ★ Noise from construction sites impacts the wellbeing of construction workers and the neighbourhood surrounding the site. Much noise on construction sites comes from generating electricity through diesel pumps, heating or drying of materials, and traffic to, from, and within the site.
- ★ Zero emission equipment produces significantly less noise and vibration, which reduces the impact on workers' health and reduces nuisance to those living or working nearby. Reduced noise may allow for extended hours of construction works, leading to overall reduced project time.

Climate action – supports move away from fossil fuels and reduction of global greenhouse gas emissions, in alignment with carbon neutrality targets of cities and the European Union. Goals to be fossil free and/or carbon neutral can only be achieved if construction emissions are ambitiously addressed.



- ★ In Oslo, construction machinery accounts for 18% of the city's total CO₂ emissions, accounting for 30% of traffic emissions. This is greater than all of Oslo's emissions from passenger cars and light duty vehicles.³
- ★ In 17 EU countries, construction machinery and equipment emitted 20 MtCO₂ in 2018. This is higher than the total national emissions of 5 EU Member States. (Slovenia, Luxembourg, Cyprus, Latvia and Malta).⁴

1 <https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory--laei--2016>

2 www.eea.europa.eu/themes/air/intro

3 www.oslo.kommune.no/politics-and-administration/smart-oslo/projects/zero-emission-construction-sites

4 Bellona Zero Emission Construction Factsheet 2020



See to believe: Videos show zero-emission construction machinery in action [in Oslo](#) and [in Copenhagen](#).



How can citizens get involved? First and foremost, get informed!



- If your city is still using conventional construction machines, voice to your local government the need for cleaner construction.
- If your city has already started the transition to emission-free construction sites, show your appreciation for their climate action leadership.

What is the Big Buyers Initiative for Zero Emission Construction Sites?

The Big Buyers Initiative working group on Zero-Emission Construction Sites brings together the cities of Amsterdam, Brussels, Budapest, Copenhagen, Helsinki, Lisbon, Oslo, Trondheim and Vienna to promote zero-emission construction sites, focussing on alternatives to conventional diesel-driven construction machines. These cities work together as big public buyers to develop and pilot innovative sustainable procurement approaches in order to reduce the environmental impact of construction activities and encourage market innovation.

- Learn more about the Big Buyers Initiative: <https://sustainable-procurement.org/big-buyers-initiative>
- More information on zero emission construction sites: <https://bellona.org/publication/zero-emission-construction-sites-status-2019>



The Big Buyers Initiative is currently managed by ICLEI - Local Governments for Sustainability and Eurocities.



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