Societal benefits of zero-emission construction



CE Delft

Introduction

- **Ellen Schep** – Senior Consultant at CE Delft
- Independent research and advice since 1978
- Energy, transport and raw materials
- Economic, technical and policy expertise
- Not-for-profit



Clients



Business
(SMEs, industry, transport, energy and trade associations)



Public authorities
(European Commission, European Parliament, ministries, provinces, municipalities, water boards)



NGO's

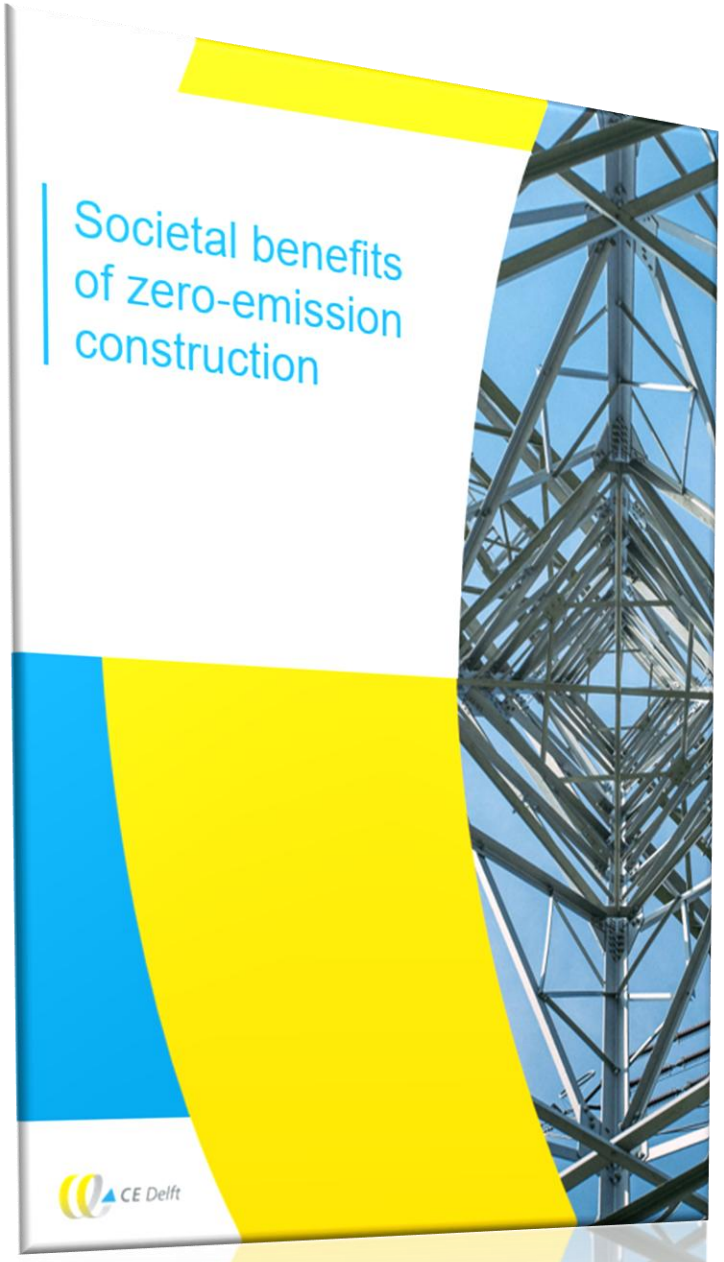
Introduction of the topic

Zero-emission construction: we know the **costs**

What about the **benefits for society**?

Research by CE Delft, commisioned by the Dutch Ministry of Infrastructure and Water Management

Can inform policy makers' decisions on support for zero-emission construction



About the research: scope

- All public procurement in NL
- Scope:
  - Non-road machine mobile machinery
  - Rail-specific construction equipment
  - Hydraulic engineering (vessels only)
- All becoming zero-emission at an accelerated pace through 2035
- Reference: only fleet renewal, no additional policy
- Quanitifying the benefits as much as possible, using different valuation techniques
  - Eg. Carbon price € 158 per tonne



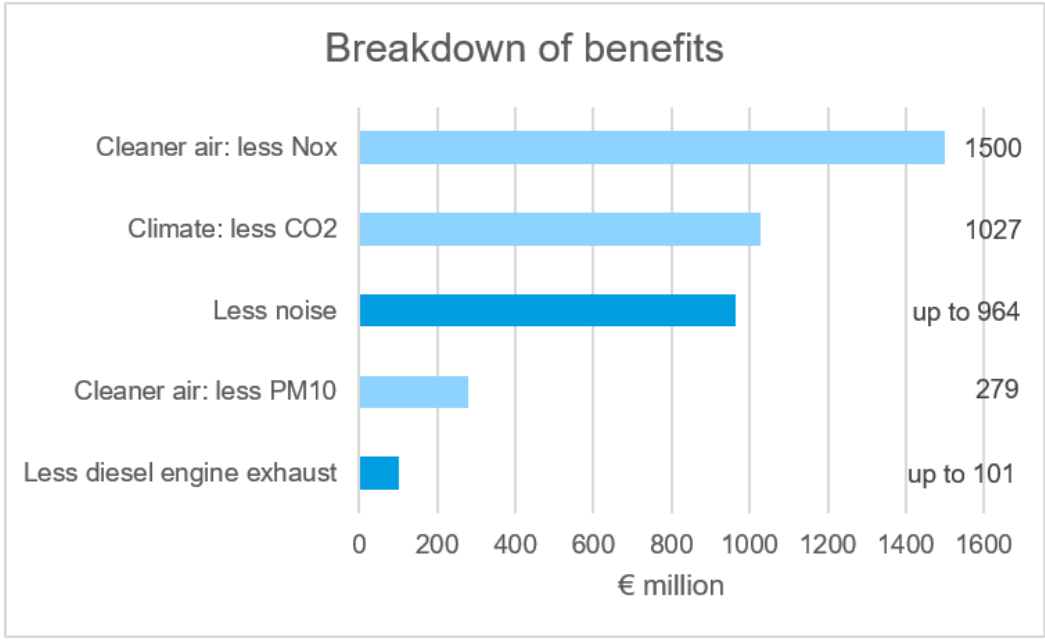
Zero-emission construction delivers substantial social benefits

Up to

€ 3.87 bn

euro in monetised benefits

TNO: additional costs 2023-2030: € 4.9 bn.



Additional benefits not monetised

Less vibration – Fewer nitrogen-related construction delays – lower exposure to fuel price shocks

How does zero-construction benefit our health?



Reduced PM10 and NOx emissions: cleaner air



Less noise



Less diesel engine exhaust



Less vibrations and odour



Benefits construction workers and nearby residents

Environmental prices for PM and NO_x

Valuation based on loss of healthy life years

Qualitative analysis

Implications

- Societal benefits of zero-emission construction count up to 3.87 billion + unmonetised benefits for Dutch public procurement construction
- Main benefits: climate benefits and cleaner air due to nitrogen reduction, positive implications for health of construction workers and nearby residents
- Similar order of magnitude to the additional costs



The Netherlands: Social benefits strengthen the case for continued support for zero-emission construction through SEB

Other countries: Substantial societal benefits provide a rationale for adopting similar policies tailored to national circumstances

Want to learn more?

- Full report available at https://cedelft.eu
- More information: schep@ce.nl

