





Oslo's electric vehicle transition

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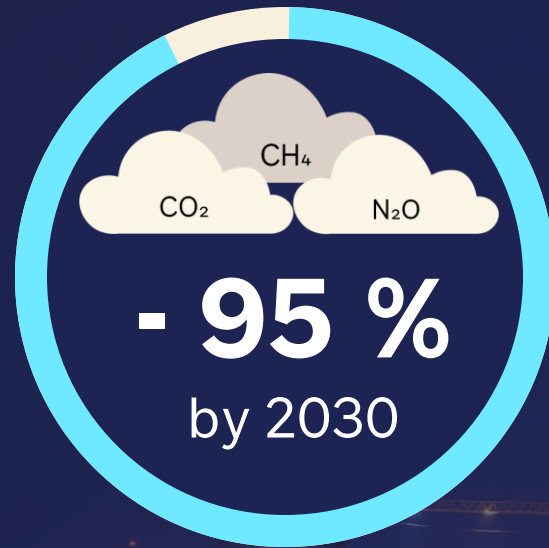
First Lesson

Be ambitious.

A deadline measured in years, not decades, provides no excuse for inaction



Climate strategy



Direct emissions

Oslo's greenhouse gas emissions in 2030 will be reduced by 95 per cent compared with 2009, and by 52 per cent by 2023



Climate resilience

Oslo's capacity to withstand climate change will be strengthened towards 2030, and the city will be developed so that it is prepared for the changes projected by 2100

Climate budget - an efficient governance system



90 % of Oslo's direct emissions stems from:



52 %

Transport



25 %

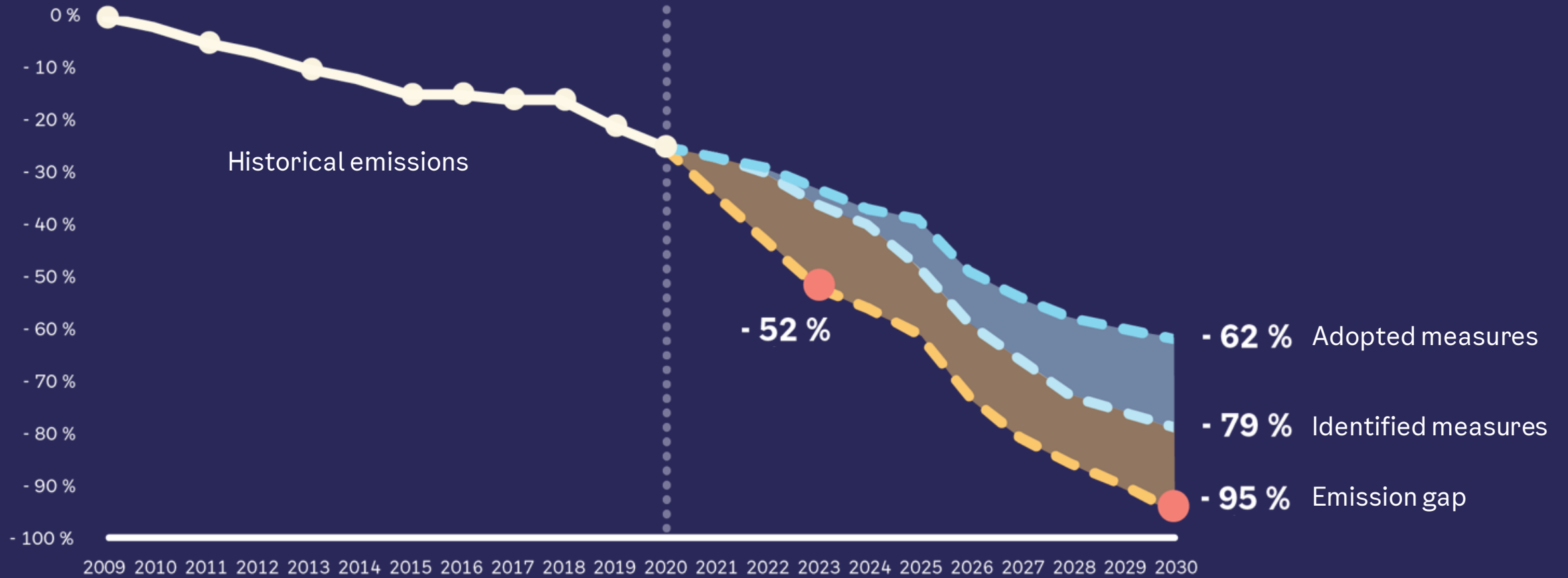
Waste



12 %

**Machines (mainly
construction)**

We are on track towards 2030

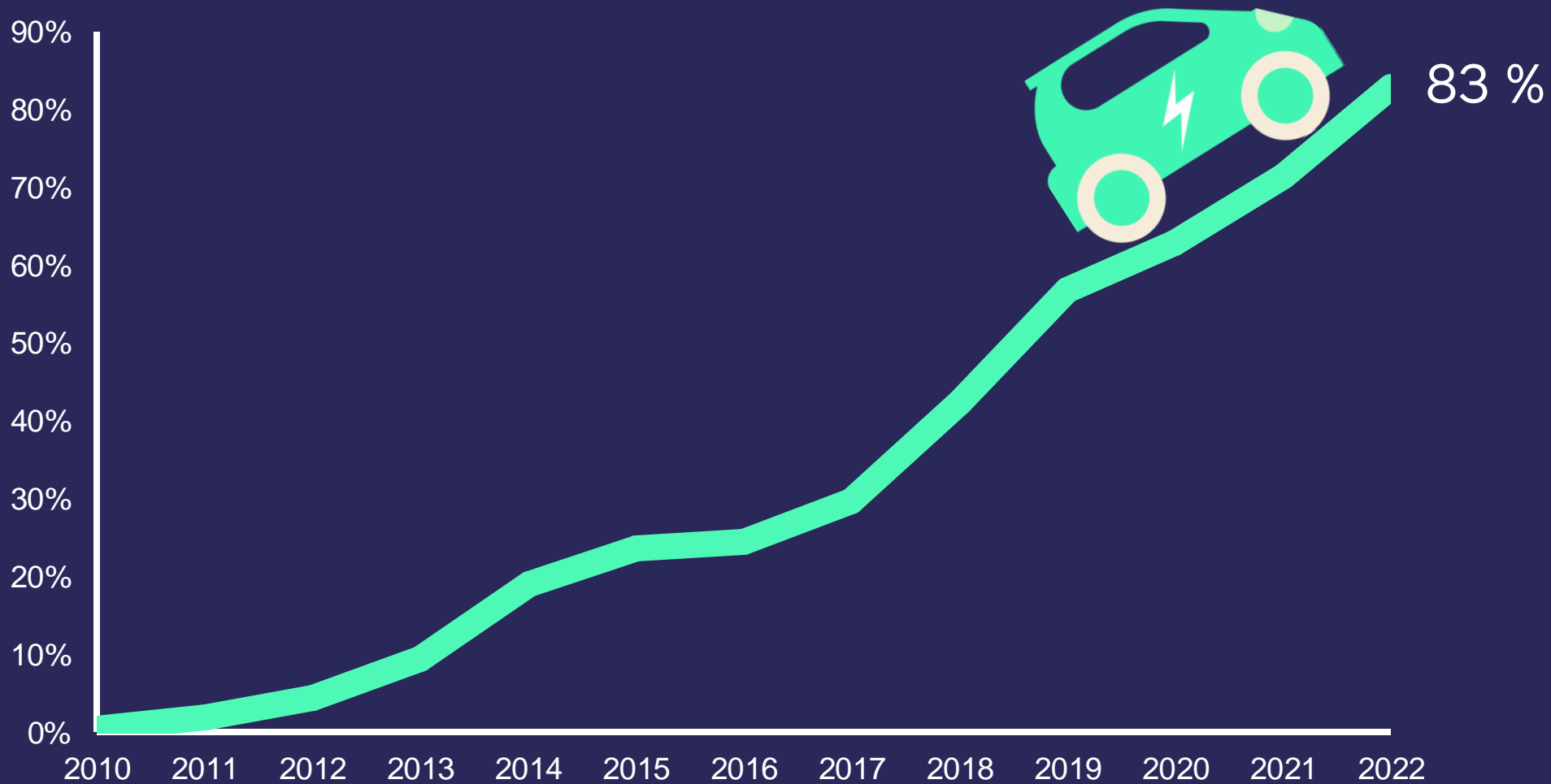




**2023: 100% electric
buses, trams, metro
and ferries**

ADVARSEL
STROMLEDNING SPINER
PÅ VIKEN BEHOVES

The private cars in Oslo are going electric



Oslo

All numbers are share of EVs as of total sales of new private cars 2022

**New
sales
2020**

Electric 16 ton+: **1 %**
Biogas 16 ton+: **3 %**
Electric van: **20 %**



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**New
sales
2023**

Electric 16 ton+: **27 %**
Biogas 16 ton+: **9 %**
Electric van: **46 %**





50% zero
emission
construction

A photograph of two people standing on a snowy hill, looking out over a city at night. The person on the left is wearing a dark jacket and pink pants, while the person on the right is wearing a light blue jacket and black pants. The city lights are visible in the background, and a large tree is on the left side of the frame.

Second lesson

Be predictable

Set clear targets, follow up with incremental change through incentives and regulation



Transport

5

All vans shall be zero emission. All heavy-duty vehicles shall be zero emission or use sustainable renewable fuels by 2030.



Building and construction

7

Building and construction activities in Oslo will be fossil free and thereafter emission free by 2030.



**Toll ring
and
congestion
pricing**



Establish charging infrastructure and support schemes



**Use benefits,
e.g. free
parking and
access to
public
transport lane**



Third lesson

Create change by being a **demanding customer**. The key strength of markets is their adaptability - when you play to that strength, it's surprising how much change you can create in a short time.



2016

First Fossil Free Pilot

2019

Standardized emissions criteria in tenders

2020

Fossil free solutions required in new zoning plans

2022

Municipal construction sites are 55 % emission free

2025

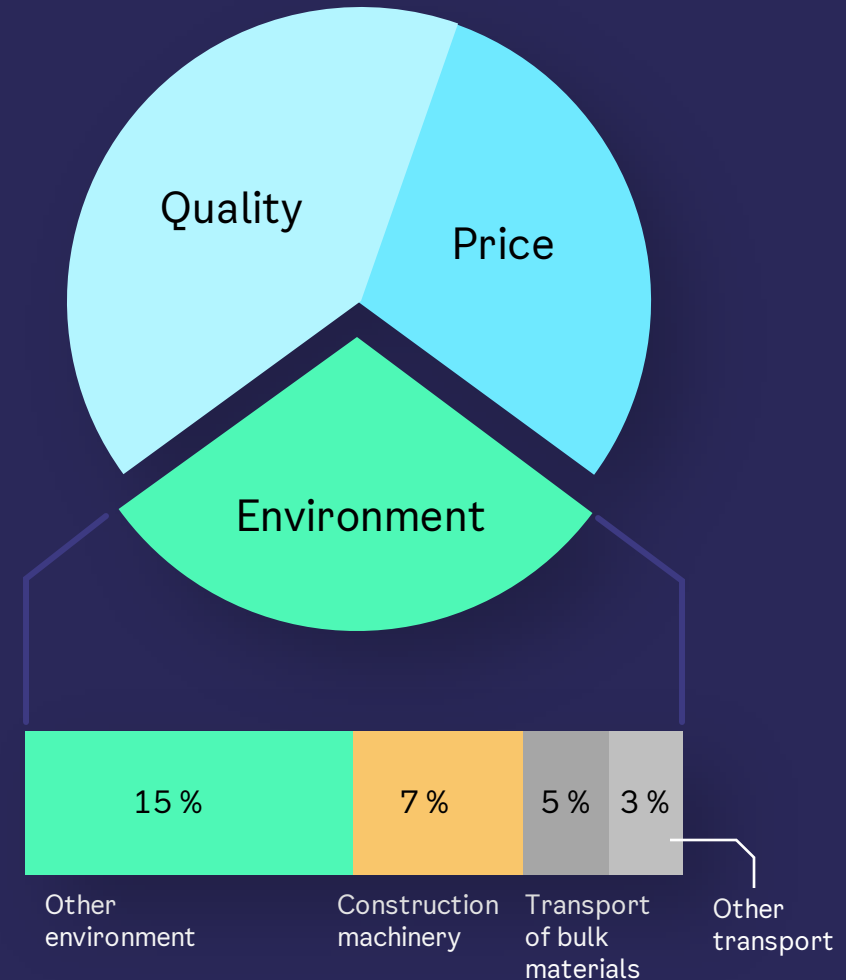
All municipal projects are zero emission

2030

All construction zero emission

A procurement strategy to drive innovation

- ▶ Oslo invests 1 billion Euro annually
Mainly construction, such as schools, kindergardens, nursing homes, water and sewage infrastructure
- ▶ All planned procurement shall be based on the goal of becoming a zero-emission city
- ▶ Tender award criteria on zero emission solutions



Share of transport fuel in procurements

- no additional cost for City of Oslo



2 %

Fossile energy

Example - not correct data



43 %

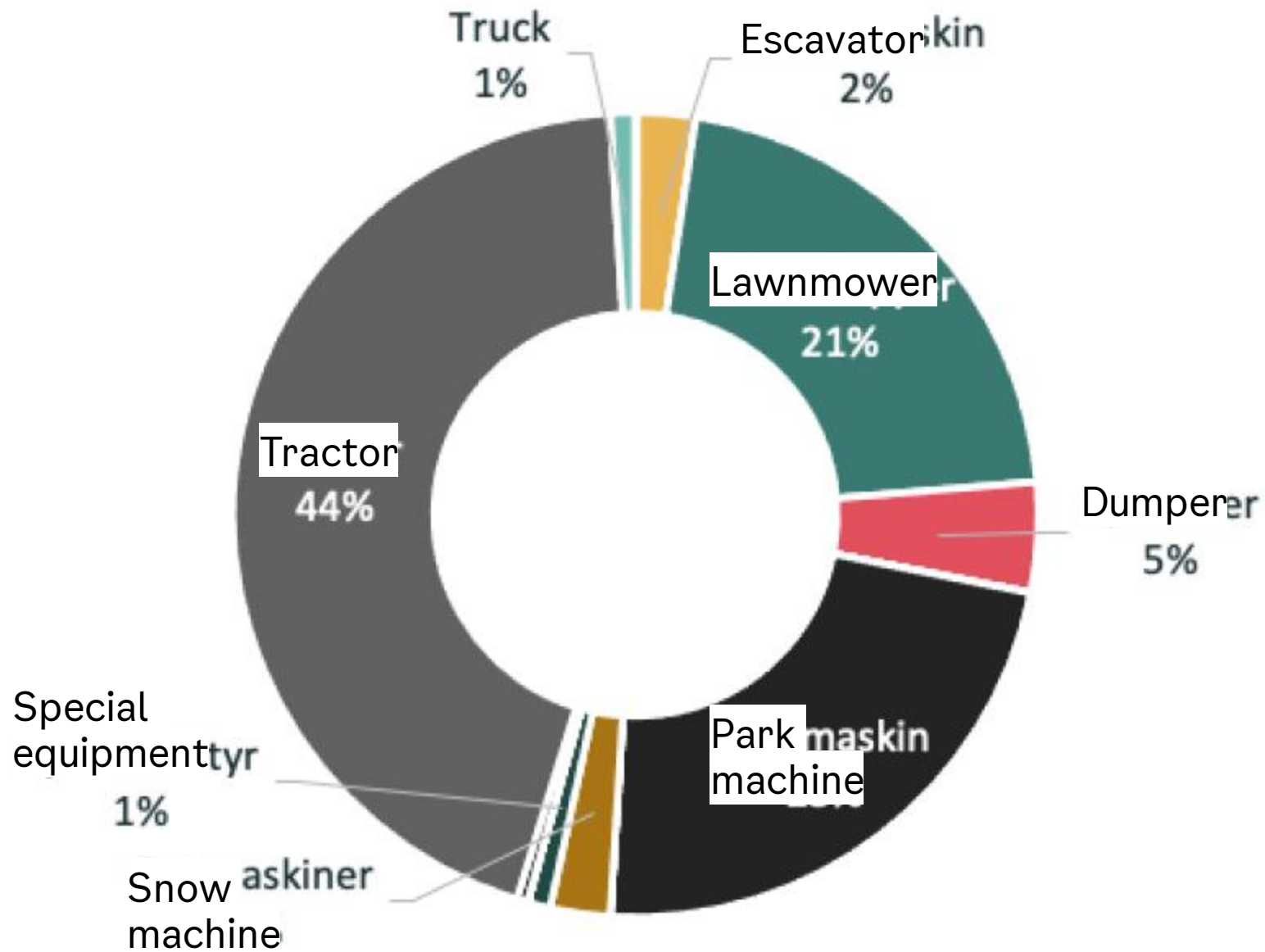
Sustainable biofuels



55 %

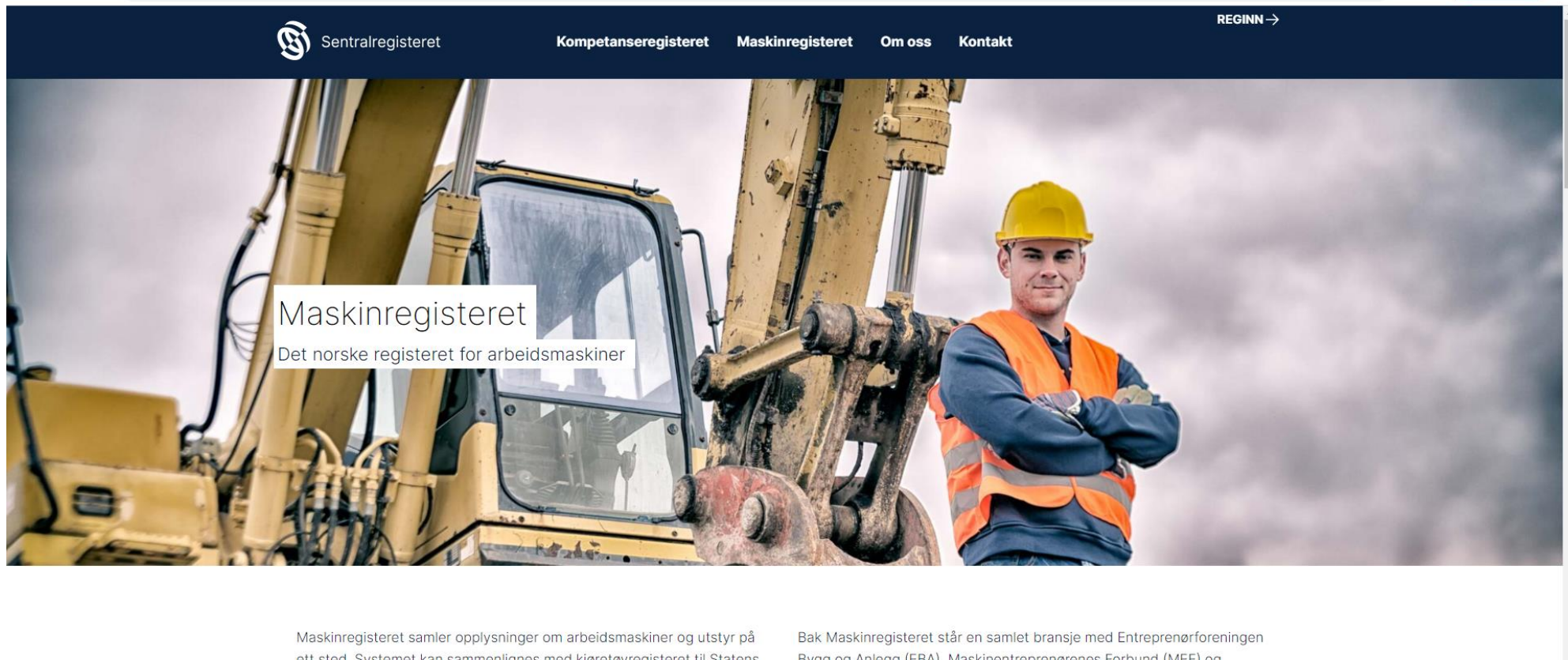
Zero emission





Distribution of emissions per main category (direct ghg emissions)

NATIONAL REGISTRY FOR CONSTRUCTION MACHINERY



Tabell 1 - Modenhetsutvikling for de viktigste maskinene

Maskinkategori	Type	Segment	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Gressklipper	Kantklipper	Ingen	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Gressklipper	Dytteklipper	Ingen	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Gressklipper	Sitteklipper	Ingen	TP	TP	SP	SP	SP	SP	SP	SP	SP	SP
Gressklipper	Gresstrimmer	Ingen	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Parkmaskin	Løvblåser	Ingen	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Parkmaskin	Hekksaks	Ingen	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Parkmaskin	Motorsag	Ingen	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Snømaskiner	Snøfreser	Ingen	TP	TP	SP	SP	SP	SP	SP	SP	SP	SP
Snømaskiner	Løypeprepmaskin	<250 hk	P	TP	TP	SP	SP	SP	SP	SP	SP	SP
Snømaskiner	Løypeprepmaskin	>250 hk	P	P	P	TP	TP	SP	SP	SP	SP	SP
Traktor	Traktor	25-75hk	P	P	TP	TP	SP	SP	SP	SP	SP	SP
Traktor	Traktor	>75hk	P	P	P	TP	TP	SP	SP	SP	SP	SP
Traktor	Minitraktor	<25hk	P	TP	TP	SP	SP	SP	SP	SP	SP	SP
Terrengkjøretøy	El-bil	Ingen	TP	TP	SP	SP	SP	SP	SP	SP	SP	SP
Terrengkjøretøy	ATV	Ingen	TP	TP	SP	SP	SP	SP	SP	SP	SP	SP
Terrengkjøretøy	Andre	Ingen	TP	TP	SP	SP	SP	SP	SP	SP	SP	SP
Hjullaster	Hjullaster	<10 tonn	TP	TP	SP	SP	SP	SP	SP	SP	SP	SP
Hjullaster	Hjullaster	10-25 tonn	P	P	P	TP	TP	SP	SP	SP	SP	SP
Hjullaster	Hjullaster	>25 tonn	P	P	P	P	TP	TP	SP	SP	SP	SP
Gravemaskiner	Gravemaskin	<10 tonn	TP	TP	SP	SP	SP	SP	SP	SP	SP	SP
Gravemaskiner	Gravemaskin	10-25 tonn	P	P	TP	TP	SP	SP	SP	SP	SP	SP
Gravemaskiner	Gravemaskin	>25 tonn	P	P	P	TP	TP	SP	SP	SP	SP	SP

SP = Serieproduksjon

TP = Tidlig serieproduksjon

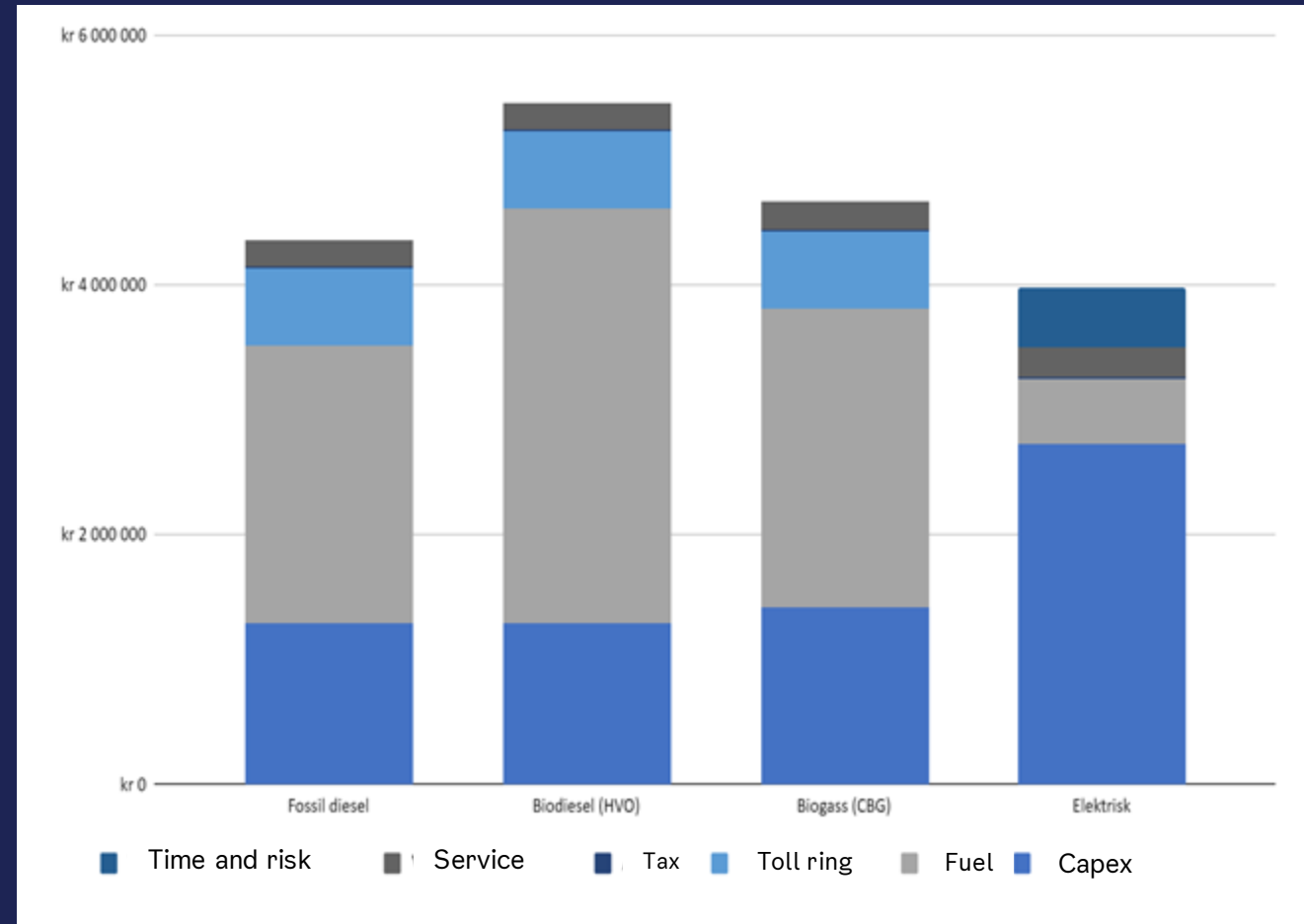
P = Pilot

Last-mile transport in contracts

Citywide framework agreement	Zero emission	Biofuels
Coffee machines and water coolers	100%	
Servers	100%	
Mobile phones	100%	
Lamps, light bulbs and equipment	100%	
ICT equipment (computers and screens)	100%	
Medical consumables and equipment	100%	
Charging stations for electric cars	100%	
iPad and Mac products	100%	
Cleaning products, paper, plastic and disposable products	90%	10%
Office supplies	67%	33%
Fruits and vegetables	20%	60%

Consequences: Costs

Dump truck with trailer (44 t) (540 kWh)
TCO with ownership of 7 years



Source: Zero, 2022

Krav til utslippsfrie bygge- og anleggsplasser

- Frem til 2030:
 - ▶ Minst 50 % av energibruk skal være utslippsfri
 - ▶ Øvrig energi = bærekraftig biodrivstoff
- Fra 2030:
 - ▶ Alle maskinene på bygge- og anleggsplassen skal være utslippsfrie



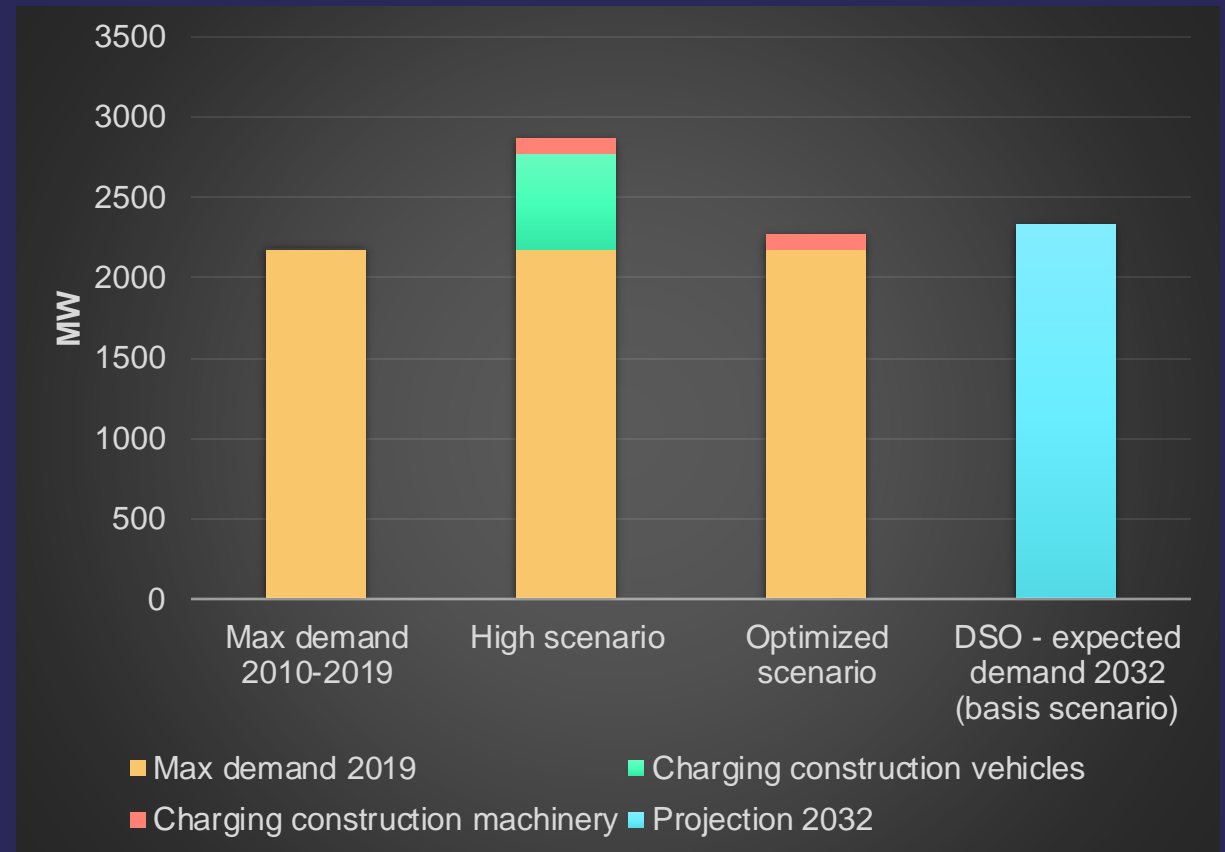


Fourth lesson

**Comprehensive energy and
grid planning**

Consequences: Power grid

- ▶ In the optimized scenario, exploring all options to reduce grid load, including adjusting work processes, grid load increase about 5 percent



City of Oslo's role in energy planning

- ▶ Minimise pressure on power grid from climate targets
- ▶ Scope
 - Will the electrification be a problem for the power grid?
 - Can we make the transition fast enough?
 - District heating/cooling & the power grid
 - Impact of increased installation of solar panels
 - Potential of energy efficiency





C4O
CITIES



Ambitious
climate targets



Predictability



Purchasing
power



Further reading

<https://www.klimaoslo.no/kategori/english/>

<https://www.klimaoslo.no/wp-content/uploads/sites/88/2019/11/Climate-and-environmental-requirements.pdf>

<https://www.klimaoslo.no/wp-content/uploads/sites/88/2022/01/Survey-emission-free-construction-sites.pdf>

<https://www.klimaoslo.no/wp-content/uploads/sites/88/2018/06/Veileder-Utslippsfrie-byggeplasser-ENG.pdf>

<https://www.klimaoslo.no/collection/impact-assessment-of-zero-emission-building-processes-in-oslo/>





Oslo

Thank you for your attention

