



## **Climate and Environmental Plan 2018-2030**

# **Action Plan 2018-2022**

**Adopted by Stavanger City Council  
26.11.2018**



STAVANGER KOMMUNE

# READING GUIDE

## *Structure*

The main chapters have the same titles as in the main plan, the Climate and Environmental Plan 2018-2030. The objectives for the theme area are listed in each chapter. These are also listed in the main plan. The measures in the action plan are sorted by the relevant objective and any secondary objectives.

Transport and Energy and Material Use in Building and Construction are extensive chapters. The main objectives for transport have been categorised into four focus areas with secondary objectives and associated measures for each of these in order to provide a better and more systematic overview. The measures associated with the chapter on energy and material use are also categorised under several secondary objectives.

## *Numbering of the measures*

Each measure has been assigned a unique code consisting of one or two letters and a number in order to make identification easier. The letters are abbreviations of the Norwegian language version of the main themes in the Climate and Environmental Plan and the numbers have been assigned consecutively within each theme.

In some cases the measures are numbered with a letter after the number. These are measures that were adopted in the final review of the plan on 26.11.2018. Since there were already references to the original measure numbers in other documents, changing all of the numbering would have caused confusion.

T = Transport

E = Energy and material use in building and construction

F = Consumption, reuse, recovery and waste management

L = Air quality

M = Pollutants in products

FG = Contaminated ground on seabed and on land

P = Plastic litter

R = Radon

MI = Participation and involvement of residents

K = The municipality as an environmental and climate advocate

Some chapters do not have their own measures listed since these are, or will be, discussed in separate technical plans. This applies to Green Areas and Biodiversity, Noise, Aquatic Environment and Climate Adaptation. The measures for Agriculture and Aquaculture, respectively, will be specified after the merger of Stavanger, Rennesøy and Finnøy into a single municipality in 2020.

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# Preface

Stavanger's Climate and Environmental Plan 2018-2030 describes challenges, objectives and means within a number of themes. This action plan for the period 2018-2022 describes the concrete action points that are intended to help ensure the objectives of the Climate and Environmental Plan are achieved.

One important objective of the Climate and Environmental Plan is to cut direct greenhouse gas (GHG) emissions in Stavanger by 80 per cent by 2030 and to be fossil-free by 2040, i.e. not use any fossil energy sources for transport or building heating. Reducing GHG emissions is a challenge that will require comprehensive measures within transport, energy, waste management, agriculture and other areas.

The action plan is based on the means Stavanger Municipality has at its disposal, although many measures will be carried out by others or in collaboration with others. In these circumstances, the municipality's role as an advocate or initiative-taker is shown in the action plan. The plan applies to Stavanger within its current municipal boundaries.

Some of the activities will require systematic consideration by the municipality or larger appropriations, e.g. developing infrastructure for electric car charging or converting energy systems in buildings to renewable sources. In such cases, the responsible technical department will need to present a special case for political consideration.

Developments within the area of the climate and environment will be described in annual status reports that provide an overall overview based on established indicators for each area.

Stavanger, November 2018

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# 1 TRANSPORT

## Primary objective

In 2030, direct GHG emissions from the transport sector have been cut by 80 per cent in relation to 2015, and 100 per cent by 2040.

## Focus area 1:

### Reducing scope of transport and changing travel habits

#### Secondary objective T1.1:

70 per cent of passenger transport takes place by bike, foot and public transport in 2030.

- Stavanger Municipality will ensure good traffic flow for public transport in the city
- City bikes' share will be increased by 1 per cent each year, and amount to 25 per cent in 2030
- Walking will be more attractive
- Many areas in the city centre will be car-free zones and reserved for vulnerable road users
- Average journey length will be shorter

### *Measures for increasing the use of public transport*

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
T1	Facilitate good quality densification along bus routes and the main public transport network	Urban and Community Planning			→	
T2	Work to reduce bus ticket prices via a dialogue with the government and county authority	Urban and Community Planning BMU			→	
T3	Help to lay the groundwork for self-driving buses	Urban and Community Planning BMU			→	
T4	Establish places for shared transport solutions in the districts (mobility points)	Urban and Community Planning BMU			→	

### Measures for increasing cycling

Measures for increasing cycling						
ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
T5	Continue to focus on updating the main cycling network and ensure high operation and maintenance standards	Urban and Community Planning BMU	Norwegian Public Road Administration Nord-Jæren cooperation	HØP Urban Environment Package Nord-Jæren	→	
T6	Continue to focus on establishing, operating and maintaining good, secure bike parking throughout the city, especially for electric and cargo bikes	BMU		HØP Urban Environment Package Nord-Jæren	→	
T7	Improve the city bikes scheme by increasing the number of stand places and ensuring that the average walking distance to stand places is reduced every year	BMU	City bikes Kolumbus Nord-Jæren cooperation	HØP City growth agreement	→	
T8	Continue to focus on information and campaigns to encourage more people to cycle and promote a safe cycling culture	BMU Urban and Community Planning	Nord-Jæren cooperation	HØP City growth agreement	→	
T9	Assess introducing a support scheme for the procurement of electric/cargo bikes	BMU		HØP	→	

### Measures for increasing cycling in the municipality as an organisation

Measures for increasing cycling in the municipality as an organisation						
ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
T10	Enable service areas to meet their transport needs by bike, e.g. home-based services, operating and maintenance tasks, etc., although not at the expense of delivery capacity with respect to an employee's proportion of productive working hours.	Procurement All departments and units			→	

T10a	If practically possible, meetings and possibly courses, seminars, etc. will be conducted as video courses or telephone conferences.	All departments and units				
T11	Analyse where the need to develop changing room and showering facilities at the municipality's units (schools, kindergartens schools and similar) is greatest in order to facilitate the increased use of bikes as a means of transport for the municipality's employees	Urban and Community Planning BMU				
T12	Facilitate secure bike parking for employees and users of municipal buildings	BMU				

### *Measures for increasing walking*

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
T13	Implement the shortcut project in all districts to survey, update and establish new shortcuts to important everyday destinations, e.g. kindergartens, schools, shops, bus stops and other important places in the local community.	Urban and Community Planning BMU	Nord-Jæren cooperation	HØP Urban Environment Package Nord-Jæren		
T14	Ensure the identified shortcuts are well maintained	BMU				
T15	Initiate and support walking campaigns such as Beintøft (walk to school competition)	BMU	Eco-Agents	HØP		

### *Measures for car-free zones, car sharing, mobility impact*

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
T16	Zone and establish car-free zones	Urban and Community Planning BMU				

T17	Facilitate car sharing schemes such as Nabobil, Bilkollektivet, electric car sharing schemes, e.g. through priority parking.	Urban and Community Planning	HjemJobb Hjem Nabobil car sharing scheme and others	HØP		
T18	Stavanger Municipality will support and become a HjemJobbHjem (“Home Work Home”) company.	Support and development	HjemJobb Hjem	HØP		
T19	Conduct measures to raise awareness and provide information about environmentally-friendly transport for residents through regular campaigns such as Environment Sundays and European Mobility Week.	BMU	Nord-Jæren cooperation	HØP City growth agreement		
T20	Contribute to the development of open car sharing schemes for electric and plug-in hybrid cars by participating as a customer or contributor in other ways. Including assessing whether electric cars should become part of the HjemJobbHjem concept.	BMU (Mobility Project)	HjemJobb Hjem			
T21	Establish mobility points at Stavanger Station and Fiskepirterminalen	Urban and Community Planning BMU		HØP		x

***Measures for shortening journey distances for everyday destinations  
(work, kindergartens, school, recreational offers, etc.)***

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
T22	Facilitate 80-90 per cent of new homes being built as densification <sup>1</sup> , either in existing developed areas or in areas being transformed from other purposes to residential.	Urban and Community Planning				
T23	Prioritise children in own neighbourhood when allocating kindergarten places through the use of kindergarten catchment areas (similar to school catchment areas). Wherever possible, kindergartens must not lie on the other side of a toll zone boundary in relation to the home.	Childhood				

<sup>1</sup> Densification: increasing land utilisation in existing built-up areas

T24	Ensure there are attractive recreational offers for children and young people in their own district	Childhood				
T25	Co-locate everyday destinations	Urban and Community Planning				
T26	Facilitate the use of smart solutions, e.g. looking for parking spaces in order to reduce distances driven	Urban and Community Planning BMU Stavanger Parking				x

### Secondary objective T1.2:

#### Streamlining commercial transport and urban logistics

<i>Measures for promoting efficient commercial transport and urban logistics</i>						
ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
T27	Establish distribution points for goods deliveries in the city centre, or in connection with selected mobility points	Urban and Community Planning BMU	Hauliers	HØP Hauliers		

### Secondary objective T1.3:

#### Reducing the negative impact of long journeys to and from Stavanger

<i>Measures for reducing the negative impact of long journeys to and from Stavanger</i>						
ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
T28	Cooperate with tourism organisations and stakeholders to explore measures for more sustainable cruise and air travel to and from the region that is consistent with national and international commitments regarding climate cuts	Environment and Refuse Collection Business	Region Stavanger, tourism organisations, Avinor			x
T29	In cooperation with other port municipalities, lobby the government to put in place national regulations for GHG emissions, air pollution and other	Environment and Refuse Collection	Stavanger-regionen Havn IKS		x	

	environmental impacts from cruise tourism in order to make it more sustainable					
T30	Encourage the tourism company Region Stavanger to target the majority of its marketing of Stavanger at its neighbouring markets (Norway, Nordic countries and Northern Europe)	Environment and Refuse Collection	Region Stavanger		x	
T31	Ask Region Stavanger to work for the approval of Stavanger as a “sustainable destination”	Environment and Refuse Collection	Region Stavanger		x	
T32	Encourage the tourism company Region Stavanger to introduce a system of local rewards for tourists that travel in a climate-friendly manner to and from the Stavanger region.	Environment and Refuse Collection	Region Stavanger		x	

## Focus area 2:

### Promoting renewable fuel and technology in the transport sector

#### Secondary objective T2.1:

GHG emissions from light vehicles have been reduced by 80 per cent by 2030 and by 100 per cent by 2040

- All new private cars in Stavanger must be zero-emission vehicles by 2025 in line with national guidelines
- Stavanger Municipality will strive to ensure its vehicle fleet is emissions free by 2025.
- Good accessibility to fossil-free fuels must be facilitated before demand arises
- The introduction of environmental zones/zero-emission zones must be assessed.

<i>Measures for facilitating zero-emission light vehicles</i>						
ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
T33	Facilitate sufficient power supply so that more charging stations can be established than the Municipal Master Plan requires for new developments	Urban and Community Planning	Developers		→	
T34	Ensure there are a sufficient number of spaces with charging opportunities to meet the demand	Urban and Community Planning BMU			x	

		Stavanger Parking				
T35	Ensure sufficient charging opportunities are available for residents in areas with residential zone parking	Urban and community planning BMU Stavanger Parking				
T36	Establish more charging points in car parks that can be used in the evening/at night by residents in residential zones	BMU Stavanger Parking		Klimasats programme	x	
T37	Study charging from lamp posts and similar, especially in Trehusbyen	Urban and community planning BMU Stavanger Parking	Lyse		x	
T38	Contribute to smart, self-financed public charging opportunities	BMU Stavanger Parking	Lyse		x	
T39	Prioritise zero-emission cars in the parking policy. The charge should not exceed 50 per cent of the ordinary rate	Urban and Community Planning Stavanger Parking				
T40	Study and contribute to establishing refuelling stations for zero-emission vehicles in appropriate places	Urban and Community Planning BMU	Lyse Grønn Kontakt Stavanger Forum	Klimasats programme Enova HØP Self-financing		
T41	Facilitate an independent advice service that housing cooperatives and co-owners can contact for information on installing charging points in communal garages, etc.	BMU Stavanger Parking?	Rogaland Elbilforening?	Enova?	x	
T42	Work on establishing a support scheme for establishing charging infrastructure for housing cooperatives and co-owners	BMU		HØP		x
T43	Maintain the environmental difference for toll zones, advantage for zero-emission vehicles (max. half rate)	Urban and Community Planning Urban Environment Package	Parties to the Urban Environment Package Government			

T44	Maintain the environmental difference for zero-emission vehicles on ferries (max. half rate)		Rogaland County Authority Government			
T45	Assess introducing zero or low emission zones for all transport in central areas	Urban and Community Planning				x
T46	Require fossil-free taxis, ensure there are sufficient charging opportunities and aim to ensure that the municipality only uses fossil-free taxis by 2023	Procurement	Rogaland County Authority	HØP		x
T47	Exploit charging structure and parked vehicles' battery capacity for potential use for power grid (V2G)	BMU Stavanger Development	Developers Lyse			x
T47a	Increase the proportion of spaces reserved for zero-emission vehicles and by 2022 have a proportion of reserved spaces that at least equals the proportion of zero-emission vehicles in the vehicle fleet in Stavanger.	Urban and Community Planning BMU				
T47b	Wherever possible, request/require all of the municipality's associated companies (KF, IKS and AS) to choose zero-emission vehicles when they procure service vehicles.	BMU Procurement				

*Measures for facilitating zero-emission vehicles in the municipality's units*

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
T48	Work for requirements for zero emissions within building and construction in tender processes, with the objective of achieving zero-emission municipal building and construction sites in 2030 (see also Secondary objective E5, page 19)	Procurement Planning and Construction BMU		Klimasats programme		
T49	All new service vehicles must be emission-free, as long as technical solutions are available	All departments and units Procurement			x	

T50	Facilitate charging at the municipality's buildings and service locations	BMU				
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### Secondary objective T2.2:

GHG emissions from heavy vehicles have been cut by 20 per cent by 2030 and by

100 per cent by 2040

- Stavanger Municipality will ensure all heavy transport can be performed using zero-emission vehicles (electrical, hydrogen produced with the aid of renewable energy, or biofuels) or plug-in hybrid cars from 2025.
- By 2025, all household refuse collection in Stavanger must be performed using zero-emission vehicles, to the extent this is technically feasible and with the understanding that the collection must be safe and uninterrupted.

### *Measures for facilitating zero-emission commercial transport*

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
T51	Assess introducing zero or low emission zones for all transport in central areas.	Urban and Community Planning				x
T52	Support the establishment of an advice services that companies can contact for advice on zero-emission commercial transport	BMU			x	
T53	Study the establishment of a support scheme for zero-emission commercial transport, e.g. electric cargo bikes, electric vans or in-house company charging stations for electric vans.	BMU			x	
T54	Establish strong incentive schemes for fossil-free goods transport	Urban and Community Planning BMU	Government authorities		x	

### *Measures in the municipality as an organisation*

ID	Measures	Responsibility Stavanger	External stakeholders	Funding	2018-2019	2020-2022
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		<b>Municipality</b>				
T55	Require fossil-free goods deliveries in all municipal tenders and procurements	Procurement			x	
T56	Assist with the phasing in of zero-emission refuse collection vehicles at providers of household refuse collection services	Environment and Refuse Collection		Klimasats programme		

### Secondary objective T2.3:

Port operations, fast boats and ferries are fossil-free by 2030

<i>Measures for facilitating fossil-free port operations and fossil-free fast boats and ferries</i>						
ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
T57	Study the costs involved in establishing shore power for cruise ships	BMU	Stavangerregionen Havn IKS		x	
T58	Follow up any measures after considering the costs study	BMU	Stavangerregionen Havn IKS			
T59	Look at the possibility of reinforcing the environmentally differentiated port charges in cooperation with Stavangerregionen Havn IKS in order to encourage the industry to use ships with lower emissions	BMU	Stavangerregionen Havn IKS		x	
T60	Ask Stavangerregionen Havn IKS to phase in fossil-free vehicles in port operations	BMU	Stavangerregionen Havn IKS		x	
T61	Work to ensure that fast boats and ferries that call at Stavanger become fossil-free	BMU	Rogaland County Authority Stavangerregionen Havn IKS			
T 62	Cruise ships: Work to ensure that arrivals, port stays and departures from the Port of Stavanger are fossil-free	BMU				

## 2 ENERGY AND MATERIAL USE IN BUILDING AND CONSTRUCTION

### Primary objective

Direct GHG emissions from buildings and construction sites have been cut by 80 per cent by 2030, based on the 2015 level, and by 100 per cent by 2040.

### Objective for the entire city

#### Secondary objective E1:

By 2030, direct GHG emissions from stationary energy have been cut by 80 per cent

- A complete overview has been produced of energy sources and consumption patterns in Stavanger in a collaboration between Stavanger Municipality and energy suppliers
- Natural gas as a heating source has been phased out within the city limits by 2030
- The utilisation of local renewable energy resources is increasing
- By 2040, all building and construction sites are emission-free.

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
E1	Start work on revising the regional strategy for heating and energy solutions, with respect to status and the achievement of objectives	Urban and Community Planning BMU			x	
E2	Draw up a concrete plan for implementing a revised strategy for heating solutions in light of the objectives of the climate commitments. A case must be presented for political decision.	Stavanger Property				x
E3	Survey the city's energy consumption with respect to energy sources and volumes as a basis for assessing opportunities to cut energy use, assessing the use of more environmentally-friendly energy sources and assessing the	Stavanger Property			x	

	feasibility of utilising surplus heating and cooling					
E4	Survey and map available local energy resources such as biomass, animal fertilisers as a basis for bioheating or biogas, geothermal, heat from wastewater, wind, solar, etc., and show how much of this is being utilised, e.g. for heating buildings.	Stavanger Property			x	
E5	Study area projects for energy conversion to renewable energy sources	Stavanger Property			x	
E6	Study the need for, and possibility of, establishing a project office to coordinate, guide and organise the city's energy and climate work aimed at achieving the climate objectives.	Stavanger Property			x	
E7	Initiate collaborations with other property owners in the city in order to increase the familiarity with, and understanding of, national and international climate obligations. Through dialogue and cooperation, draw up a strategy for how the city as a whole can cut its GHG emissions from buildings.	Stavanger Property				x
E8	Initiate public-private collaborations on shared energy and heating solutions, equivalent to the Stavanger Forum area, in order to achieve efficient "co-use" and operation of the energy system.	Stavanger Property			x	
E9	Implement energy conversion in areas without other collective energy solutions based on renewable energy sources	Stavanger Property				x

## Objectives for the municipality's building and construction

### Secondary objective E2

New buildings and totally renovated buildings gradually achieve lower GHG emissions. The development pathway moves from passive building, via zero-energy building and plus building to zero-emission building<sup>2</sup> in 2030.

<sup>2</sup> A zero-emission building covers both its own energy consumption and compensates for emissions in various phases of the building's lifetime through the production of renewable energy

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
E10	Use environmental consultants to help set ambitious and realistic percentage targets for GHG cuts in line with the development of new and more climate-friendly products in light of costs viewed from a life cycle perspective	Stavanger Property				
E10a	Using wood-based materials must always be considered in new buildings, based on the both exterior and interior environment of the buildings, cf. Trehusbyen Stavanger	Stavanger Property				
E11	Demand environmental product declarations (EPDs) for all projects to increase knowledge and awareness of climate impact	Stavanger Property				
E12	Include environmental impact and life cycle costs (LCC) as award criteria for procurements	Stavanger Property				
E13	Conduct zero-energy building and fossil-free building site pilot projects	Stavanger Property			x	
E14	Conduct plus building pilot projects	Stavanger Property				x
E15	Fulfil the requirements for BREEAM certification in new buildings larger than 5,000 m <sup>2</sup>	Stavanger Property				x
E16	When renovating buildings or erecting new buildings on properties with existing buildings, the municipality must also prepare climate and environmental accounts for the existing buildings, based on the "BREEAM in use" method. <sup>3</sup>	Stavanger Property				
E17	As a general rule, adopt solar energy as part of the solution in all new buildings	Stavanger Property				

<sup>3</sup> More information: <http://ngbc.no/breeam-nor/#breeam>

### Secondary objective E3

Larger municipal renovation projects should achieve at least passive building standard, as long as this is technically and financially appropriate from a life cycle perspective

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
E18	Use environmental consultants to help set ambitious and realistic percentage targets for GHG cuts in line with the development of new and more climate-friendly products in light of costs viewed from a life cycle perspective	Stavanger Property			→	
E19	Demand environmental product declarations (EPDs) for all projects to increase knowledge and awareness of climate impact and to ensure that the objective of cutting GHGs is achieved	Stavanger Property			→	
E20	Include environmental impact and life cycle costs (LCC) as award criteria for suppliers	Stavanger Property				x

### Secondary objective E4

All fossil-based energy sources have been phased out in municipal buildings by 2020

- By the end of 2018, the overview and monitoring of the energy consumption in all municipal buildings and other municipal technical systems is in place
- Energy management in line with ISO 50001 has been introduced by 2019

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
E21	Complete the work of achieving 100 per cent energy monitoring of municipal buildings	Stavanger Property			x	
E22	Replace all fossil-based energy sources in municipal buildings with renewable energy by 2020	Stavanger Property				x

E23	Strive for fossil-free heating when leasing premises, buildings and homes, as well as when renegotiating or developing existing leases	BMU Legal Department				
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### Secondary objective E5

By 2021, all municipal building and construction sites are fossil-free and by 2030 emission-free

<i>Measures for planning and implementing fossil-free building sites</i>						
ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
E24	Energy solutions such as district heating or energy wells are planned before construction starts such that this energy can be used during the construction period	Stavanger Property				
E25	Require energy consumption to be regularly recorded at a project level during the construction period	Stavanger Property				
E26	Stipulate award criteria that forbid the use of diesel for heating buildings and drying	Stavanger Property				
E27	Require the use of energy efficient lighting (LED) on building sites and management to avoid lighting being on when no work is taking place	Stavanger Property				
E28	Require huts to be well insulated on a par with the requirements in TEK10 and have a system for lowering temperature at night and on weekends and holidays	Stavanger Property				
E29	Require fuel tanks to be located such that any risk of spills during refuelling, leaks and collisions/pushing is prevented, possibly using the protection/barriers	Stavanger Property				
E30	Conduct fossil-free building site pilot projects, with the following criteria: <ul style="list-style-type: none"> <li>All construction machinery, including transport to and from</li> </ul>	Stavanger Property				

	<p>the building site, must either be electric or use diesel from a certified sustainable source</p> <ul style="list-style-type: none"> <li>• Electric tower cranes should be used rather than diesel-powered mobile cranes</li> <li>• Any use of machinery with other fuel must be clarified with the client</li> </ul>					
E31	All construction projects must have objectives for energy use, energy sources and CO <sub>2</sub> emissions (including transport of materials, soils and waste to and from the building site)	Stavanger Property				x
E32	<p>The building site must be fossil-free in all projects:</p> <ul style="list-style-type: none"> <li>• As many pieces of machinery and transport vehicles should electric/battery-powered.</li> <li>• Electric tower cranes rather than diesel-powered mobile cranes are preferred. Where mobile cranes are used they should run on second generation biofuels</li> <li>• Any use of machinery with other fuel must be clarified with the client</li> </ul>	Stavanger Property				x

### *Measures for planning and designing fossil-free solutions for construction*

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
E33	Require energy consumption to be regularly recorded at a project level during the construction period	Planning and Construction Parks and Roads			→	
E34	Consider no dig solutions for cables and pipes or excavation boxes to reduce digging	Planning and Construction			→	

E35	<p>Conduct fossil-free building site pilot projects, with the following criteria:</p> <ul style="list-style-type: none"> <li>• As many pieces of machinery should electric/battery-powered</li> <li>• All diesel-powered machinery will use second generation biofuels from a certified sustainable source</li> <li>• All construction machinery, including transport to and from the building site, must either be electric or use diesel that complies with Standard EN 15940 (HVO/BLT)</li> <li>• Electric tower cranes should be used rather than diesel-powered mobile cranes</li> <li>• Any use of construction machinery with other fuel must be clarified with the client</li> </ul>	<p>Planning and Construction</p> <p>Parks and Roads</p>			
E36	Consider design and build contracts as an incentive for the contractor to strive for soil balance and minimise overall soil management	<p>Planning and Construction</p> <p>Parks and Roads</p>			
E37	Strive for the best possible soil balance and least possible amount of transport – plan for the use of surplus soil, reuse of soil and any intermediate storage	<p>Planning and Construction</p> <p>Parks and Roads</p>			
E38	Using 3D project planning to minimise unnecessary excavation	<p>Planning and Construction</p> <p>Parks and Roads</p>			
E39	Good progress planning to avoid unnecessary temporary excavation measures	<p>Planning and Construction</p> <p>Parks and Roads</p>			
E40	Consider various certification schemes that could help to minimise the use of fossil fuels: CEEQUAL, ISO 50001	<p>Planning and Construction</p> <p>Parks and Roads</p>			

## Measures for requiring fossil-free solutions in calls for tenders for construction work

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
E41	Demand/give weight to in competitive tenders descriptions from suppliers concerning strategies and measures aimed at: <ul style="list-style-type: none"> <li>• Reducing transport to and from building sites</li> <li>• Reducing the impact on neighbours during demolition and construction (noise, dust, traffic, etc.)</li> <li>• Reducing CO<sub>2</sub> emissions and local emissions from building sites</li> <li>• Prioritising renewable and zero-emission energy sources</li> </ul>	Planning and Construction Parks and Roads				
E42	Require machinery to meet standards: <ul style="list-style-type: none"> <li>• Step 4/Euro 6</li> <li>• Hybrid technology</li> <li>• Digital machine control so only the required amount is excavated</li> </ul>	Planning and Construction Parks and Roads				
E43	Require huts to be well insulated on a par with the requirements in TEK10 and have a system for lowering temperature at night and on weekends and holidays	Planning and Construction Parks and Roads				
E44	Require fuel tanks to be located such that any risk of spills during refuelling, leaks and collisions/pushing is prevented, possibly using the protection/barriers	Planning and Construction Parks and Roads				
E45	All construction projects must have objectives for energy use, energy sources and CO <sub>2</sub> emissions (including transport of materials, soils and waste to and from the building site)	Planning and Construction Parks and Roads				x
E46	The building site must be fossil-free in all projects: <ul style="list-style-type: none"> <li>• As many pieces of machinery and transport vehicles should electric/battery-powered.</li> </ul>	Planning and Construction Parks and Roads				x

	<ul style="list-style-type: none"> <li>• Electric tower cranes rather than diesel-powered mobile cranes are preferred. Where mobile cranes are used they should run on second generation biofuels</li> <li>• Any use of construction machinery with other fuel must be clarified with the client</li> </ul>					
E47	If, by 2021, the market has not evolved enough to make fossil-free building sites a possibility, the municipality will implement competitive tenders in which emissions are weighted so heavily that contractors with low emissions will be successful.	Planning and Construction Parks and Roads				x

*Measures for administrative cooperation and coordination*

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
E48	Establish an administrative interdisciplinary project group (Stavanger Property, Parks and Roads, Planning and Construction) for the purpose of reciprocal information, dialogue with suppliers, information about other regional stakeholders, participation in the regional plan for soil management, initiating/conducting pilot projects, registration and performance measurement.	Stavanger Property Parks and Roads Planning and Construction			x	
E49	Assess project in cooperation with the Procurement Department to achieve innovative procurements, local/regional or international	Stavanger Property Planning and Construction Procurement				
E50	Assess/initiate projects in cooperation with "Smart City" for the development of	Stavanger Property				

	road maps towards innovative procurements in European cities	Planning and Construction Smart City Procurement				
E51	Initiate formalised climate partnerships with Oslo, Bergen and Trondheim so that experiences can be shared and effective climate measures can be adopted quickly	BMU			x	

# 3 CONSUMPTION, REUSE, RECOVERY AND WASTE MANAGEMENT

## Primary objective

Resources are reused, recovered or destroyed with as little environmental impact as possible, and volumes of waste are kept as low as possible

## Secondary objective F1

Resources are kept in circulation for as long as possible

- The municipality's procurement should be based on the circular economy principle
- The proportion of wet organic waste in residual waste should be below 20 per cent. Material recovery of bioresources must be prioritised over incineration and utilised as locally as possible. Consideration must be given to whether the carbon proportion of biowaste can be stored permanently in the form of biochar.

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
F1	Arrange courses in home composting	Environment and Refuse Collection			→	
F2	Provide support for the purchase of warm compost bins	Environment and Refuse Collection			→	
F3	Conduct project involving the production of heat and biochar from municipal green waste	Stavanger Property Environment and Refuse Collection			→	
F4	Seminar on the circular economy for specialists and politicians	Environment and Refuse Collection			x	
F5	Assess waste advice outreach for households based on experiences from other cities	Environment and Refuse Collection				x
F6	Look at the possibility of reusing soils and asphalt in road and construction work,	Planning and				x

	with the aim of using the largest possible proportion	Construction Parks and Roads				
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## Secondary objective F2

Increasing the reuse of used objects, more repair

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
F7	Train drivers to deliver more bulky waste to Byttebua	Environment and Refuse Collection	IVAR		x	
F8	Arrange an annual "open garage sale" to coordinate private sales of used items	Environment and Refuse Collection			→	
F9	Conduct "repair cafés" in cooperation with voluntary organisations	Environment and Refuse Collection	Organisations		→	
F10	Initiate trials involving the use of reusable tableware rather than disposable tableware for food and beverages at festivals and/or other events	Environment and Refuse Collection	Organisers of festivals, etc.	Klimasats programme	x	
F10a	By 2020, the municipality will cease to use disposable packaging/plastic cutlery in its own premises, buildings and units.	Environment and Refuse Collection			x	
F11	Encourage new or established companies to offer tableware lending and possibly dishwashing services on a larger scale for events.	Environment and Refuse Collection		Grønt Vekstfond?		x
F12	Support on local initiatives for swapping, reuse etc.	Environment and Refuse Collection	Organisations		→	

## Secondary objective F3

### Less household food waste

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
F13	Develop Matsentral Rogaland so it becomes operative in 2018	Environment and Refuse Collection	Salvation Army and others		x	
F14	Arrange information campaigns aimed at consumers about how to buy and safely store food, as well as how to use leftover food	Environment and Refuse Collection	IVAR, other member municipalities		x	

## Secondary objective F4

### At least 75 per cent of all household waste is separated for material recovery

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
F15	Residual waste collected in Stavanger is sorted in IVAR's source separation plant	Environment and Refuse Collection	IVAR		x	
F16	Suggest IVAR consider a scheme for receiving and source separating bulky household waste so this can also be source separated to achieve the highest possible material recovery	Environment and Refuse Collection	IVAR		x	
F17	Ask IVAR whether residual waste from the municipality's own business activities can be source separated after collection in IVAR IKS's new source separation plant	Environment and Refuse Collection	IVAR			x
F18	Encourage companies that run private source separation plants to carry out as extensive source separation for material recovery as possible	Environment and Refuse Collection			x	

## Secondary objective F5

### Hazardous waste and WEEE is properly managed

- The quantity of hazardous waste collected will be increased from 4 kg (2016 figure) to 5 kg per resident per year.
- The proportion of hazardous waste and WEEE in residual waste from households will be kept below 0.5 per cent in total
- At least 90 per cent of residents are aware of how they should properly dispose of hazardous waste and WEEE

<b>ID</b>	<b>Measures</b>	<b>Respon- sibility Stavanger Munici- pality</b>	<b>External stakeholders</b>	<b>Funding</b>	<b>2018- 2019</b>	<b>2020- 2022</b>
F19	Information campaigns on the safe disposal of hazardous waste and WEEE	Environ- ment and Refuse Collection	IVAR			x

## 4 GREEN AREAS AND BIODIVERSITY

Concrete objectives and measures for this theme will be established in a separate Green Plan.

## 5 AGRICULTURE

Concrete objectives and measures for agriculture will be defined in more detail after the merger with the municipalities of Rennesøy and Finnøy in 2020.

## 6 AIR QUALITY

### Objective

1. The quality of the air is no longer hazardous for residents – there is no longer a need for health warnings.
2. The limit value for the largest particles is not exceeded more than seven times in one year.

### Measures adopted by Stavanger Municipal Executive Board and City Council in April 2016:

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
L1	Evaluate effect of studded tyre charge, which was introduced from autumn 2017	Environment and Refuse Collection Stavanger Parking	Directorate of Public Roads (counting)		x	
L2	Establish new measuring stations: <ul style="list-style-type: none"> <li>• Saxemarka/Schancheholen</li> <li>• Forus/Godeset</li> </ul>	Environment and Refuse Collection	Environmental health care		x	
L3	Evaluate a grant scheme for the procurement of clean burning wood stoves to replace old stoves	Environment and Refuse Collection	Environmental health care		x	
L4	Road cleaning and dust binding on days with poor air quality	Environment and	Environmental health care			

		Refuse Collection Parks and Roads	Norwegian Public Road Administration		
L5	Study reduced speeds and environmental limits with respect to impact on pollution on defined stretches of road	Environment and Refuse Collection	Environmental health care Norwegian Public Road Administration		x
<i>New initiative:</i>					
L6	Campaigns against parking with the engine running	Environment and Refuse Collection Health Director			

## 7 NOISE

The noise action plan, which was adopted in 2018, describes most of the noise-exposed areas in more detail. The plan shows which areas should be prioritised in order to reduce noise. These are kindergartens, schools, communal and play areas in residential areas and outdoor areas, as well as recreation areas and quiet areas.

Measures that Stavanger Municipality is responsible for will be assessed in the action and economic plan (HØP). The municipality encourages other site owners to conduct measures at their sites as well. This applies to the Norwegian Public Road Administration, BaneNOR, Avinor and Stavangerregionen Havn IKS.

## 8 AQUATIC ENVIRONMENT

Objectives and measures for water bodies are set out in Stavanger's master plan for the water supply, aquatic environment and wastewater (2011-2022) and the regional plan for water management (2016-2021). These also describe the performance indicators. The master plan will be revised in 2018. The revision will be based on a new objective of ensuring that less than 2 per cent of produced pollutants will be discharged into overflow, i.e. emissions of diluted effluent into the sea. The current national industry target is that the amount should be less than 5 per cent.

Stavanger Municipality, via Parks and Roads, enters into agreements with schools, organisations and others on beach clearance and takes care of the rubbish collected.

More clearly specified objectives, means and measures for sea and beach areas will be established in the Green Plan, which will be drawn up in 2018/2019.

## 9 AQUACULTURE

Concrete objectives and measures for aquaculture will be defined in more detail after the merger with the municipalities of Rennesøy and Finnøy in 2020.

## 10 ENVIRONMENTAL TOXINS IN PRODUCTS

### Objective

Consumers in Stavanger are familiar with environmental toxins found in everyday products and with environmentally-friendly alternatives.

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
M1	Consumer information about environmental toxins in everyday products, coordinated with sustainable consumption and waste management campaigns	Environment and Refuse Collection	Norwegian Environment Agency, County Governor		→	
M2	Information about eco-labelled products in the internal Climate and Environmental Plan for Stavanger Municipality	Environment and Refuse Collection			x	

# 11 CONTAMINATED GROUND ON SEABED AND ON LAND

## Objective

By 2030, pollutants have been removed or covered over so they cannot be dispersed further. At the same time, it is safe to eat fish you catch and seafood you collect from the entire coastal area around Stavanger, such that the seafood warnings are lifted.

The warning map and requirement for action plans are known to responsible people or companies that are going to excavate or carry out construction work in

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
FG1	Conduct risk assessments of contaminated seabed	Environment and Refuse Collection	Norwegian Environment Agency, County Governor		→	
FG2	Cover over contaminated seabed or other measures in areas where this is required	Environment and Refuse Collection	Norwegian Environment Agency, County Governor		→	
FG3	Publish the base map on websites and contact relevant bodies, internal and external	Environment and Refuse Collection			x	
FG4	Strive to ensure that all ground/soil masses that are lightly contaminated and must be treated, are dealt with regionally in appropriate storage areas	Environment and Refuse Collection			→	
FG5	Follow up the surveying and monitoring of sources of emissions of pollutants into the sea	Environment and Refuse Collection			→	

## 12 PLASTIC LITTER

### Objective

Plastic litter and runoff containing microplastics have been minimised in Stavanger.

The use of single-use plastics for food and beverages in food service establishments in Stavanger has been reduced.

Consumers in Stavanger have good access to knowledge about microplastics in everyday products and how the environmental impact from these can be

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
P1	New artificial grass pitches and old pitches ready for replacement will be replaced with environmentally-friendly alternatives as soon as such materials with good usage properties are developed.	Sport Parks and Roads			→	
P2	Ensure that runoff containing microplastics from existing artificial grass pitches is minimised before these are eventually replaced by environmentally-friendly materials	Sport Parks and Roads			→	
P3	Ban the sale or use of helium balloons and balloon drops on municipal property in Stavanger, and seek to incorporate this into the police regulations and the events manual	Environment and Refuse Collection Parks and Roads			x	
P4	Contact the hospitality industry in the city centre to look at the possibility of using multi-use or biodegradable packaging for take away food	Environment and Refuse Collection Parks and Roads			x	
P5	Remind food service establishments in the city centre of their duty to clear up in line with police regulations	Parks and Roads			x	
P6	Information campaign for consumers about microplastics in everyday products and how to avoid these	Environment and Refuse Collection			x	

P7	Work to reduce the amount of plastic packaging, construction plastic, etc. that ends up in nature	Environment and Refuse Collection Parks and Roads Stavanger Property Planning and Construction			
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## 13 RADON

### Objective

All buildings that Stavanger Municipality owns or leases are below the action threshold for radon of 100 Bq/m<sup>3</sup>

Municipal buildings where radon persistently exceeds the thresholds have been fitted with permanent solutions to avoid radon seeping into the building.

The municipality's residents know they can investigate radon levels in their home and receive information about relevant consultants by contacting the municipality.

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
R1	Surveys and measures in schools and kindergartens	Stavanger Property			x	
R2	Surveys and measures in other municipal buildings	Stavanger Property			x	
R3	Require radon documentation for all buildings Stavanger Municipality leases	Stavanger Property				
R4	Information for the population about radon measurement and possible action through newspaper adverts and web pages	Health Director Environment and				

		Refuse Collection Stavanger Property			
R5	Refer private individuals wishing to take action against radon in their home to a company that can help	Health Director Stavanger Property	Environmental health care		

## 14 CLIMATE CHANGE ADAPTATION

A decision has been made to draw up a separate policy and this will provide the basis for concrete plans and measures.

## PARTICIPATION AND INVOLVEMENT OF RESIDENTS

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
MI1	Work to increase capacity with respect to communication, focusing on climate and environmental communication and assistance for technical departments	Environment and Refuse Collection		HØP		
MI2	Develop a comprehensive communication strategy for climate and environmental issues for Stavanger Municipality	Environment and Refuse Collection Communication	Being assessed	HØP	x	

# THE MUNICIPALITY AS AN ENVIRONMENTAL AND CLIMATE ADVOCATE

ID	Measures	Responsibility Stavanger Municipality	External stakeholders	Funding	2018-2019	2020-2022
K1	Develop a climate budget for the plan period and present annual climate accounts	Environment and Refuse Collection				
K2	Establish a climate and environmental fund, with the purpose of incorporation into the action and economic plan from 2019	Environment and Refuse Collection			x	
K3	Innovative procurements: The Procurement Department will work with other specialist departments to identify development areas and start work on these	Procurement				
K4	Develop Climate and Environmental Action Plan for the municipality's own activities	Environment and Refuse Collection			x	
K5	Implementing environmental management in all of the municipalities' units, based on Green flag or Eco-Lighthouse eco-certification	All, but will be followed up by Environment and Refuse Collection				
K6	Study establishing an environmental award presented by Stavanger Municipality and present a case for political consideration with a perspective of the first award being presented in 2018	Environment and Refuse Collection			x	
K7	Review environmental networks and agreements the municipality is part of to check appropriateness and possibly greater involvement	Environment and Refuse Collection Business			x	

K8	<p>In connection with the annual reporting on the Climate and Environmental Plan, a prioritised list will be presented with the five most important measures that could have been undertaken by a higher public authority (county/state), and which, in the opinion of the municipality, would have contributed to the biggest reduction in GHG emissions in Stavanger Municipality.</p>	Environment and Refuse Collection				
K9	<p>As complete an assessment as possible will be provided of how Stavanger Municipality is performing in relation to the established objectives for GHG cuts.</p> <p>This assessment will propose any remedial (reinforced/adjusted/additional) measures within the municipality's jurisdiction. An assessment may also be provided of any county authority or national measures that would have increased the likelihood of Stavanger Municipality achieving its established objectives.</p>	Environment and Refuse Collection				
K10	<p>Assess a special support scheme for homeowners who want to establish solar cell systems in their building.</p>	Environment and Refuse Collection Stavanger Property			x	





STAVANGER KOMMUNE