

Rotterdam Climate Agreement

Join in the Energy switch

+

 **Energieswitch**
Rotterdam Climate Alliance

www.energieswitch010.nl



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Foreword

Three out of four Rotterdammers are worried about the consequences of climate change. This number has steadily increased in recent years, as shown by our local Omnibus Survey 2019. Rotterdammers are particularly concerned about rising sea levels and the consequences of climate change for plants and animals.

This isn't surprising. Rotterdam lies in the middle of a river delta and is therefore relatively vulnerable to climate change. The first effects of a changing climate are already noticeable in the form of heavier rainfall and longer periods of drought.

In addition, the city's area with its industry and port, contribute around 20% of the national CO₂ emissions of the Netherlands.

This is why the City Council has made tackling climate change a top priority. Energy transition is a key topic in the coalition programme 'New Energy for Rotterdam' and the city council fully endorsed the objectives of the Paris Climate Agreement in the Council Agreement on Energy Transition at the beginning of this year.

As the local government, we are fully aware that we cannot achieve the energy transition on our own. That is why we launched the Rotterdam Climate Alliance at the beginning of this year, a partnership with more than 100 companies and civic organisations whose main task is to write a Rotterdam Climate Agreement.

In the past year, more than 1,000 Rotterdammers have written the Rotterdam Climate Agreement during more than 50 meetings under the leadership of the five chairpersons of the Rotterdam Climate roundtables. The result is an achievement of which all those involved can be proud. With almost fifty climate deals, that will boost the reduction of greenhouse gases and stimulate a CO₂-free economy, we want to transform Rotterdam into a front-runner in sustainability. We are reversing CO₂ emissions from annual increases into sharp reductions.

The plans in the agreement not only ensure that we halve CO₂ emissions over the next 10 years, but also that we use the energy transition as a kick-start for new business activity and additional jobs. Together we are building a green and healthy city and a future-orientated port. We're also working hand in hand to combat energy poverty and transport poverty through the energy transition.

The Rotterdam Climate Agreement is the result of a year's hard work. However, it is not the end of a process, but rather the beginning of a new era. We are at the beginning of a far-reaching transition of society and economy that we are going to accomplish together over the next ten years. The energy switch has begun!

Arno Bonte

Vice Mayor for Sustainability, Clean Air and Energy Transition





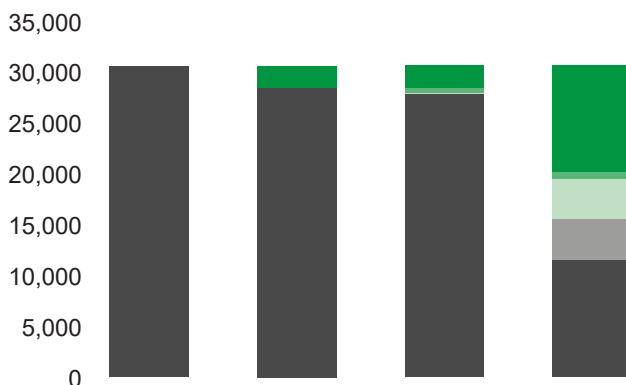
Introduction

The Rotterdam Climate Agreement is ready. The five climate roundtables drew up 49 climate deals with concrete measures that together will reduce CO₂ emissions by half over the next 10 years.

The climate deals will ensure Rotterdam's objective of achieving a trend reversal in CO₂ emissions within four years: from an annual increase to a sharp decrease. If all the plans are implemented, by 2030, CO₂ emissions will be reduced by 49.6% compared to 2017.

Rotterdam's ambition is even greater, which is to bring its CO₂ emissions below 12,000 kilotons by 2030. In order to attain this ambition, even more is needed. Strong support from central government is essential in achieving this. Clarity about the CO₂ tax, effective heating legislation and modifications in transport are important preconditions.

Impact graphic Rotterdam Climate Agreement



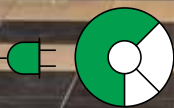
■ Certain	-	2,149	2,273	10,630
■ Expected	-	9	311	672
■ Intended	-	10	157	4,152
■ Remaining	-	-	-	3,983
■ CO ₂ emissions	31,167	29,021	28,485	11,832

Figures in kiloton CO₂



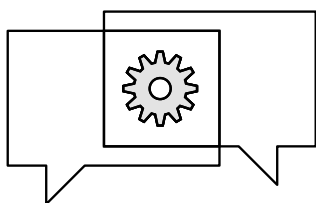
Stelling 1: Kritische zin

- 1. Het is belangrijk om te weten dat er nog veel te doen is op het gebied van de zorg voor mensen met een beperking. Het is belangrijk om te weten dat er nog veel te doen is op het gebied van de zorg voor mensen met een beperking.
- 2. Dit is het belangrijkste punt van de presentatie. Het is belangrijk om te weten dat er nog veel te doen is op het gebied van de zorg voor mensen met een beperking.
- 3. Het is belangrijk om te weten dat er nog veel te doen is op het gebied van de zorg voor mensen met een beperking.





Facts & Figures

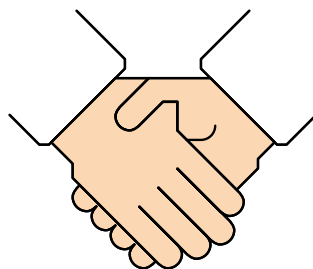


5 climate roundtables

More than 50 meetings

More than 100 companies and organisations

More than 1,000 Rotterdammers



49 climate deals

Break in the trend:
within 4 years of increase
to decrease in CO₂ emissions

49% CO₂ reduction in 2030

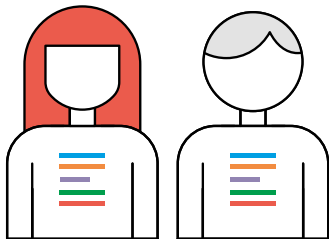
New sustainable business activity

New jobs

Tackling energy poverty

Reducing transport poverty

Clean air



Residents

Entrepreneurs

Owners' Associations

School children

Students

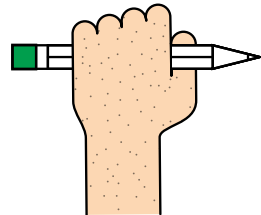
Professionals

Scientists

Councillors

Area committees

District councils



[Energieswitch010.nl](https://www.energieswitch010.nl)

Energieswitch-meetings

Climate Cafes

Conferences

SME drinks

School debates

City Makers Congress

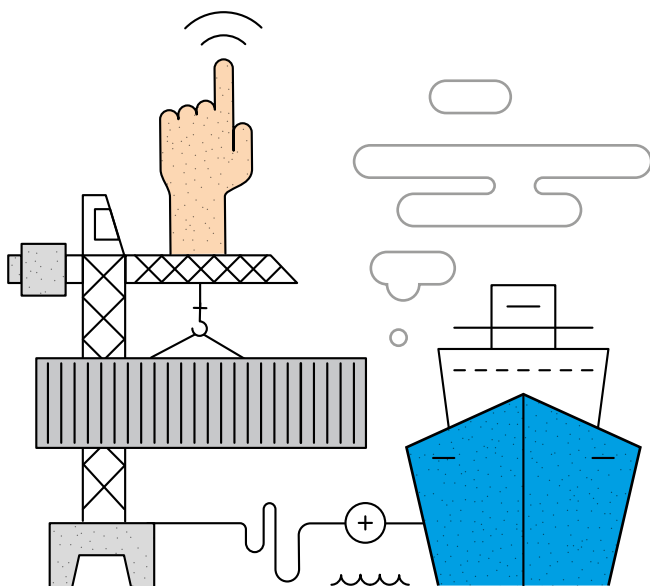
Climate call meetings

Energy Port Conference

Expert meetings



The port and industry



We'd like to make Rotterdam the most sustainable port in the world and we're doing a lot to achieve that! The Port and Industry climate roundtable is broadly composed of the Port of Rotterdam Authority, energy companies, the Province of Zuid-Holland and the municipality, companies from the Port of Rotterdam Industrial Complex, energy (infra) companies, other governments, knowledge institutions, the Nature and Environment Federation Zuid-Holland and the DCMR Environmental service. We had previously developed a joint plan in the National Climate Agreement. We are continuing to build on that.

The first step: we start with efficiency measures. Residual heat will be used to heat homes, industrial buildings and greenhouses. CO₂ will be captured and stored under the North Sea. The second step: change the energy system. Many industrial processes require high temperatures. This necessitates affordable electricity from sustainable sources such as sun, wind and water. And the third: the transition from fossil fuels to sustainable energy sources. The challenge is enormous, but so are the opportunities for creating a new economy with high employment and a strong competitive position for Rotterdam.

"The Rotterdam region has considerable added value for the national economy. The port- and industry cluster is the location for many international companies, it provides direct and indirect employment for almost 400,000 people, serves a large hinterland and is still growing in innovative strength.

Developing a climate approach that drastically reduces greenhouse gases while maintaining the value of this area is a difficult issue. The Port and Industry climate roundtable was able to use the input from the regional industry working group for the national Climate Agreement as a basis. The roundtable added critical success factors for the effective realisation of projects. As chair, I can conclude that we have succeeded in this.

It's now a question of harnessing the rolled-up sleeves mentality of Rotterdam.

With a broad composition, the members of the roundtable have worked intensively on a series of climate deals that help get planned projects off the ground faster. An agenda has also been drawn up with what is required from various governments, at municipal, provincial, national and European level.

The publication of this Rotterdam Climate Agreement does not mean the end of the working group. The members have expressed their wish to continue, because the implementation of the projects requires good coordination and there's still much to come from the port and industry.

For example, the work of the national Taskforce Infrastructure Climate Agreement, but also the new SDE++ scheme and other regulations. I look back on this part of the process with great pleasure. It's now vital to maintain the no-nonsense Rotterdam mentality and to reinforce each other in its implementation."

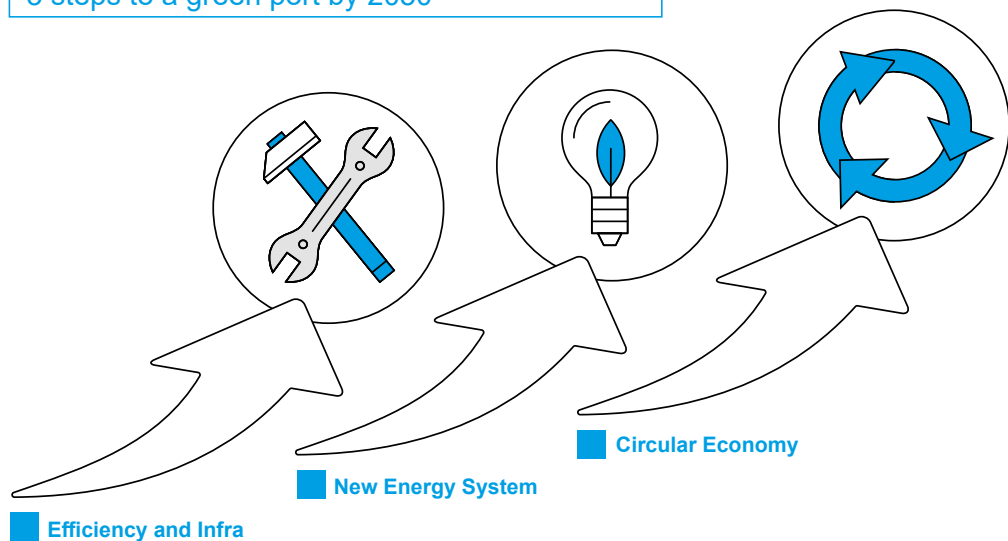
Alice Krekt

Chair of the climate roundtable Port and Industry



Alice Krekt has been programme director of Deltalinqs Climate Programme since 2017. Deltalinqs is the business association of the Rotterdam port and industrial companies. Alice has a lot of experience in implementing public-private partnerships at the intersection of economy and sustainability.

3 steps to a green port by 2050



Climate deals

#Climate deal 1 Investment agenda for energy transition in the Port Industrial Complex

The Rotterdam region requires many investments. To this end, we are putting together an investment agenda. Two things have to be done simultaneously: In the short term, the energy infrastructure must be adapted and realised, such as reinforcement of the electricity grid, hydrogen- and CO₂ transport and storage, expansion of heating and steam networks. At the same time, projects of sufficient scale must be launched or accelerated. This will justify the initial infrastructure investments and create sufficient momentum to continue construction after 2025. This then stimulates investments by companies that need certainty about the conditions. We're making an overview of all the planned and required projects and what is needed financially.

#Climate deal 2 Work- and training agenda for the energy transition

Human capital is a prerequisite for the success of the energy transition. The changes in the labour market caused by the energy transition will require an adaptive education- and labour market. In such a labour market, in which new opportunities for the economy and employment are to be exploited and a lack of well-trained personnel is to be avoided, dialogue and joint efforts by regional government (municipality and province), educational and knowledge institutions and the business community are essential. The implementation is in the hands of the organisation of the Rotterdam Apprenticeship Agreement.

#Climate deal 3 Platform for accelerating actions for energy transition in the Port and Industrial Complex

The *Platform for accelerating actions* will promote innovative projects, among other

things by providing support in finding funding and removing barriers in legislation and regulations. Together, the parties will ensure that the projects aimed at the implementation of hydrogen, industrial electrification, industrial residual heat and circular processes are accelerated to the next phases (from pilot to upscaling) in investment projects.

#Climate deal 4 **Large-scale production, importation and utilisation of hydrogen**

The parties will work together to carry out projects aimed at the implementation of hydrogen. One such project is H-vision, which produces blue hydrogen from natural gas and refinery gas. The large-scale production of blue hydrogen will enable industry to become more sustainable and the hydrogen economy to take off. We also want to boost the production of green hydrogen. We are currently working on more and larger electrolysers which will be necessary to achieve this. The integration of offshore wind-generated electricity is a crucial part of the plan.

#Climate deal 5 **Industrial electrification**

Industrial processes that use heat up to around 300 degrees Celsius are to be electrified as much as possible to replace natural gas. Wind-at-sea generation creates considerable amounts of electricity that can be more easily absorbed in industry than in the rest of the energy system. The resulting backbone for electrification can also balance the system. A field lab is being developed to stimulate innovation. We are also working on pilot projects and the development of a sustainable Backup Boiler for the Botlek steam network.

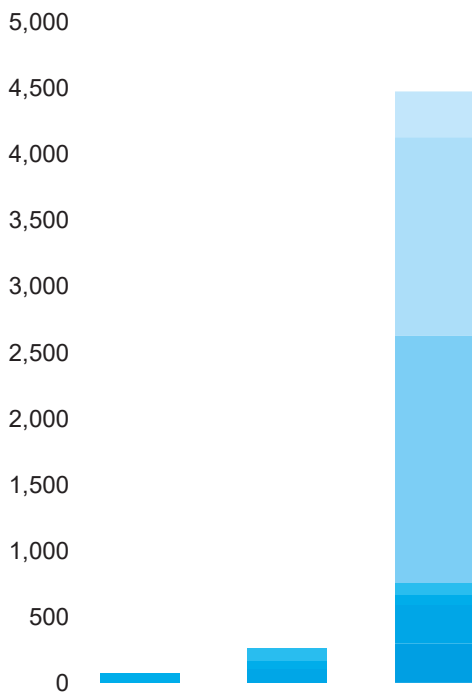
#Climate deal 6 **Sustainable heating from industry**

We are contributing to the realisation of a heat transport network in Zuid-Holland, through which we can supply heat to cities in Zuid-Holland, the horticulture sector and businesses using residual heat, heat from geothermal energy and other local heat sources. This lays the foundation for making the energy system more sustainable, ensures security of supply and acts as a catalyst for (local) sustainable source development. All the parties are making every effort to remove obstacles to the rollout of the heat network.

#Climate deal 7 **Utilisation of residual flows, biomass, CO₂ in the Port and Industrial Complex**

We are focused on the utilisation of residual flows, biomass and CO₂ in industrial processes. The industry in the port of Rotterdam will eventually be largely based on circular and renewable carbons, sustainable biomass and hydrogen. The port will then be the national and international hub for the import, export, distribution and value creation of residual flows, CO₂ and sustainable biomass. The realisation of the first new factories and value chains, organised in clusters to support the raw materials transition, are important building blocks on the way to a circular raw materials economy.

Chart of measures



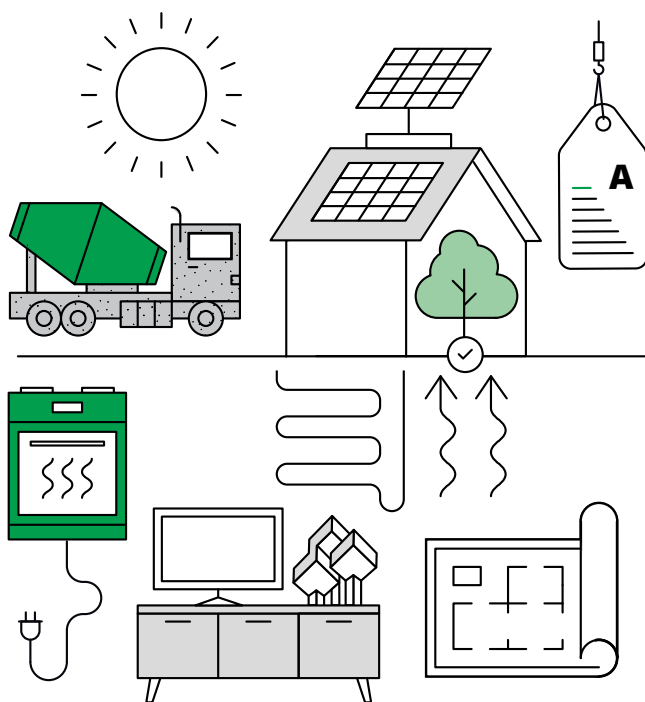
■ Electric boilers	-	-	300
■ Heat pumps	-	100	300
■ Circular Steam Project	70	70	70
■ Steam Pipe Botlek	-	100	100
■ Porthos - capture and storage	-	-	1,890
■ Hydrogen: H-Vision	-	-	1,520
■ Electrolyser	-	-	350

Figures in kiloton CO₂





The built environment



Together we will:

- **make 15,000 homes more sustainable;**
- **make (or prepare) 10,000 homes to be free of natural gas; and**
- **organise commitment to the medium- and long-term objectives**

To do that, we have to work together. That's why the climate roundtable for the Built Environment consists of a number of passionate Rotterdammers from the business community and the municipality. We have been formulating objectives and developing ideas for some time now.

"Compared to the challenge for the other roundtables, the one for the Built Environment is relatively small in terms of CO₂ reduction (0.4 Mton), but complex due to the large number of parties involved and new questions and the balancing of interests that have become visible through this process. It also directly affects the living environment of the Rotterdammers and entrepreneurs. It was therefore necessary from the start to bring focus to the activities.

It also directly affects the living environment of the Rotterdammers and entrepreneurs.

In the first instance, we focused on the City Executive's objectives to achieve 10,000 homes which were (prepared to be) free of natural gas and 15,000 homes to be made more sustainable. Attention was therefore focused, first and foremost, on the (large) professional real estate parties in the city, in order to achieve this ambition together with them. This also explains the large proportion of this group included in the climate deals.

In addition, we mapped out what initiatives the municipality and parties in the city are taking to achieve the reduction target in 2030, on the way to a climate-neutral Rotterdam in 2050. Given the scale of the task, this study is far from complete and is partly dependent on third-party initiatives. However, the initiatives and contacts that have already been established show broad enthusiasm and drive among Rotterdammers to give shape to the energy transition.

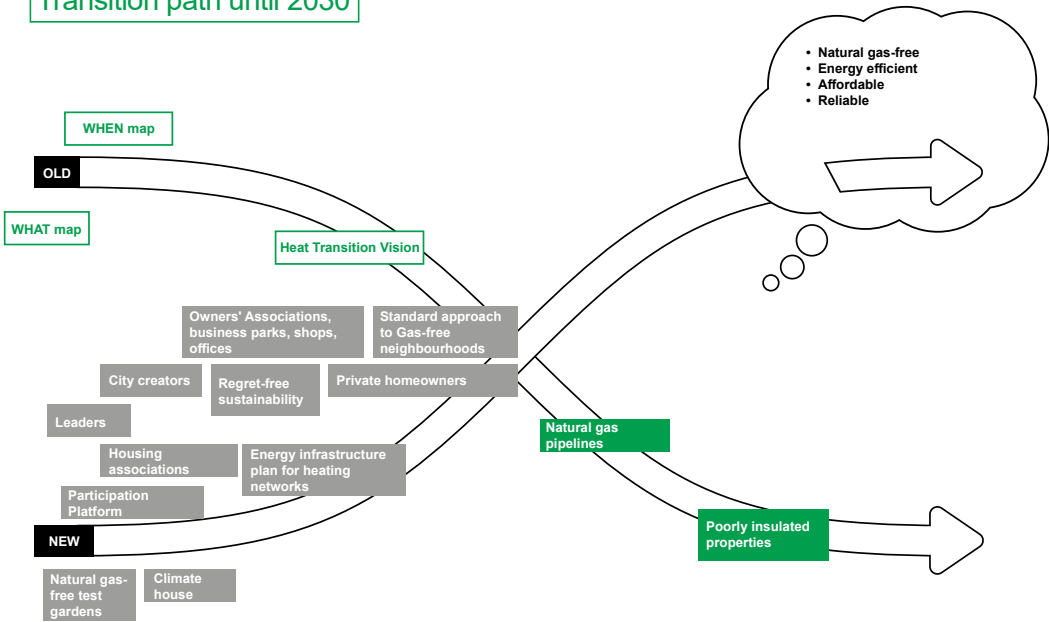
At the present time, a lot of national legislation is still being developed. At the start of the climate roundtable, the national Climate Agreement had not yet been adopted. Roles, tasks and responsibilities were (and are) therefore not always clear. There was an obstacle to reaching further climate deals, particularly with regard to municipal authority and finances in relation to the construction of heat networks. In spite of this uncertainty, we still managed to implement the Municipal Executive's objective, which provides a solid foundation for a transition path towards 2030."

Alex Moret
Chair of climate roundtable on the Built Environment



Alex Moret has extensive experience in area development and has held various positions in this field at the Municipality of Rotterdam and at several housing associations. Prior to 1 April 2019, Alex worked as Director of Portfolio Management at Woonstad Rotterdam housing association, where he was responsible for the programme on sustainability, energy transition and circularity, among other things.

Transition path until 2030



Climate deals

#Climate deal 8 Houses, offices and shops natural gas-free and sustainable

Bouwinvest is a nationally operating property investor with approximately 1,200 homes, 2 office buildings and 2 shopping centres in Rotterdam. By 2045, they will ensure that their entire property portfolio is energy-neutral and natural gas-free. In collaboration with the Municipality of Rotterdam, they are also developing new mobility solutions to make the city healthier and more attractive. In total, this involves over 350 homes and 70,000 m² of commercial property.

#Climate deal 9 Havensteder natural gas-free and sustainable

The housing association, Havensteder, intends to make 2,300 homes free of natural gas in Rotterdam. They are investigating whether 1,500 homes in Bospolder-Tussendijken can be connected to the district heating network. Through improvements or replacement, a further 800 homes will become natural gas-free. In addition, Havensteder is investing heavily in boosting the insulation levels of homes. Havensteder is investing in climate adaptation and is investigating the opportunities for circularity. In doing so, Havensteder is making an important contribution to CO₂ reduction in Rotterdam.

#Climate deal 10

Hoek van Holland goes natural gas-free

The Woningbouwvereniging Hoek van Holland (housing association) will work together with the Municipality of Rotterdam to investigate the possibilities of a heating network or other sustainable sources. It is also looking into the possibility of connecting other property owners with the aim of reducing costs and taxes.

#Climate deal 11

Sustainability toolbox for estate agents

A toolbox has been designed together with three NVM estate agents. The purpose of the toolbox is to give easily understandable information and to show possibilities and opportunities about sustainability and going natural gas-free. The brokers can use this toolbox educate their customers and thus stimulate the energy transition.

#Climate deal 12

Rotterdam Centre natural gas-free and sustainable

Manhave owns homes, shops and offices in Rotterdam. They are working towards a climate-neutral property portfolio by 2030. In order to achieve this, together with other stakeholders and property owners, they will investigate how this can be realised in the city centre. In 2023, they will also be opening a sustainable boutique hotel with a roof garden accessible to the public. In total, this will involve approximately 230 units. Manhave is also investigating whether solar panels can be installed on part of its property holdings.

#Climate deal 13

110-Morgen goes natural gas-free and sustainable

Onze Woning is a small housing association with about 1350 homes. This association wants to make its property more sustainable and natural gas-free. Together with the Municipality of Rotterdam they are investigating possibilities to connect to district heating or other sustainable sources. They also want to link up with other studies and initiatives in the 110-Morgen district of Rotterdam.

#Climate deal 14

Participation platform

To stimulate initiatives in the energy transition, together with the Municipality of Rotterdam, we are creating a consultative platform with a digital location for the exchange of information, tips and knowledge in the field of this energy transition. This will allow a more promising implementation of initiatives in areas such as sustainability, clean energy, circularity and employment and will accelerate and scale up this transition.

#Climate deal 15

Rozenburg goes natural gas-free and sustainable

Ressort Wonen wants to connect its entire property portfolio in Rozenburg, about 2300 houses, to district heating. It also wants to be the driving force in getting the adjoining private houses connected. Several homes will be fitted with solar boilers and solar panels.

#Climate deal 16 Prinsenland/Het Lage Land natural gas-free

The Rotterdam portfolio of Vesteda, an institutional investor with rental properties in the middle and upper segment, is largely already connected to district heating. The remaining properties that are still connected to natural gas will be included in the first tranche of the Prinsenland/Lage Land area approach in the transition to district heating. It involves 156 units.

#Climate deal 17 Woonbron Natural gas-free and sustainable

In Rotterdam, Woonbron wants to make a substantial contribution to CO₂ reduction and to making their Rotterdam housing stock free of natural gas. In addition to insulating homes and making installations and lighting more sustainable, Woonbron is taking extra strides up to 2030:

- Making 3100 homes free of natural gas
- In Groot-IJsselmonde, 1950 homes will be connected to the heating network by 2025.
- In Hoogvliet, Woonbron intends to connect another 350 homes.
- By 2030, another 800 homes will be made natural gas-free.

Climate adaptation, solar energy and circularity: Woonbron will work with the municipality and residents on climate adaptation measures. A first pilot project is under way in Heijplaat and also at a new-build project in IJsselmonde.

Tenants of single-family houses already have the option of opting for solar panels. Woonbron wants to expand the possibilities for residents of residential buildings.

Woonbron promotes the reuse of materials through circular demolition practices. In the coming period, they will be investigating how circularity can also be applied to other construction phases. Woonbron works closely with all parties involved, such as the tenants and the Owners' Associations in order to ensure the success of projects.

#Climate deal 18 Woonstad Rotterdam natural gas-free and sustainable

Woonstad Rotterdam has been working for a long time on the sustainability of its (rental) homes in Rotterdam. This includes improved insulation, the installation of solar panels and, already, more than 50,000 LED fixtures and, where possible, making homes natural gas-free. Cooking then becomes electric and we are looking for a different solution for the hot water and heating. In Rotterdam, the latter is generally done by connecting to the heating network.

In addition, focus is also placed on climate adaptation and circularity.

- **Natural gas-free**
As part of the climate deal, Woonstad Rotterdam wants to make an effort to make approximately 8000 homes free of natural gas in the period up to 2030. Part of this will take place in the areas of Pendrecht and Prinsenland / Het Lage Land. The rest will be realised in other districts, including Ommoord, Noord, Overschie, Oud Charlois and Rotterdam-Zuid. In this way, Woonstad Rotterdam is making a significant contribution to reducing CO₂ emissions in Rotterdam. They're contributing to a healthy city!
- **Climate adaptation, circularity, LED lighting and solar panels**
In addition to making homes free of natural gas, Woonstad Rotterdam wants

to investigate in the Bloemhof and Oude Noorden districts, among others, which (extra) measures are needed to properly deal with heavy rainfall during renovation or new construction, so that streets and houses remain dry. A project in Overschie is being redeveloped circularly and Woonstad is starting various pilots involving circularity in maintenance, renovation and new construction. Woonstad Rotterdam is also installing LED lighting in all its complexes (completed in 2021) and, where possible, solar panels.

What's needed? We cannot accomplish these measures on our own. Together with the Municipality of Rotterdam and other parties involved, we will have to come up with new solutions that will require courage and perseverance.

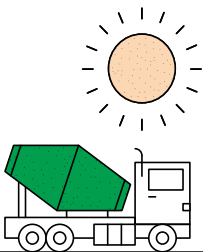
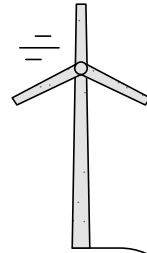
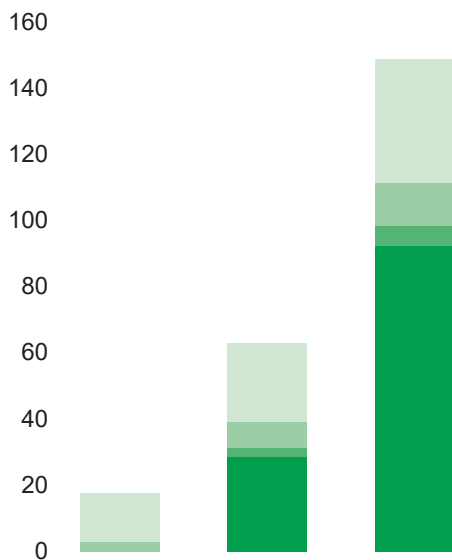


Chart of measures



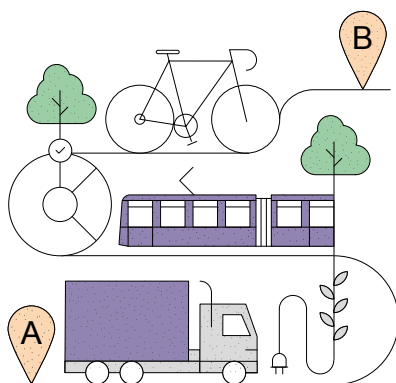
■ Climate deals natural gas-free - intended	-	29	94
■ Climate deals natural gas-free - expected	-	3	6
■ Climate deals natural gas-free - certain	3	8	13
■ Renovation WoCo (Housing Associations)	15	24	38

Figures in kiloton CO₂





Mobility



A CO₂ neutral, healthy, inclusive and affordable mobility in Rotterdam by 2030. Where the air is clean, we move around more and all Rotterdammers join in and contribute. We will achieve this by making more space for pedestrians and cyclists and improving public transport. In addition, we will reduce car traffic and ensure that sharing becomes the norm. The arrival of electric vehicles will help to achieve this. Rotterdam is already at the forefront with the Rotterdam Mobility Approach, City Lounge, parklets, construction of car charging infrastructure, cycling policy and the introduction of shared vehicles. This will create employment and new business activity. Moreover, the knowledge and experience we gain can be exported.

On top of this, the Mobility climate roundtable wants to make a contribution by making the transition to mobility without (CO₂) emissions faster and with the greatest possible social benefit. We have done this by formulating a shared ambition and developing a number of campaigns (deals) to help make emission-free and shared mobility and logistics easier, more affordable and more fun. In addition to these deals, there are many other promotions, ideas and developments that have not yet been worked out. But there are still major challenges and opportunities, also in the field of inland shipping and in the port area. Our plans are therefore primarily an extra impulse for the debate, innovation and progress in the field of mobility in Rotterdam. We therefore invite everyone to join us in our ambition to make Rotterdam accessible, healthy and inclusive. Together we will shape a step by step emission-free and inclusive mobility.

The deals presented below are agreed activities by the interested parties with the commitment to make them a reality in 2020. But there's still much to be done and in many cases contracts, budgets and political decision-making are not yet available. No rights can therefore be inferred from the concluded deals; they express the intention of all the parties involved to make this possible.

"As chairman, together with a fantastic team of involved civil servants, I have enjoyed working on the Rotterdam Climate Agreement, which I prefer to call a transition agenda. It is the result of the efforts of dozens of parties, each in their own way or level, who are already actively engaged in improving Rotterdam's mobility and making it more sustainable. Over the past six months, we have worked together on concrete breakthroughs that will help speed up and give direction to the mobility transition in Rotterdam. In doing so, we want to strengthen the positive changes that are already underway in Rotterdam: from an economic viewpoint, from social agendas or from an ecological perspective. If there is one thing that emerges from all the meetings and discussions, it is the opportunities that this transition offers the city, the business community and its citizens.

I call it a transition agenda because it is not an agreement, but also because both the process and the outcomes are not representative of the task and all the developments in the field of mobility. In the short time available, we focused primarily on those parties that are already taking action. We together examined what additional impulses and actions can be taken to help the broader social transition move more quickly in the right direction. Alongside the larger meetings, numerous smaller talks, consultations and working sessions also took place. Aimed at working out deals, but perhaps even more so to get to know each other better, to enable new collaborations across the boundaries of policy, entrepreneurship and society, and to involve new parties. Much of what this process has delivered is therefore not yet visible: in addition to the positive connections and shared support for collaboration in this transition in the longer term, there are still dozens of ideas and

actions that have not ended up as deals in this document.

I am proud of the results and inspired by the entrepreneurial strength, involvement and commitment of all parties and individuals in this process. But we are far from finished. That's also the energy that is needed: the transition to a sustainable inclusive economy is a road full of surprises, uncertainties and resistance.

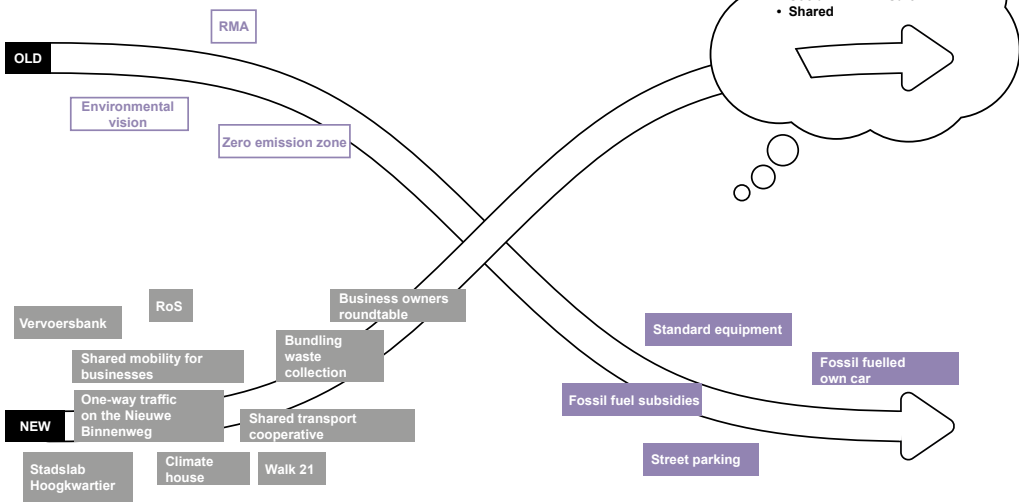
With all the Rotterdam energy and experimental power that is now being bundled into policy, business and society, the foundations have been laid. The deals represent important steps forward in this respect. I look forward to working with all the parties involved, our civil servants and the city to continue along the transition path we have outlined in the coming years."

Derk Loorbach
Chair of climate roundtable Mobility



Derk Loorbach is director of DRIFT and professor of Socio-economic transitions at the Erasmus University. Derk is one of the pioneers of transition management as a new way of governance for sustainable development.

Transition path until 2030



This transition path is derived from Loorbach, D., Frantzeskaki, N., & Avelino, F. (2017). Sustainability transitions research: transforming science and practice for societal change. *Annual Review of Environment and Resources*, 42, 599-626.

Climate deals

#Climate deal 19 Transport Bank

On the Pretoriaaan in Rotterdam-Zuid there is already a bicycle bank. Two electric cars have been added to this service. These cars can be borrowed by members of this transport bank. This reduces distances to the labour market and allows more people to benefit from mobility.

#Climate deal 20 Electric car sharing for everyone

At the end of 2019, a car-sharing programme will be rolled out with 100 electric cars. You can reserve a car via an app and leave it anywhere in Rotterdam after using it. This concept will be linked to business car-sharing initiatives and initiatives by residents of apartment complexes and residential districts.

#Climate deal 21 Multimodal district- and station hubs

Shared transport will be more straightforward and more accessible. That is why multimodal hubs will be placed in districts, at housing complexes, companies and railway stations.

At these hubs you will be able to find shared electric cars, shared bicycles and shared cargo bikes.

This will lead to an increasingly broader uptake in shared mobility in the city.

#Climate deal 22 Shared mobility cooperatives

Residents are helped to set up local cooperatives in which they can share vehicles.

In this way, residents save money, fewer vehicles are needed and more space is freed up on the street. At least 40% of the vehicles will be electric.

#Climate deal 23

Emission-free supply of building materials

This deal embodies exemplary behaviour in business operations. Transport of, for example, concrete paving stones requires heavy-duty vehicles, of which large manufacturers do not yet market emission-free models. In order to initiate the desired transition to emission-free inner-city transport in this heavy-duty segment as well, a supplier, in consultation with their transport service provider, has launched an initiative to make this possible.

#Climate deal 24

Bundling industrial/commercial waste collection

The more sustainable use of vehicles that collect industrial/commercial waste and thus reduce the number of transport movements. This is an important condition for achieving a system in which zero-emission vehicles can be used profitably for the collection of industrial/commercial waste as quickly as possible.

#Climate deal 25

One-way traffic on the Nieuwe Binnenweg

A great partnership between residents, businesses, RET (public transport company), the Municipality of Rotterdam, Area Committee, etc., has led to a joint effort to transform the Nieuwe Binnenweg into a one-way street. This will result in better traffic circulation, which will be safer, cleaner and healthier. It serves as an example for a broader traffic circulation plan, reducing car traffic and increasing the urban quality of the city.

#Climate deal 26

Experiment in school surroundings

Two schools in Rotterdam will have a different traffic environment for a period of approximately four months. This will help improve traffic safety. Children who haven't previously cycled in traffic independently will now be able to do so. A positive side effect is that less car traffic in the school surroundings and lower speeds will improve the quality of life.

#Climate deal 27

Green Connection Rotterdam City Centre

The green central ring has already begun. Blaakpark is already on the drawing board. The views and vistas are currently being explored through workshops and walking expeditions. To arrive at a green ring road, small interventions at strategic locations will serve as trailblazers.

#Climate deal 28

Business owners roundtable

We have set out the ambitions of the Climate Agreement in our network of umbrella organisations and influential employers (R10). There is a leading group that will work together. They're challenging each other to devise ways/transition deals that will enable us to realise the ambitions within the business community.

#Climate deal 29 **Shared mobility for businesses**

Using shared cars in the business market that can be accessed from a hub. Because the car sharing system is demand-driven, raw materials and valuable space are used efficiently. Thanks to its mobility guarantee, the electric shared car is a real alternative to a private car or a leased, rented or pooled car.

#Climate deal 30 **Municipal mobility**

The Municipal HR policy on commuting and work-related journeys for its employees will, as far as possible, be brought into line with the vision of making the mobility of municipal employees more sustainable and more flexible.

#Climate deal 31 **Electric BoTuBus, for jobs and the neighbourhood**

An electric bus for workers in the Spaanse Polder and the elderly in the district that is charged by solar panels owned by residents of Delfshaven.

#Climate deal 32 **All children cycling to school**

Provide practical cycling education for primary school pupils and/or neighbourhood children, to increase their independence and self-sufficiency in traffic, to strengthen the cycling culture in Rotterdam and to promote cycling as a sport.

#Climate deal 33 **Citywide shared bicycles**

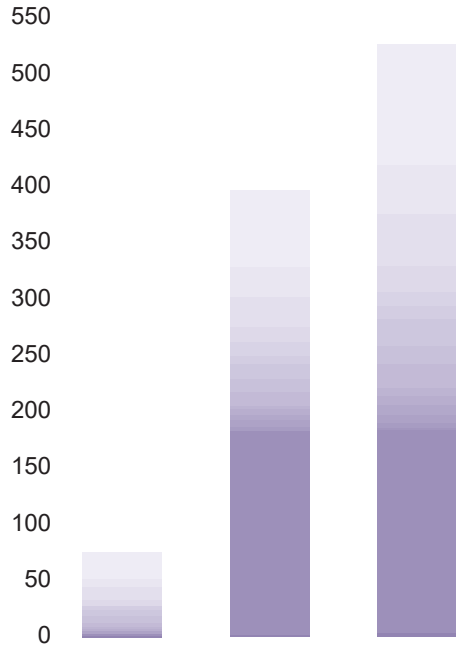
Work is underway on a shared bicycle system in which inclusive mobility comes first. Encouraging alternative transport to the car is important to keep the city accessible, healthy and liveable. The implementation will be tailored to the actual needs of the district's residents. This requires close cooperation with residents, associations, neighbourhood centres and schools.

#Climate deal 34 **Fietscampus (Bicycle campus) 010**

The district hubs of Fietscampus 010 are the base for cycling and mobility activities in the area. Meetings regarding networks, themes, information and workshops will be held from there. As a result, a Fietscampus can provide a suitable answer for mobility questions and the needs in each district. It thus connects the market (supply) with residents by linking mobility providers and parties to district-specific needs.

#Climate deal 35 **Climate Alliance - Transit Room for Mobility**

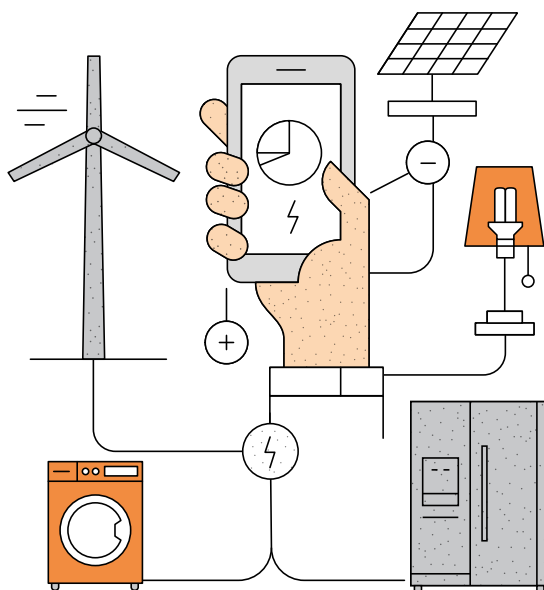
We are creating the Transition Room for Mobility, a partnership between the municipality and partners aimed at accelerating and scaling up the transition to emission-free and shared mobility in Rotterdam. This transition room consists of civil servants with a free remit to facilitate the mobility transition and seconded staff from a number of partners in the city.



■ Clean water taxi	1	2	4
■ ZE urban logistics	6	186	186
■ Multimodal construction hub	-	1	1
■ ZE municipal vehicle fleet	1	3	5
■ ZE social transport	3	7	7
■ ZE taxis	-	4	9
■ ZE buses	2	6	9
■ Smart logistics	1	3	7
■ Mobility Management	4	12	22
■ Modal shift to Public Transport and bicycles	6	12	17
■ Charging infrastructure	6	14	24
■ Fuel-efficient tyres (NL)	3	7	12
■ Lorry tax (NL)	-	13	13
■ Driving cleanly (NL)	6	14	24
■ Blending biofuels (EU)	11	27	47
■ ZE/fuel-efficient lorries (EU)	8	28	45
■ ZE/fuel-efficient passenger- and delivery vehicles (EU)	24	70	110



Clean energy



Rotterdam wants a smart and reliable energy system, powered by clean energy (e.g. from the sun, the wind, heat from the ground and water). We don't just want to generate this clean energy, we also want to store it. To ensure that we'll also have enough clean energy available in the future.

Residual heat is also used. This is abundant and can be used to replace natural gas. We therefore need to optimise the use of the heating network, make it more sustainable and modernise it.

Skilled people are needed to make such a major transformation. This is a joint challenge for educational institutions, businesses and the government. Social support is also crucial, for example by stimulating (and initiating) partnerships with local cooperatives.

The Clean Energy climate roundtable has shown how the generation of clean energy can be guaranteed in order to meet the growing demand for a sustainable energy supply in the city and the port area. We are looking at places with potential for wind energy or where there are opportunities for large-scale generation of solar energy.

"Over the past few months, through five roundtables, the climate approach has been used to connect parties that want to make a difference. The Municipality of Rotterdam has adopted the national emission reduction target (Council Agreement on Energy Transition March 2019) and has set up local climate roundtables to put the local emission reduction targets into effect. Generating clean energy will only lead to a reduction in CO₂ emissions when there is a reduction in the fossil fuels being burned in electricity and heat plants, industry and households. An adequate supply of clean energy sources is a precondition for reducing the burning of fossil fuels.

An adequate supply of clean energy sources is a precondition for reducing the burning of fossil fuels.

The Rotterdam Clean Energy Climate Table, under my chairmanship, has formulated climate deals that will promote the generation of clean energy within the Rotterdam municipal boundary and improve the framework conditions for the availability of clean energy sources. The formulated climate deals rely on the participating parties. These include the Port of Rotterdam Authority, the Ministry of Infrastructure and Water Management, the Province of Zuid-Holland, but also various market parties in the wind and solar energy sector and the relevant industry associations.

All climate deals are based on the existing system of participation and collaboration. Obtaining acceptance for the projects and plans arising from these deals among the people of Rotterdam is absolutely essential and necessary if the Energy Switch is to be a success."

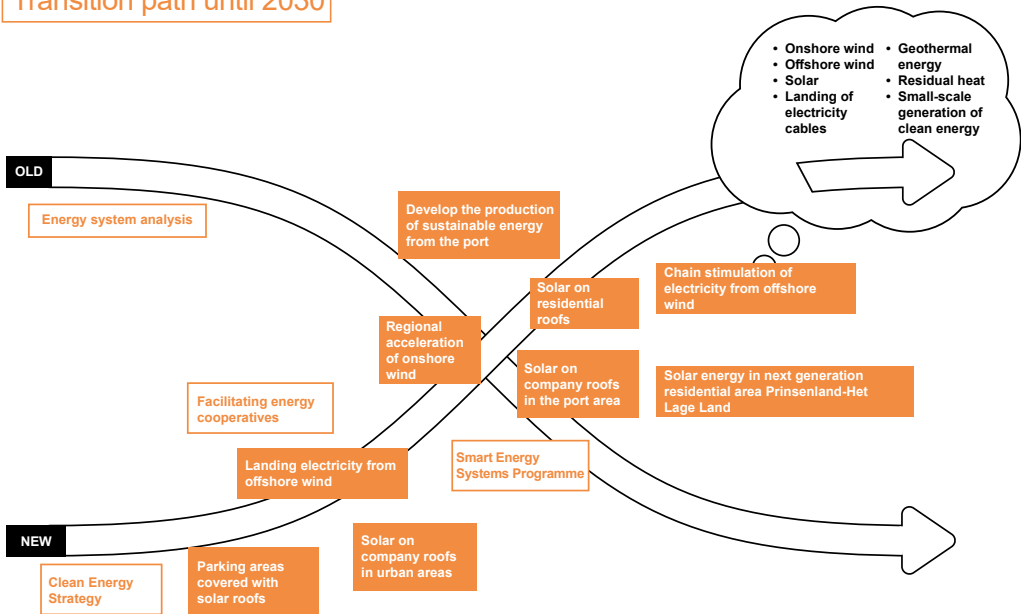
Jacob van Olst

Chairman climate roundtable Clean energy



Jacob van Olst is director of the Overijssel Landscape Foundation. Jacob is a very experienced director with a lot of knowledge of large-scale energy generation and an extensive network.

Transition path until 2030



Climate deals

#Climate deal 36 Developing the production of sustainable energy from the port

We are exploring new opportunities to develop wind and solar energy. We are engaging parties in the port area to make optimum use of and increase these opportunities. And we're identifying new opportunities. Together we're gaining a clear understanding of new potential in the field of developing renewable energy by 2030.

#Climate deal 37 Solar on company roofs in the port area

We are committed to equipping company roofs within the port area with solar panels. To achieve this, we are making use of the results of the research in the climate deal mentioned above. We start from the best practices through a partnership between the relevant parties in the port area.

#Climate deal 38

Regional acceleration of onshore wind

The municipality, developers and ground engineers are accelerating four wind energy projects. In mid-2020, we will sign the agreements so that everything will be in place by 2023. To achieve this acceleration, ongoing processes surrounding the creation of social support and participation are preconditions.

#Climate deal 39

Chain stimulation of electricity from offshore wind

We are working on a joint lobby to link the demand for renewable electricity with the supply from new offshore wind farms. This will provide an important stimulus for the further development of the Rotterdam offshore wind cluster. Together with all parties, we are telling a joint story and linking it to the existing ambitions for making the port area more sustainable.

#Climate deal 40

Landing electricity from offshore wind

In order to use clean energy, Rotterdam focuses on the regional landing of electricity from offshore wind. In the Rotterdam region, the landing of this electricity plays a major role in the ambitions for making the port area more sustainable. Such a collaborative project also includes a joint lobbying agenda from regional parties directed at central government.

#Climate deal 41

Solar energy in the Prinsenland residential area - Het Lage Land

In this 'next generation' residential area we're researching and developing links between the generation, storage and distribution of solar energy.

#Climate deal 42

Parking areas covered with solar roofs

We select car parks that are suitable for covering with solar roofs. Other functions such as electric charging stations, docking stations for electric bicycles and/or storage can also be included.

#Climate deal 43

Solar on company roofs in the urban area

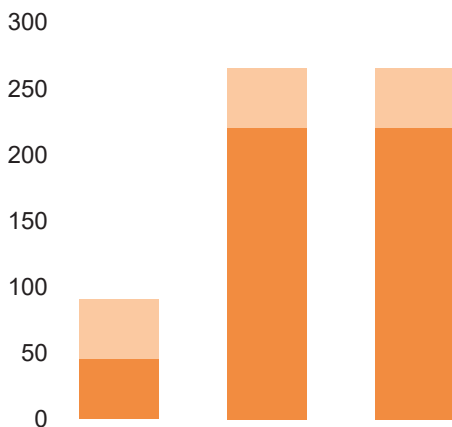
We will equip all suitable roofs on business parks with solar panels and, where possible, a wind energy installation. In order to achieve this, park managers and business associations will be facilitated with independent advisors who will take the subsidy application out of their hands. This will ensure the motion adopted by the Municipal Council, 'a roof full of energy' will be fully implemented.

#Climate deal 44

Solar on residential roofs

We are starting a pilot to realise solar on residential roofs through the establishment of energy cooperatives. This pilot should lead to a standard approach and more energy cooperatives in the region.

Chart of measures



Wind	45	220	220
Sun	51	51	51

Figures in kiloton CO₂

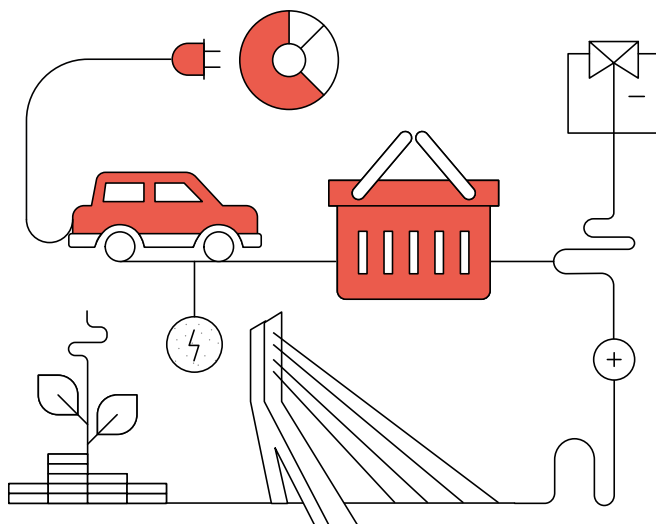
and closure of coal-fired
Power Station: **8,233 kton**



Betrouwbaarheid
en
leveringszekerheid



Consumption



Led by students from Erasmus University, participants at this climate roundtable explored how a change in consumption can contribute to reducing CO₂ emissions.

The roundtable identified which initiatives already exist in the city, how they can be strengthened and which new initiatives can contribute to the climate challenge. In particular, the roundtable focused on food consumption and the circular economy.

The climate roundtable on Consumption focused, first and foremost, on the food transition: sustainable consumption and less waste. Secondly, it focused on the transition to a circular economy: reduction, reuse, recycling and repair. By promoting a plant-based diet, separating organic waste in high-rise buildings (in student residences) and reducing food waste, we can contribute to the transition to sustainable and circular consumption in 2030.

"With pride and enthusiasm we present the transition path and the deals of the climate roundtable on Consumption, led by students of the Erasmus University.

The past few months have been enormously inspiring for us as students and it is a fantastic challenge to which we have been able to contribute. We are therefore proud of this final product, but would especially like to thank Vice Mayor Arno Bonte for the opportunity we have been given to contribute in such a concrete way to Rotterdam's sustainability ambitions. We would also like to thank the Erasmus Sustainability Hub for its support in the entire process and making our role in this process possible. We would also like to thank all the parties involved for their contributions and enthusiasm.

Together with all parties in Rotterdam, achieving a CO₂ neutral city by 2050.

During the process, our climate roundtable sought to link up with the Circularity programme of the Municipality of Rotterdam. We are pleased with their positive response to our ambitions and the deals that have emerged from the roundtable. In the report, we make the link with the Rotterdam Circularity programme where this connects to the theme of consumption.

We would like to continue to contribute to the city's climate objectives with the same energy and enthusiasm. We hope that other municipalities will follow suit by actively involving young people.

We are committed to the successful implementation of the proposed projects and hope to be able to contribute to the start of new projects and collaborations in the future as well. We would like to continue this unique collaboration with the municipality in order to ultimately achieve, together with all parties in Rotterdam, a CO₂ neutral city by 2050."

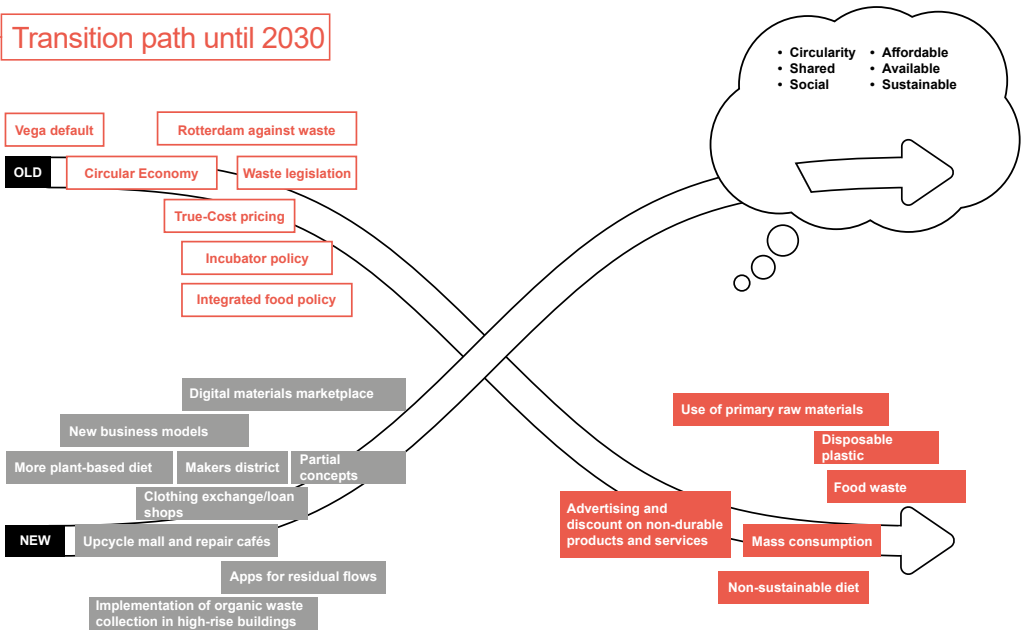
Esmee Tanis

Chair of the Climate roundtable on Consumption and Econometrics student at the Erasmus University Rotterdam



Esmee Tanis is a third-year student of Econometrics at the Erasmus University. In addition to her studies, she joined the Erasmus Sustainability Hub on campus in June 2018. The previous academic year she did a management year there and organised inspiring events and started projects that directly contribute to a more sustainable campus community.

Transition path until 2030



Climate deals

#Climate deal 45 Separation of organic waste in student flats

We are going to make agreements with the Erasmus Sustainability Hub, Rotterdam Circular, SSH and Stadswonen (both student housing associations) about the collection of organic waste in their high-rise buildings. After all, organic waste will have to be collected separately throughout Rotterdam from 2024. At the moment this is done for most low-rise houses, but not for high-rise buildings.

We especially want to make students aware of this theme.

#Climate deal 46 Partnership 'Rotterdam against Waste'

We actively combat food waste by looking at what agreements we can make with the various parties in the city and also with the producers. How do we deal with food in the city; not only at the front, but also at the back. By linking parties to this, you ensure that this is not just a task for the municipality, but for everyone in the city.

#Climate deal 47

Stimulating a more plant-based diet

We are putting the shift to more plant-based nutrition higher on the agenda. At the moment little is happening around this theme, while there is a lot of ecological gain to be made here. That is why we are starting a behavioural study to see how we can best stimulate the consumer towards a more plant-based diet.

#Climate deal 48

The Erasmus University creates a positive impact

The Erasmus University wants to be a CO₂-neutral university by 2024. To achieve this, they are focusing on two lines: the sustainability of the campus and education and research. Among other things, the EUR will annually identify the ecological footprint, develop a roadmap to a sustainable campus, start a working group on Sustainability that focuses on making education more sustainable and use the campus as a living lab to experiment with applied sustainability research.

#Climate deal 49

Zero Food waste packets for students

The Zero Foodwaste Rotterdam Foundation, in collaboration with the Erasmus Sustainability Hub, will offer food packets made from residual flows to students. Every week students can receive such a package with fruit and vegetables in exchange for 3 hours of volunteering per month at Stichting Zero Foodwaste.

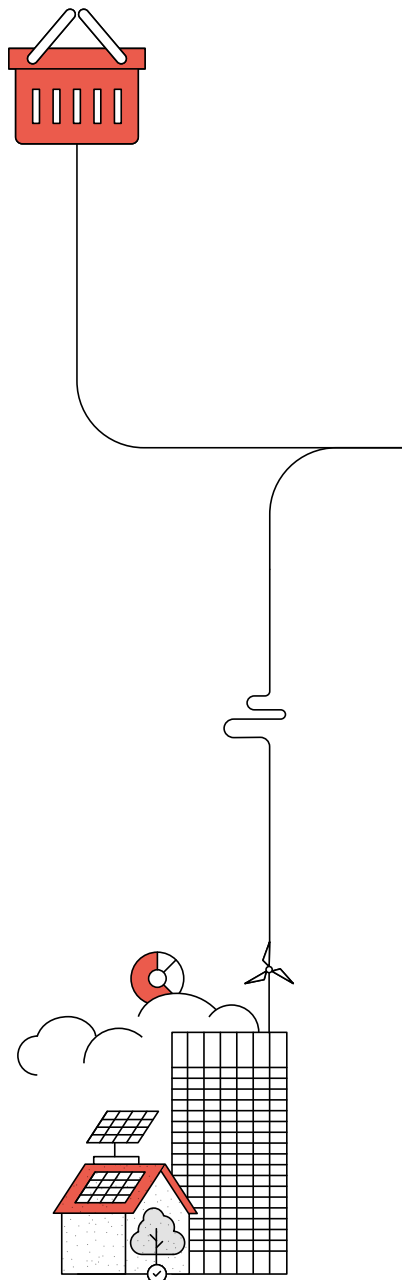
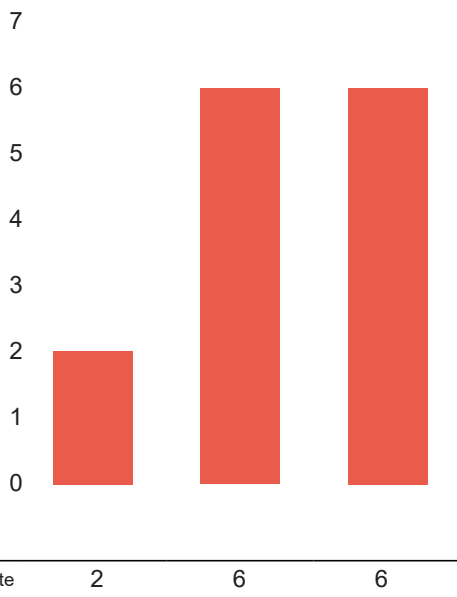


Chart of measures



Figures in kiloton CO₂





Participating parties

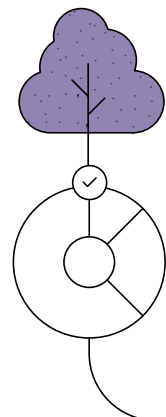
Aafje	Drift	Heijmans
Actiegroep Oude Westen	Dura Vermeer	Hely
AIR	Dutch Green Building	Holland Solar
Air Liquide	Council	Hoog Zestienhoven
Air Products	DZP	Human Kind
Amber	Econnetic	Huntsman
Amvest	ECT	IABR
ANWB	ElaadNL	InnovationQuarter
Archiklas	Eneco	Installatiewerk Nederland
ASN Bank	Eneco eMobility	International Carlease
AVR	ENGIE	IT-Campus
Bedrijventerrein Schiebroek	E-pact	Juuve
BIGR Behavioural Insights	Erasmus Foodlab	Klimaatoproep Rotterdam
Group Rotterdam	Erasmus Medisch Centrum	Klusbedrijf 2RH
BIQ architecten	Erasmus University	Koninklijke Metaalunie
Biro	Rotterdam	Laurens Wonen
Blauwhoed	Erasmus Sustainability Hub	Leyten
Blijstroom	Evides Industrierwater	LyondellBasell
BMW	Extern	Manhave
Bosch & van Rijn	ExxonMobil	Metaalunie
Bouwend NL	Felyx	Metropolitan Strategies
Bouwinvest	Fetch Car Sharing	Milieudefensie
BP	Fietsersbond	MKB Rotterdam
Breytner transport	Flocks	Mobiliteitsmeesters
Burgerpanel Rotterdam	FME	MobyOne
Buurauto	Future Mobility Network	Natuur en Milieufederatie
Comfort Makelaardij	Gasunie	Zuid-Holland
Dansh	Municipality of Rotterdam	New Industry
DCMR	Gezond Verkeer	NLVOW
DEEL	Green Business Club	NMF Zuid-Holland
Delfshaven Energie	Alexander	Nouryon
Cooperatie	Greenchoice	NPRZ
Deltalinqs	Greentrust	NS Stuurgroep anders
Deltametropool	Havenbedrijf Rotterdam	reizen
Donkey Republic	Havensteder	NVM ZHZ



NWEA
Onze Woning
Police
Pon
Pondera
PosadMaxwan
Power Plant Rotterdam
Province of Zuid-Holland
Rabobank
Rebelgroup
Renewi
Ressort Wonen
RET
Reyerwaard
Rijkswaterstaat
Rotterdam Circulair
Rotterdam Partners
Rotterdams Milieu Centrum
Samskip
Schrijver Logistiek
Sezer
Shell
SOR
Specht in de stad
Spindler makelaardij
Spring Holding
SSH
Stadslab Cool Zuid
Stadslab Hoogkwartier
Stadslab Luchtkwaliteit
Stadswonen
Stebru
Stedin
Stichting de Verre Bergen
Stichting Voedsel Surplus

Stichting Zero Foodwaste
Rotterdam
Stratac
Studio Vermeulen
Suez
Sunrock
TBI Era
Techniek NL
Tennet
Thijs Meijer Makelaardij
Timmermans
TNO
Transformator
Transformism
Transporteconoom
Uniper
Urban Department Store van
Mossel Automotive
Groep
Van Wijnen
Vattenfall
Verkeersonderneming
Verstegen
Vervoersbank
Vesteda
Vestia
VOPAK
VORM Bouw
VVE010
Warmtebedrijf Rotterdam
Watertaxi
Werkgroep Duurzaam Mooi
Mooier Middelland
Wijkenergie Werkt
Woningbouwvereniging

Hoek van Holland
Woonbron
Wooncompas
Woonstad Rotterdam
ZuidHollands Landschap



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Energy switch**

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