

Delft energy neutral 2050 – Delft 2013-2016 Implementation Programme

Requested decision:

Adopting:

1. the Delft energy neutral 2050 memorandum (*Nota Delft energieneutraal 2050*), and consequently
 - a. the Delft energy neutral 2050 ambition;
 - b. the aim for 2020:
 - 35% CO₂ emission reduction with respect to 1990;
 - the share of sustainable energy must be at least 15% of the total Delft energy consumption;
 - we must be using 35% less energy than in 1990.
2. Delft 2013 Energy Saving Fund Regulations (*Verordening Energiebesparingsfonds Delft 2013*).

Summary

Delft has the ambition to be an energy neutral city by 2050, so that there will no longer be CO₂ emissions from fossil fuels. We have achieved significant results since 1990. If we compare 2011 with 1990, we see that with a CO₂ reduction of 15.5% we have met the objective of a 15% reduction in 2012. To achieve the aim of a 35% CO₂ reduction before 2020, we will have to use the same percentage of less energy and 15% of the total Delft energy consumption will have to be generated sustainably, we know that we will have to make a considerable effort. This will require an essentially different type of collaboration between the municipality and all partners in the city and greater control over the interpretation of the objective by the partners. The willingness and knowledge required are available. As a knowledge centre, Delft has renowned researchers available within its knowledge institutes. We have concluded that businesses and organisations wish to participate and contribute to the ambition of Delft energy neutral 2050.

This Delft energy neutral 2050 policy memorandum describes the Delft approach to achieving an energy neutral city. The corresponding 2013-2016 Implementation Programme elaborates the activities that will be implemented within the next few years.

The societal playing field is changing and a shift is taking place (certainly with regard to sustainability) from government-driven control to economy-driven control. Delft is responding to this trend. We are network-oriented: open to the outside world in behaviour and data and focused on cooperation and interaction with inhabitants, entrepreneurs and knowledge centres. This change is influencing the way in which we are now (in contrast to what was previously the case) working on Delft energy neutral 2050. We have progressed from having an initiating-based role to having a more directing-based role, with the responsibility being placed with the parties where it belongs.

An important part of this process is making agreements with parties in the city in the form of e-deals (energy deals, the local version of the national Green Deals). A package of e-deals has been put together that enable parties in the city, whether or not in collaboration with the municipality and one another (businesses, citizens and educational institutions), to provide a framework for an energy neutral city by means of specific projects.

The implementation of the e-deals requires solid support for the benefit of the feasibility, finance ability and visibility of the projects. For this purpose, we have taken it upon ourselves

to develop reliable instruments, e.g. by making funds available by means of low-interest loans for private house owners, or by developing a solid market strategy, so that all our partners (local, national and also European) are informed of our collaboration, our ambitions and our results.

For the development of the instruments, we are using funds from the Climate Plan Investment Plan, external financiers and subsidies from third parties.

1. Reason

In June 2011, after having been informed of the 'Towards an energy neutral municipality' (*De weg naar een energieneutrale gemeente*) study, the Municipal Executive adopted the Delft energy neutral 2050 ambition. The study and the ambition were then submitted to the Municipal Council for their inspection. In the submission document, the Municipal Executive stated that in 2012 it would develop a specific step-by-step plan, which would elaborate the route towards an energy neutral Delft in 2050 for the next four years (2013-2016).

2. What happened in the past?

In 2011, the Municipal Executive confirmed the Delft energy neutral 2050 ambition after having inspected the 'Towards an energy neutral municipality' study. By adopting this ambition, we have fixed a target and committed ourselves to a challenging but realistic ambition.

2.1 What took place beforehand?

Delft has had an active energy policy since the 1990s.

We started with projects as part of the 3D Sustainability Plan (*3D Duurzaamheidsplan*), such as:

- 100 Delft Blue Roofs (*100 Delfts Blauwe Daken*);
- Sustainable development of the Zuidpoort area.

Subsequently, following the 1997 Kyoto agreements and the national incentive for Climate Policy (BANS), the 2003-2012 3E Climate Plan (including the required resources) was adopted, in the first instance to arrive at a CO₂ reduction of 35 kilo tonnes in 2012.

In 2008, the objective was adjusted. New insights at the time showed that a large-scale change in climate can be avoided only in the case of a substantial reduction in CO₂ emissions. In the 2008-2012 Climate Plan Update (*Actualisatie Klimaatplan 2008-2012*), the objective was tightened from 35,000 tonnes to 90 kilo tonnes CO₂ (15% CO₂ reduction with respect to 1990) in 2012 and a new ambition was adopted of a 50% CO₂ reduction for 2030. We were very aware at the time that the reduction targets had to be more ambitious. A lack of familiarity with the impact of the energy/climate or CO₂ neutral ambition held us back at the time from claiming or adopting the ambition of neutrality.

In 2011, this ambition was, however, adopted. 'Towards an energy neutral municipality' gave us an understanding of the actual CO₂ emission within the municipal boundaries and the consequences of the energy neutral ambition. It also provided a strengthened awareness of urgency.

An important conclusion of the study is that as the Municipality of Delft, we can influence only approximately 2% of CO₂ emissions directly. This 2% is caused by electricity and gas consumption in municipal buildings and municipal facilities (e.g. public lighting, traffic regulation systems and the municipal vehicle fleet). The other 98% of CO₂ emissions

originates from living (private and corporation owned), traffic, transport and works (businesses, care institutions, schools, etc). We therefore definitely need our partners in the city to realise the ambition of being energy neutral in 2050.

3. Where are we now?

As regards the process:

In the past, we acted as a municipality mainly as an initiator and driver of energy projects and projects were subsidised. Thanks to changes in the societal playing field, a shift is taking place (certainly with regard to sustainability) from government-driven control to economy-driven control. This requires a transition in the working method which we are launching in this memorandum.

As regards the facts:

To provide an answer to our current position, we must be clear about our zero point. This zero point has been fixed globally at 1990, when our CO₂ emission, calculated on the basis of indicators, was approximately 600 kilo tonnes.

In 2010, the first CO₂ monitor was published on the basis of actual consumption data for the period 2006/2007. Since early 2012, Delft has been using Energy in Vision (*Energie in Beeld*)¹, with which we can analyse the annual energy consumption of previous years. Using Energy in Vision, we set up a monitor for the period 2008-2011. This monitor makes clear the difference between the calculation on the basis of indicators (1990) and on the basis of the actual consumption data (2008 and the subsequent years). A more detailed version of the CO₂ monitor is included as Appendix 2 to this memorandum.

The following table and figure includes the total CO₂ emission figures for private and business energy consumption and for traffic.

Table 1 CO₂ emissions 2008-2011 (kilo tonnes CO₂/year)

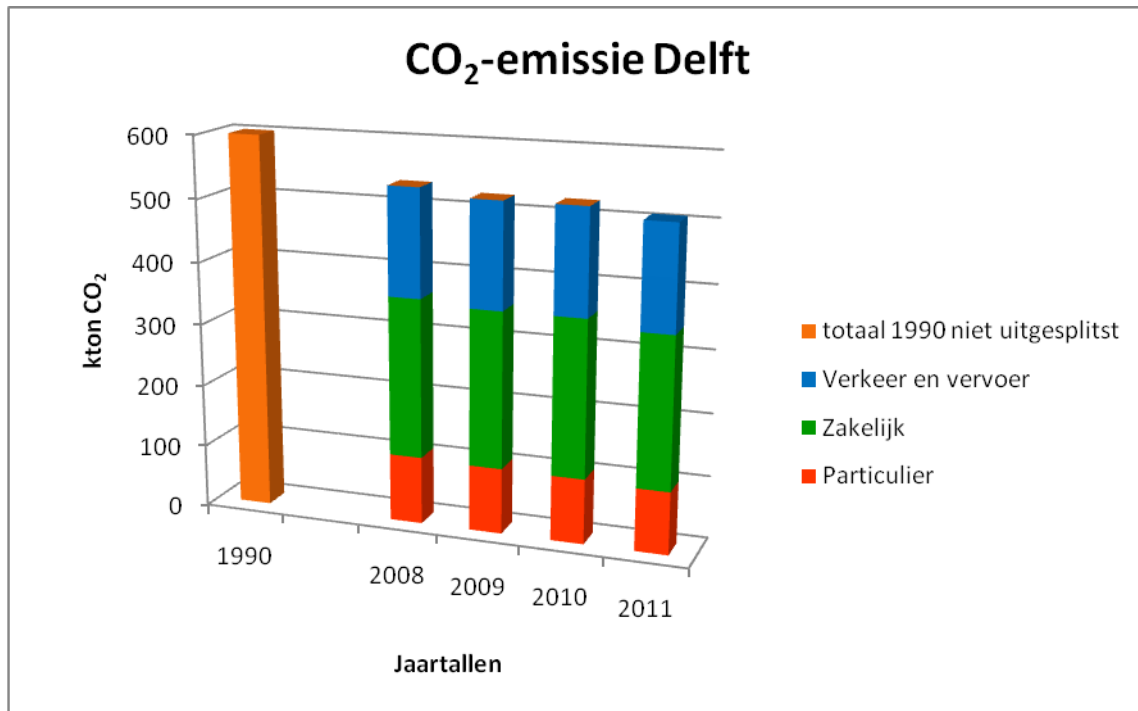
Sector	1990	2008	2009	2010	2011
Private		108	105	104	100
Business		254	249	250	241
Traffic and transport		171	168	168	166
Total	600 ²	533 ³	522	521	507

¹ Energy in Vision is a service of Enexis, Alliander and Stedin that provides an understanding of energy consumption in the municipality.

² 1990: emission of CO₂ on the basis of indicators.

³ 2008 and subsequent years on the basis of actual consumption data.

Figure 1 Development of CO₂ emissions per sector 2008 - 2011 (kilo tonnes CO₂/year)



CO ₂ emissie Delft	CO ₂ emissions Delft
Kton CO ₂	Kilo tonnes CO ₂
Totaal 1990 niet uitgesplitst	1990 total not specified
Verkeer en vervoer	Traffic and transport
Zakelijk	Business
Particulier	Private
Jaartallen	Years

The above data provide an answer to the question of ‘Where are we now?’ We have established a downward trend, although it must be said that the above data are not complete. The data from large consumers and the heating supply have yet to be added, as well as the data from electricity generation by means of solar panels. Re-supplying electricity from solar panels is not yet registered in the Energy in Vision database. Large consumers who are connected directly to the national grid (not supplied via Stedin) are also not included in the database. For 1990, as well as for the period 2008-2011, we are assuming an uncertainty margin of 10%.

If we compare 2011 with 1990, we see that with a CO₂ reduction of 15.5% we have met the objective of a 15% reduction in 2012. To achieve the aim of a 35% CO₂ reduction before 2020, we are aware that we will have to make a considerable effort.

We will continue to hold discussions in the coming period with the parties involved, with the aim of not only updating the monitor every two years, but also with a view to obtaining a complete picture. We will register the generation of energy from renewable sources (in so far as known) in the CO₂ projects monitor of Haaglanden⁴, so that we also have an understanding of the share of sustainable energy in the total energy consumption in Delft.

⁴www.CO2-monitoring.nl

The following table provides an overview of the energy savings and CO₂ reduction registered in the CO₂ projects monitor.

Table 2 CO₂ projects monitor Haaglanden totals – Municipality of Delft

Municipality of Delft	CO ₂ reduction (tonnes/year)	Energy savings (GJ/year)	Sustainable energy production (GJ/year)
118 projects	13,300	72,000	189,300

4. In which playing field are we?

The societal playing field is changing and a shift is taking place (certainly with regard to sustainability) from government-driven control to economy-driven control. Delft is responding to this trend. We are network-oriented: open to the outside world in behaviour and data and focused on cooperation and interaction with inhabitants, entrepreneurs and knowledge centres. This change is influencing the way in which we are now (in contrast to what was previously the case) working on Delft energy neutral 2050.

Delft is not alone in its ambition to be an energy neutral city by 2050. On the one hand, the partners in the city have an important role in fulfilling the ambition, and on the other hand, Delft depends on its partners outside the city. These partners have their own objectives and ambitions, for which purpose they need, for instance, other partners such as Delft in order to realise them.

During the Climate Change Conference in Doha (Qatar) in early December, a new set of agreements was concluded relating to a road map towards a new binding climate agreement as a successor to the Kyoto protocol. This new climate agreement will have to take effect in 2020. At the same time, the Kyoto protocol is being extended (on a voluntary basis) until 2020.

In 2008, Europe set its targets: the 20-20-20 objectives for 2020:

- 20% reduction in CO₂ greenhouse gas emissions;
- 20% less energy consumption;
- 20% of the total energy consumption must be generated by renewable sources, such as wind and solar energy.

In 2011, the European Commission presented the Energy Roadmap 2050, with the final objective of reducing CO₂ emissions by 80% in 2050. This Roadmap 2050 has not been adopted, but acts as a guideline for European Commission policy. As regards the greenhouse gas ambition, our new cabinet is in favour of the European objective: the international objective of a complete sustainable energy supply in 2050, a 20% reduction in 2020 with respect to 1990 (this was 30% at the time of the 2008-2012 Climate Plan Update), 16% of the total energy consumption in 2020 must be generated from renewable sources and energy consumption must be 2% less per year.

The Haaglanden urban region has adopted the climate objective in the 2020 Haaglanden Regional Structure Plan (*Regionaal Structuurplan Haaglanden 2020*). The objective reads as follows:

“The ambition is that Haaglanden becomes a climate neutral region by 2050 at the latest. On the way to achieving that objective, CO₂ emissions must have been reduced by 30% in 2020 with respect to 1990 and halved in 2030.”

5. What is our goal?

The transition process we are now launching must ensure that Delft becomes energy neutral by 2050. That is our long-term objective. We are opting for energy neutral, because the consequence of energy neutrality is that there will no longer be CO₂ emissions originating from fossil fuels. Our decision to ensure that Delft will no longer be using fossil fuels by 2050 at the latest is based on the following considerations:

- **GUARANTEED:** the demand for energy continues to increase on a global scale. As fossil fuel reserves will eventually be exhausted and/or become more difficult to extract, the supply of energy from fossil fuel sources is uncertain;
- **AFFORDABLE:** the end-user price of energy is expected to increase and will be higher within the foreseeable future than the price of energy from renewable sources;
- **CLEAN:** the CO₂ and fine particle emissions resulting from burning fossil fuels are the main cause of the climate problem and have negative effects on air quality.

Energy neutral Delft means that in 2050, only energy from renewable sources (solar, wind, biomass and geothermal) will be used for heating, cooling, lighting and other processes (ICT, industrial processes, etc.) in all buildings (dwellings, offices, business premises) and for traffic and transport within the Municipality of Delft. We will have to pull out all stops in order to realise this ambition in a responsible manner.

For the medium term, we are keeping for 2030 to the objectives adopted in 2008:

- 50% CO₂ emission reduction with respect to 1990;
- the share of sustainable energy must be at least 25% of the total Delft energy consumption;
- we must be using 50% less energy than in 1990.

In 2009, Delft joined the Covenant of Mayors⁵. This European network of administrators demands an unambiguous and adopted objective for 2020. On the basis of the Delft energy neutral 2050 ambition and the above interim objective for 2030, we are formulating the following short-term objectives for 2020:

- 35% CO₂ emission reduction with respect to 1990;
- the share of sustainable energy must be at least 15% of the total Delft energy consumption;
- we must be using 35% less energy than in 1990.

6. What will we do to achieve this?

6.1 Our strategy and organisation

The role of local authorities is changing. In contrast to the past few decades where municipalities took on the role of initiator and driver by means of *management-based* control, municipalities are now taking on a *directing-based* role and – on the basis of a widely-supported vision – are increasingly placing the initiative and responsibility with the parties where they belong (a visionary role on the one hand and a facilitating role on the other).

In the past, we acted as a municipality mainly as an initiator and driver of climate projects and we implemented many successful schemes (see also §2.1 and www.CO2-monitoring.nl). We often entered into collaboration, but as a municipality we were in the lead most of the time. Society is changing constantly and this means that in the period up to our final objective of Delft energy neutral 2050, we will have to reassess our strategy on a regular basis. To some extent, it's also learning by doing. But the changing role of local authorities means that it's now time for such a reassessment. We now see increasing initiatives being taken by businesses and citizens. Businesses are being faced by increasing costs for (fossil) fuels and there is a growing group of who attach great importance to sustainability and who are very careful in their choices. Citizens feel a need to arrange their own energy supplies and to be

⁵ <http://www.eumayors.eu>

less dependent on large energy companies. Moreover, as a result of the current crisis, there is a demand for innovative solutions for new economic growth that are based on a responsible use of available resources. This awareness is leading to an increasing focus by society on sustainability.

This requires a transition to an interpretation of the objective controlled more by the partners. As a knowledge centre, Delft has famous researchers working at its institutes. Benefiting from the movement that resulted in the Sustainability Plan, we are opting to encourage organisations and residents to take responsibility for sustainable behaviour. However, we are aware that encouragement alone will not provide a framework for the ambition. We will make our expertise, clout, communication resources and our networks available in an appropriate manner to support this sustainable behaviour.

In drawing up the 2013-2016 Implementation Programme, we therefore opted for a process in which we enter into dialogue with the partners in the city (businesses, quasi-public authorities and citizens). On the basis of the consultations, we develop **e-deals**⁶, in which specific projects are included that the parties implement and with the municipality playing a specific role. We also offer the parties the possibility to sign a 'general' e-deal in which they state their commitment to the municipality's ambition without a project resulting directly.

We wish to use the new 2013-2016 Implementation Programme process to strengthen and accelerate the movement towards energy neutral Delft. We have concluded that businesses and organisations wish to participate. The important consideration for the next few years is to maintain this movement. We wish local partners not only to commit themselves, but also to participate as far as possible and to make an active contribution to the Delft energy neutral 2050 ambition. This is our most important role as a municipality: driving and continuing the movement in the next few years and beyond. The first e-deals will be concluded in early 2013, and we wish to add several new e-deals every year.

Coordination and communication are vital for strengthening and continuing the movement. For coordination, we wish to exploit existing consultation structures which already involve local partners, such as the Technological Innovation Campus and Delft Amazing Technology. This will ensure that climate and energy are directly linked to initiatives in the city. In the learning by doing process, we also expect unsolicited advice from these partners. Communication will contribute to the visibility of the initiatives in the city and far beyond, and allow the Municipality of Delft and local parties to present themselves positively. By highlighting the initiatives, we hope to encourage other initiatives that lead to new e-deals, which will accelerate the Municipality of Delft towards energy neutrality.

⁶Local version of the national Green Deal; an abbreviation of energy deal.

6.2 Communication

Energy and climate are increasingly becoming economic opportunities, which means that they are emerging more and more from their green context. That requires a difference of tone in the communication: less focus on the threat and more emphasis on the opportunities. We will develop our 'sales strategy' in a marketing plan. This must result in information and inspiration and therefore new e-deals. For this purpose, we will be using several means of communication, including ENGAGE, an approach developed in EU context where we highlight local initiators with their idea or project. Furthermore, we are considering a website, publications in local newspapers, using billboards and other visible means. Recognisability is crucial in communication. From now on, we will therefore communicate our climate policy using a brand name chosen in a competition. All initiatives in the city will consequently be linked to the Delft energy neutral ambition. We are inviting local parties to contribute content and marketing expertise, which will allow us to increase the impact of our message.

6.3 Finances

The financing of the 2013-2016 Implementation Programme relates in particular to the composition, engaging external expertise, and means of communication. In addition, some of our own resources will be used for the purpose of financing projects, which is set out in greater detail below.

Own resources

The long-term programme budget for 2013-2016 includes the following reserves for the Implementation Programme:

Table 3 Budget for Climate Plan Investment Plan (x € 1,000)

	2013	2014	2015	2016
Available	777	832	625	530
Earmarked⁷	490	275	-	-
Disposable	287	557	625	530

We will use the budgets according to the demand from the projects, on the understanding that the following instruments can be applied, in order of the greatest CO₂ reduction per invested € and/or the potential for such.

- Loan
 - o Delft 2013 Energy Saving Fund Regulations
- Subsidy
 - o Policy Rule on the Environment (*Beleidsregel Milieu*) - Art. 9.1 Energy Saving Measures Reserve

External resources

An important contribution from the Municipality of Delft to the e-deals will be calculating the effects of business cases and facilitating when assessing the financing possibilities of these cases. We will approach this matter by entering into and continuing consultations with external financiers, on the one hand, and by making the best use of our knowledge and

⁷The Municipality of Delft has concluded performance agreements with various developers. The required resources available for this purpose under the Policy Rule on the Environment are referred to as 'Earmarked'.

network of third-party subsidies (both national and European), on the other.

6.4 Monitoring

In order to follow the projects and e-deal closely, we formulate objectives that are measurable as far as possible and state in advance the indicators that we will monitor. The importance of monitoring is two-fold: to gain a proper understanding of the results achieved, on the one hand, and to bridge the gap between theory and practice to best effect so that in future we can formulate objectives that are more in line with practice, on the other. In 2016, we will perform a Gateway⁸ review to determine the actual results of the transition and to use the results to adjust policy, if necessary.

CO₂ monitor and projects monitor

In order to monitor progress towards the 2020 objective as closely as possible, we are perfecting the method for the CO₂ monitor and presenting the most up-to-date emission data on an annual basis in the municipal publication of core figures. We also maintain the projects monitor⁹, so that it is clear to anyone at any time which projects in Delft are contributing to the Delft energy neutral 2050 ambition.

7. 2013-2016 Implementation Programme

7.1 Introduction

Appendix 1 contains all projects and e-deals provided for in the Implementation Programme at the time of adoption. In the case of projects, the municipality is taking the lead for the time being. The e-deals assign the role of driver to our partners in the city, with the city expressly adopting a facilitating role.

As already stated, we entered into consultations with our partners in the city for the detailing of the e-deals. We have also used ideas and suggestions made during the expert meeting of 18 May 2011 and the study *Towards an energy neutral municipality*, which was carried out in the run-up to the Implementation Programme.

The e-deals have been defined as far as possible using the leading principles referred to in § 5: GUARANTEED, AFFORDABLE, CLEAN.

In addition to the leading principles, we adhere to the starting points in former climate, i.e. the *Trias energetica*. This means that the e-deals and projects focus on:

- Step 1 reducing demand by energy savings
- Step 2 applying (local) sustainable sources
- Step 3 optimising the use of fossil fuels with regard to efficiency and reliability.

⁸ A Gateway is an amicable, confidential assessment of a programme (start), project or organisation, at the request of an administrative responsible party.

⁹ www.CO2-monitoring.nl

7.2 Sector-specific approach

The most important sources of CO₂ emissions can be inferred from § 3. These are:

- businesses and institutions: for heating and cooling buildings and electricity and gas consumption for processes;
- households: gas for heating, warm tap water and cooking, and electricity for lighting/household equipment; and
- traffic and transport: in addition to CO₂ emissions, the emission of fine particles and nitrogen has a negative effect on air quality.

The Implementation Programme will use the classification of the most important CO₂ emission activities for the purpose of sub-dividing the work:

- Housing
- Businesses
- Traffic and Transport

In principle, making the energy supply more sustainable is part of all three sectors. To avoid cross-connections between the sectors remaining invisible and unexploited, we are launching a separate Sustainable Energy sector.

Sector Housing

If we wish to be energy neutral in 2050, we have an important assignment within the Living sector. The CO₂ monitor shows that dwellings consume 34% of the total amount of gas used in Delft.

The most important measures within the Housing sector focus on energy savings and energy generation from renewable sources. In the case of new development, these two measures are prescribed by central government, with an increasingly stricter application of the EPC (Energy Performance Coefficient).

In contrast, the existing housing stock is not subject to legislation and we therefore depend as a municipality on the willingness of house owners and housing corporations to introduce energy savings and sustainable energy measures to provide a framework for our ambition. However, we are not going to sit and wait for that willingness to be forthcoming. We will actively urge house owners to make energy savings. For the rest, we will leave the market to take its own initiatives and we will play a facilitating role where necessary, e.g. in the case of corporations and the possible use of Urban Renewal Investment (ISV) funds to restart the improvement of existing property via energy-saving measures.

We do this because we are not only putting into effect our climate ambitions. We are also helping to solve the problems concerning increasing unemployment in the building sector and what is referred to as energy poverty. Recent research¹⁰ has shown that an energy saving of 2% a year up to 2020 requires an extra investment of approximately 20 billion euros. As opposed to the investment costs, there are extra annual savings on the energy bills of Dutch households. These savings amount to € 1 billion. Depending on the means of financing, households can save money each month as a result of the investment in energy savings. Furthermore, in the case of, for instance, fitters and suppliers, the investments will result on a national basis to a net working volume of 67,000 hours in 2020.

¹⁰ Building and jobs – employment effects of energy savings in the built environment, SEO Economic Research & CE Delft, on the instructions of the Ministry of Infrastructure and the Environment, December 2012.

To bring about a reduction in emissions in existing housing, the Municipality of Delft will be focusing in the next four years on the following elements:

Energy saving programme in the case of private house owners

We will focus on the reduction of heating demand in the existing housing stock. This can be effected by insulating dwellings and applying new technologies for a sustainable heating supply. Whereas the Municipality of Delft previously took the lead in relieving house owners when it came to adopting measures, we will leave the initiative in the coming period to the market. We will of course be contributing to this process by making project agreements with market party consortiums and providing support where necessary.

Energy project in the case of low-income groups

Energy savings are increasingly appearing on the agenda of low-income groups. In the past fifteen years, energy prices have risen by more than three times the prices of other goods and services. In January 2012, energy prices were almost 120% higher than fifteen years ago. Approximately 75% of low-income groups live in social housing, with energy charges making up a substantial part of the housing costs. An approach based on the three aspects of living, income and behaviour would seem to be the most complete way of tackling the problem of energy poverty. By means of a pilot within the *Energy savings in existing housing* programme, we will focus together with one or more corporations on housing with the poorest energy labels. The municipality will inform residents on social assistance benefits about energy savings and offer support in implementing them.

Sector Businesses

With approximately 75%, the Businesses sector has a substantial share in the total electricity consumption of Delft. In so far as known, approximately 8.5%¹¹ is made up of electricity from renewable sources, but the greater share is still electricity generated by CO₂-emitting fossil fuels. In addition to electricity for process-related activities (PCs, lighting, but also cooling appliances and electric water pumps), the Businesses sector CO₂ emission is also attributable to the heating and cooling supply. For the Businesses sector too, the most important measures focus on energy savings and energy generation from renewable sources.

Laws and regulations provide the municipality with more control opportunities, but many businesses no longer need these measures. For many entrepreneurs, energy savings are an increasing part of running a business, not only with a view to cost reductions, but also because they understand that a sustainable business model is the business model of the future.

In the next four years, the emphasis within the Businesses sector will be on boosting, facilitating and maintaining. For this purpose, we will be pursuing the following:

- the statutory duty in the context of the Dutch Environmental Management Act (*Wet milieubeheer*);
- collective arrangements with SMEs Delft, VNO-NCW Delft about making affiliated businesses more sustainable;
- customised approach for individual businesses.

The collective arrangements and the customised approach will be incorporated into e-deals, so that specific controls can be carried out with regard to objective, result and use of resources.

¹¹ <http://statline.cbs.nl>

Traffic and Transport sector

Traffic and Transport not only make a substantial contribution to the emission of CO₂ (30%), they also have a direct influence on the concentration of fine particles and nitrogen in the air as a result of burning fossil fuels and consequently on local air quality. With the adoption of the Delft energy neutral 2050 ambition, we are including Traffic and Transport in the Implementation Programme. We are doing so because, in view of the huge share that Traffic and Transport takes up in the total CO₂ emission, we have to tackle this sector comprehensively together with the sectors Living and Working in order to achieve our ambition of Delft energy neutral 2050.

The *Trias Energetica* applies here too: first reduce and then sustain.

Sustainable energy sector

Sustainable energy runs right through all sectors: for Living, making the heating supply sustainable is a priority, for Working, sustainability applies more to the electricity supply. The sustainability of the heating supply, in particular, requires a coordinating role from the municipality. The supply areas of Warmtebedrijf Eneco Delft B.V. (WBED) (including Poptahof, Harnaschpolder and Sporthal Buitenhof) will be properly supplied. New supply areas will possibly be put to the market once more. Furthermore, with the formulation of new geothermal energy policy, the opportunity has been created to make optimal use of available technology and technology under development for sustainable energy generation. We are positioning the Spoorzone redevelopment project as an energy neutral development with opportunities for an innovative heating supply.

Municipal organisation sector

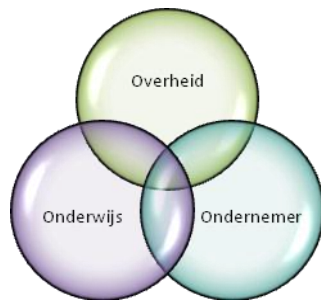
As an organisation, the Municipality of Delft contributes for approximately 2% to CO₂ emission in Delft. In 2006, the organisation decided that in future, it would purchase green electricity for the electricity requirements. At the same time, several building-related optimisations were introduced. With the arrival of the concept of the new way of working, a number of poor energy performance buildings with out-dated systems will be closed and replaced by energy-efficient buildings provided with geothermal heat pumps and solar panels.

We want these buildings to be an example for our partners. But at the same time, we are aware that this does not provide a fully-fledged framework for the coalition ambition of making the municipal buildings climate neutral in 2015. The follow-up project to be climate neutral in 2015 and to structure the other buildings on this basis will be detailed in the coming period.

Education and Innovation instruments

The challenges that we are facing in Delft, but also elsewhere in the Netherlands and the world, are complex and cannot be solved on the basis of one approach. Contemporary problems such as climate change and a lack of raw materials require contemporary solutions. This is possible only if public authorities, entrepreneurs and educational institutions are able to join hands and to set up collaborative ventures and alliances. That is why we are working to strengthen the Triple Helix:

Figure 2: Triple Helix: cooperation between public authorities, educational institutions and entrepreneurs



overheid	public authorities
onderwijs	educational institutions
ondernemer	entrepreneurs

Since the 1990s, Delft has been a pioneer when it comes to climate policy and it has long been a city of innovation. Perhaps the number one city of innovation. Delft University of Technology, the universities of applied sciences and the research institutes mean that Delft occupies a unique position and can make an important contribution to the ambitions of the city. In the past few years, the Municipality of Delft has developed various initiatives to strengthen the innovative power present within the municipality. The Technological Innovation Campus is a prominent structure within which parties work together on the positioning of the city as a centre for sustainable innovations.

We are using the Education and Innovation instrument to support businesses and knowledge centres that wish to test innovations relating to energy savings and the generation of sustainable energy and/or who wish to place such innovations on the market. In Delft, we are creating a testing ground where innovations in both technology and processes can be applied. By actively strengthening the collaboration between education and entrepreneurs, economically feasible products and concepts can be developed that contribute to CO₂ reduction. This will generate new commercial activity and also new high-quality employment in the city. The Delft Energy Initiative of Delft University of Technology, Delft Amazing Technology and the Prototyping programme of the universities of applied sciences and Delft University of Technology are important drivers for these instruments.

We support these initiatives and help to detail an agenda in which issues are defined that are related to Delft energy neutral. On the basis of the issues, the universities of applied science students and the Delft University of Technology students work together on solutions. Where necessary, we bring parties and people into contact. The parties in question detail the projects and innovation processes themselves. Once the transition has been initiated, we opt to play a pioneering role once more.