Green Deals Overview

Progress report Green Deals 2011-2015
Preface

This Green Deals progress report contains updated information on the 185 Green Deals that the government concluded with entrepreneurs, civil-society organisations and other parties, from 2011 until mid-2015. Infographics display the progress of the deals, as was the case in last year’s report.

The infographics on the progress achieved are supplemented with inspirational examples drawn from nine separate Green Deals. These examples give an impression of individual deals in the themes of construction, food, energy, mobility, biodiversity, biobased economy and resources & circular economy and water. They also focus on the lessons learned from these deals.

For more information on specific deals, please visit our website: www.greendeals.nl. Each deal has its own dedicated area on the website, where goals, participants and results are displayed. As increasing numbers of deals enter the final stage, additional information on the results of these deals will be posted on the website.

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Green Deals Overview

2011–2015

About Green Deals

Green Deals are initiatives for green growth in which government and society collaborate interactively from the outset, also with an eye to implementing policies on societal challenges. The central idea is that the government facilitates and accelerates initiatives by removing barriers. Such barriers may be formed by legislation, or by a lack of market incentives, innovation and networking.

Green Deals

185

Participants

1225

Year duration

3

For further information see: www.greendeals.nl/english

Progress

actions carried out
not (entirely) achievable
achievable on time
achievable with some delay
not (entirely) achievable
unknown

44
47
45
30
16
3
We have achieved our goal. People are making good use of the 10,000 charging stations. With regard to the Energy Act, we have now identified a number of adjustments that need to be made. Furthermore, additional charging stations must be installed in public parking areas. In short, this Green Deal was the first stage of a more involved process, and it has provided some useful insights.

Ritsaart van Montfrans
Founder of ‘The New Motion’
‘Electrically Powered Transport Infrastructure’ Green Deal

There were fewer new deals in the years 2013-2015 than in previous years. This reflects the focus on Green Deals with impact through up-scaling, and stricter application of selection criteria.

The strength of Green Deals is that various themes often come together in a single deal, which is why deals can be ascribed to several themes at the same time.

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The unique feature of Green Deals is that we are joining forces with a wide range of organisations from diverse backgrounds. These include companies, government bodies, knowledge institutions and NGOs. This enables us to succeed in carrying out many projects that would otherwise have likely failed. This brings us closer to achieving our policy goals.

Jan Nieuwenhuis
Director of Green Growth and Biobased Economy
Ministry of Economic Affairs
Legislation and regulation

Legislation and regulation can encourage innovation, but rules can also form a barrier to green innovation or sustainable behaviour. In the Green Deals such barriers are identified and tackled, and there is scope to experiment. The actions can be divided into four categories: 1. Procedures for permits, 2. Adjusting rules, 3. Providing scope for experimentation, and 4. Providing information on processes and procedures.

Market incentives

New products and services have to compete with the existing range. Sometimes product prototypes need an extra boost. For example, by adapting infrastructure, setting new norms, standards and labels, etc. In Green Deals the approach is: 1. to try out new arrangements/services, 2. to develop marketing tools, such as certification, to demonstrate “added value”, and 3. to strengthen the role of public authorities as leading customers.

Innovation

Innovation is the key to a greener economy. In the Green Deals, entrepreneurs develop dozens of business cases, products, revenue models and services and apply them in collaboration with initial customers. These are not generally traditional technical innovations: usually they involve setting up activities with other players, often from other disciplines or sectors, to create new revenue models.

Networking

As an independent facilitator, the government can bring organisations together, and help to set a process in motion if necessary. Networks have now been formed around various themes that combine experience and take steps towards up-scaling (with new guidelines, processes, quality standards, etc.).
Green Deal

CO₂ emission factors and CO₂ calculation tools

Reliable CO₂ figures required

Due to increasing concern about the environment and climate, more and more businesses and consumers are looking at how to calculate the carbon footprint of various products and services. However, the large diversity in the figures that are currently circulating is causing confusion: who is using which figures, and are they reliable? If carriers report widely different CO₂ emissions for the same trip, then this will confuse their customers. So the partners in this Green Deal initiative decided to join forces to build a single, reliable overview of CO₂ emission factors.

Successes

Following a head start in March 2014, this Green Deal had already produced a list of CO₂ figures for transport, energy carriers and cooling additives by the end of 2014, all validated by Milieu Centraal, an independent environmental consultancy. These figures are being used in tools such as the CO₂ performance ladder, the Environmental Barometer, Lean & Green, the CO₂ calculator of the Climate Neutral Group and the Carbon Manager. The analyses also revealed gaps in the currently available figures. For example, the emission factors for heat were so outdated that they are now being reviewed. Milieu Centraal also conducted an exploratory study on green energy and CO₂ neutrality. The partners are currently working on a business plan to maintain and expand the list of emission factors after this Green Deal project is completed.
This Green Deal drew attention to our work and provided the impetus for a dialogue on CO\textsubscript{2} emission factors. It also helped to foster the support of those stakeholders who initially resisted the initiative. We all have an interest in uniform and transparent figures.

Ingrid Aaldijk
Project leader with Milieu Centraal

Lessons

- Be aware of the potentially conflicting interests of other parties. For example, a new standard can be a disadvantage for parties who have benefitted for years from other norms that were favourable to them.
- Invest in fostering support among the stakeholders. It can help if the driving force, in this case Milieu Centraal, is independent.
- Do not become defensive if you receive negative responses; be open to criticism and keep the dialogue going.
- Be flexible; allow room for change in your plans.
- Be transparent; share what your figures and calculations are based on. Transparency is especially important if you want to win confidence in discussions involving the environment and CO\textsubscript{2} neutrality.
- Consider who the ‘owner’ is of the finished product. Because these figures are public and accessible to all, no one will automatically want to take responsibility for the maintenance of the system.
- Make a business plan for continuation of the programme when the Green Deal ends. Acquire the requisite expertise if necessary.

Aim? The participants in this Green Deal noted that the CO\textsubscript{2} emission factors on which CO\textsubscript{2} calculation tools are based are regularly the subject of discussion. This Green Deal initiative aims to harmonise these emission factors so that businesses and consumers can use the tools more effectively.

Want to know more?

www.cozemissiefactoren.nl
www.greendeals.nl/
gd162-co2-emissiefactoren-en-co2-berekeningsinstrumenten

With its Green Deal approach, the Dutch government encourages innovative initiatives for sustainable economic growth: www.greendeals.nl/english
Construction overview

2011–2015

About construction

In close conjunction with the Energy Agreement, some of the construction deals are focusing on energy efficiency and on the use of renewable energy in existing construction. In this connection, the deals focus particularly on the housing sector, mainly through various deals associated with the ‘Block by Block’ approach. Most of the recent deals relating to construction tend to focus on boosting sustainability in a broader context, i.e. taking the entire chain and the entire life cycle of buildings and structures into account. Examples of these deals are ‘Circular Buildings’, ‘Circle City’, ‘Biobased Construction’, ‘Sustainable Concrete’ and ‘Sustainable Groundwork, Road Building and Hydraulic Engineering’.

Construction Green Deals

- 48 Participants
- 372 Companies, branch and other commercial organisations

For further information see: www.greendeals.nl/english
By the end of 2011, five Green Deals had been concluded that focused on making 1500 or 2000 existing homes energy efficient within a three-year period. In this context, the term ‘energy efficient’ means an improvement of at least two label steps (based on the Energy Performance of Buildings Regulations) and/or achieving Energy Label B.

These five Green Deals are part of the Ministry of the Interior and Kingdom Relations’ ‘Block by Block’ programme. Within the framework of this programme, a total of 13 projects have been launched to make large numbers of existing homes energy efficient.

The findings and conclusions of the ‘Block by Block’ programme are set out in the Netherlands Enterprise Agency’s report entitled “‘Block by Block’: the findings; Large-scale energy efficiency in existing housing construction”.

The goal of ‘Block by Block’ was to derive learning experiences with regard to large-scale energy efficiency in existing housing construction. The aim was to assess the feasibility of using a market-based approach to achieve major energy efficiencies in housing construction and to tempt home owners to make their property more energy efficient.
Exemplary ‘Watt by Watt’ Project in Haarlem

In Haarlem, the ‘Watt by Watt’ (a ‘Block by Block’ project) focuses on sustainable value creation. In this context, the term ‘sustainable value creation’ means improving the quality of the living environment and enhancing social cohesion. To this end, the ‘Watt by Watt’ consortium is seeking synergies between different neighbourhood projects. ‘Watt by Watt’ adopts a different approach in each neighbourhood. In neighbourhoods consisting mainly of housing association dwellings, it focuses on a large-scale approach. In neighbourhoods with many privately owned homes, Haarlem has adopted a ‘door to door’ strategy. In all cases, the wishes of residents are key. Individuals living in the neighbourhood act as initiators and trailblazers, and the project facilitates them in these roles. ‘Watt by Watt’ has been a springboard for the development of various tools that help to raise awareness of energy behaviour. Here are some examples: games that challenge players to devise sustainable energy solutions in a house (such as the ‘opgewekte woningspel’ – energised home game); tailor-made advice for individual homeowners; websites like degroenemug.nl; and the ‘Oranjemeter’ (Oranje Meter) World Championship campaign. ‘Watt by Watt’ inspired Alliander (an energy network operator) to develop Hoom. Working closely with local energy initiatives in Haarlem and several other local authorities, Hoom focuses on helping residents to make their homes more energy efficient.

Most frequently adopted measures

- Roof insulation
- Cavity wall insulation
- Floor insulation
- HR++-glass

Main conclusions about Block by Block

1. The projects lead to large-scale energy efficiency measures in housing construction
2. Large-scale approaches are effective in the social rented sector
3. A unified approach is not feasible in the owner-occupied sector, and projects struggle to achieve profitability
4. It is difficult to induce owners/occupiers to take multiple Energy Label steps; they prefer incremental measures, depending on the available budget
The ‘Biobased Construction’ Green Deal focuses on encouraging the use of biobased materials and products by the construction industry. Its approach is to create a level playing field with regard to the standard building products that are currently in use. An essential requirement for this approach is that environmental data must be available for the biobased products in question to facilitate environmental performance calculations. To this end, knowledge transfer is essential. It is also important with regard to construction regulations and environmental regulations. The parties involved are also developing a joint coherent marketing strategy.

The ‘Circular Buildings’ Green Deal focuses on minimising the use (and maximising the reuse) of resources in a building’s construction and usage phase. A broad and diverse group of more than fifty parties are participating in the ‘Circular Buildings’ Green Deal. One of their goals is to use the smallest possible amount of new resources and products. Another goal is to retain products and resources within the chain (for high-quality applications) for as long as possible. This also involves extending the life of buildings by making them as adaptable as possible. The development of a common framework involving a ‘building passport’ in which details of essential circular features are recorded could be a useful mechanism to facilitate this transition. In a subsequent phase, pilot projects will be carried out to test the effectiveness of the completed passport in practice.

In the Netherlands, almost ninety-five percent of all construction waste is already being recycled. The Circle City initiative has been running in Rotterdam for several years now. It has accumulated considerable experience in reusing this construction waste (for high-quality applications) in genuine and comprehensive recycling processes. One of the ways in which this is achieved is by employing people who have difficulty making the transition to the labour market. The initiators want to share the experiences they have gained in the ‘Circle City’ Green Deal with an eye to encouraging the development of similar initiatives in at least five other cities.
Green Deal

The Green Canals

Energy tips for historic buildings

There are some 8,000 historic buildings in the centre of Amsterdam. These buildings will need to be made more sustainable if they are to be used for another 400 years. This is a real challenge for old buildings where all manner of restrictions apply to preserve their heritage value. This Green Deal, established in 2012 by Wubbo Ockels, is aimed at helping owners and occupants to make their buildings more sustainable by developing and distributing knowledge in the form of tips for energy saving and generation in historic buildings.

Successes

In March 2014, the initiative launched the ‘Green Menu’, an interactive website with information and tips for insulation, water, electricity, heat and energy saving in historic buildings. The Green Canals Foundation is developing plans together with the Association of Dutch Municipalities to scale up the concepts in the cities of Maastricht, Wassenaar, Voorschoten, Leiden and other places. This Green Deal is focussed on involving, empowering and inspiring the youth in the area of sustainability.

Initially, the idea was to establish a ‘Green Academy’, however a project-based approach proved to be more successful. These projects included everything from a competition for the ‘greenest student flat’ in Groningen to a Solar Boat Race during SAIL Amsterdam and co-creations involving students and experts, involving improvements to the sustainability of the two Conscious Hotels and the Royal Tropical Institute.
**Lessons**

- Involve young people in the project; they have fresh and creative ideas.
- Choose the right organisational form; projects proved more suitable for educational purposes than an academy.
- Do not expect the government to become involved automatically, but make sure you actively involve the relevant parties at an early stage.
- Free services do not help to increase the occupants’ commitment. It is more effective to ask for a small contribution for a quick scan, for example (this could be refunded at a later date).
- Make knowledge visually attractive, for example by using an interactive menu: first entice and then inform.
- Bring knowledge to life: develop tools and get the stakeholders involved by holding competitions, master classes or events.
- Use events as a PR tool to get the project noticed by the press.
- Try to find new partners for each project to ensure the input of fresh ideas.

**Partners?** Stichting De Groene Grachten (the Green Canals Foundation) and the Ministry of the Interior and Kingdom Relations.

**Aim?** The Green Deal for Green Canals is aimed at creating a breakthrough in the sustainability of historic buildings by means of energy savings and the generation of renewable energy. The deal is helping the partners to scale up their approach and develop and distribute the requisite knowledge.

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**This Green Deal helped us through a difficult phase. The initiative has been a great success, and when this phase ends we plan to continue making heritage buildings more sustainable and getting the youth involved in sustainability issues. If you make sustainability fun you will achieve more.**

Jelle Rademaker
Co-initiator of Green Canals

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**Want to know more?**

- [www.degroenegrachten.nl](http://www.degroenegrachten.nl)
- [www.degroenemenukaart.nl](http://www.degroenemenukaart.nl)
- [www.solarboattrace.nl](http://www.solarboattrace.nl)
- [www.amsterdamrooftopsolutions.com](http://www.amsterdamrooftopsolutions.com)
- [www.greendeals.nl/gd151-de-groene-grachten](http://www.greendeals.nl/gd151-de-groene-grachten)

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**With its Green Deal approach, the Dutch government encourages innovative initiatives for sustainable economic growth:**

[www.greendeals.nl/english](http://www.greendeals.nl/english)
Food overview

2011-2015

About food

Many components of the production chain are involved in the process of making food production sustainable. This involves, amongst others, the use of energy, crop protection agents, fertilisers and residual materials, as well as the development of new products and production methods. It is also necessary to take environmental constraints into account without compromising food safety. Green Deals support efforts to increase the sustainability of the food chain and to reduce food wastage. In this way, they contribute to the viability of the food system, as specified in the Ministry of Economic Affairs’ food agenda (October 2015).

Food Green Deals

Participants

Sub-themes

For further information see: www.greendeals.nl/english
The values of food

Boosting food sustainability sounds like a wise and logical move. But it is not as easy as you might think. Food is enmeshed in interrelated values involving public health and the ecological viability and robustness of the food system. In addition to food production (e.g. animal welfare, climate effects, and crop protection, water management, soil management and biodiversity) this concerns the processing of food (no waste and low energy consumption, low emissions). It also involves the sale of food in supermarkets, and its storage, transport and consumption. Then, of course, there are the matters of fair trade and the working conditions involved in the cultivation of food. Often, the residual waste streams from food production can be put to good use as animal feed (which, in turn, generates resources for new food), for example. They can also be used in more innovative ways such as in the production of building materials.
Different types of food deals

The broad scope of values associated with boosting food sustainability is reflected in a wide range of deals that contribute to the ecological viability of the food system. The greening of crop protection and the improvement of biodiversity on agricultural land are examples of themes that benefit from deals. The same applies to the quest for more sustainable resources, such as the use of insects as a protein source. Another issue concerns efforts to boost the sustainability of food consumption (Dutch Cuisine).

Many agricultural-sector deals dating from the initial period are energy-related. These deals focus on mitigating climate effects in the production chain, in the dairy sector or in pig farming, for example. Deals also contribute to topics such as the generation of renewable energy (e.g. by fermentation), the use of residual heat, and thermal energy storage systems.

Producing more sustainably

- Clean water (the use of cultivation techniques that cut the quantity of crop protection agents entering the water)
- Be fully aware of what plant material you are purchasing
- Skylark (cultivate greener certified plant products)
- Biodiversity+ label
- Green crop protection agents
- Sustainable pig farming
- Energy-neutral dairy chain
- Coffee Green Deal (greening the entire chain)

New crops

- Insect protein (for animal feed)
- Algae and seaweed

CO₂ and renewable energy

- CO₂ supply in the province of Noord-Holland
- ‘t Voske, Reed gasifier
- Profitable revenue models and innovative designs for cultivating crops in cities

Agriculture in and and around the city

- Thermal energy storage
- Geothermal Deal
**Legislation and regulation**

The aim of the ‘Insects for Feed, Food and Pharmaceuticals’ Green Deal is to promote the widespread use of insects in the Netherlands and throughout Europe as an alternative protein source for the future. To this end, the Dutch Insect Breeders Association (VENIK) has cooperated with the government to eliminate legislative and regulatory obstacles in this area. One major success entailed the approval in late 2014 of insects as production animals under the Animals Act. The Netherlands is also submitting a position paper entitled ‘Insects for use in animal feed’, with the aim of modifying European legislation and regulations.

**Market incentives**

The ‘Biodiversity+ label’ Green Deal has developed a label for fruit growing, arable farming and field-scale vegetable crops and cattle farms (Blief). This involves the use of a distinctive certificate to create opportunities for companies that implement internal measures to improve biodiversity. Blief products enable farmers, suppliers and consumers to support nature development on farms, to contribute to the conservation of species (such as birds, butterflies and bees) and of heritage breeds. The upcoming period will show whether certified products are marketable and whether entrepreneurs are prepared to certify their products.

**Innovation**

The parties involved in the ‘CO₂ supply for greenhouse horticulture in the province of Noord-Holland’ Green Deal include the greenhouse horticulture sector, one energy-from-waste plant, and an energy company, as well as various development agencies and government bodies. Their goal is to create a source of high-quality CO₂ (from flue gases) plus a pipeline network for the distribution of CO₂ to greenhouse horticulture companies where this CO₂ is to be used as fertiliser. They are exploring various options for filtering pure CO₂ from flue gases. They are also developing the technical facilities and business plans needed to set up an external CO₂ supply, together with a pipeline network to distribute CO₂ to companies. Work has already started on formulating the business case for the pipeline network and on research into the best CO₂ capture technology.

**Networking**

In the province of Brabant, those involved in the ‘Clean Water’ Green Deal are coordinating their efforts to keep groundwater and surface water clean. Contractors, potato growers, tree growers, and field-scale vegetable growers throughout Brabant are participating in the project. The Southern Agriculture and Horticulture Organisation (ZLTO) supports companies in the effective application of sustainable cropping systems. The government assists by providing a broader choice of resources, especially regarding the selection of minerals, as well as choosing the time of application and the method of utilisation. In June 2015, another project was launched in the province of Zeeland.
Green Deal

CO₂ Network for the Greenhouse Industry in Noord-Holland

Sustainable cultivation with pure CO₂

Plants need CO₂ to grow, and the supply of this gas is an important part of making the greenhouse industry more sustainable. Greenhouse growers currently often use flue gas produced by cogeneration plants or natural gas boilers for their CO₂. The Green Deal partners are looking for alternative, more sustainable ways of supplying greenhouse businesses with high-quality CO₂, for example by coupling them to the CO₂ emissions of the Amsterdam waste-to-energy (WtE) company AEB.

Successes

One of the strengths of the Green Deal is the involvement of a large number of market parties and local authorities. The Green Deal includes eight independent projects that are all aimed at devising solutions for CO₂ capture, transport and distribution. The WtE company HVC is to install a district heating system that will connect with the Alton greenhouse development. This system will enable HVC to meet half the energy demand of this development, equivalent to the consumption of 8,500 households. Another project is evaluating the feasibility of transporting liquid CO₂ to the Wieringermeer polder, while AEB is investing in new technology to extract pure CO₂ from its waste incinerators.

Aim? The aim of this Green Deal initiative is to develop a high-quality CO2 distribution network for the greenhouse industry in the province of Noord-Holland. This will enable this industry to decrease its gas consumption and instead use more residual heat and geothermal sources to heat its greenhouses.

Lessons

• Involve as many stakeholders as possible, preferably representing the entire chain. This Green Deal includes producers, distributors and users of CO2.
• Try to find the common interests; a Green Deal is not a goal unto itself.
• Be ambitious; with hindsight, this Green Deal could possibly have focussed on the whole of the western Netherlands, instead of just the province of Noord-Holland.
• Ensure the initiative is led by a strong leader, someone who can truly invest in cooperation.
• Talk to the government about regulatory barriers. For example, capturing CO2 out of AEB’s flue gases results in a relative increase in other substances contained in these gases. This is not a problem in practice, however it is prohibited by law.
• Consider the Green Deal primarily as a network; profit from the knowledge and experience of the other partners, for example on project financing.
• Be creative when approaching investors, provincial councils or other parties to raise funds in the form of loans, guarantees, grants, etc. Green Deals are not, in principle, financing instruments in and of themselves.
• Consider carefully how to ‘frame’ the story. CO2 is complex and not ‘sexy’, which can make it difficult to convince people or find funding for projects. A coherent and interesting story can make all the difference.

“ We will consider this Green Deal a success if we are able to provide the whole of Noord-Holland with pure CO2 produced by industry. But we still have a long way to go. This Green Deal is an excellent driver, but we really need to move towards much larger scale CO2 reduction. Only then can we make a real impact on sustainability.”

Petrus Postma
Heat and CO2 manager with Greenport Aalsmeer and chair of this Green Deal initiative

Want to know more?
www.greendeals.nl/gd163-co2-voorziening-glastuinbouw-noord-holland

With its Green Deal approach, the Dutch government encourages innovative initiatives for sustainable economic growth: www.greendeals.nl/english
Energy overview

2011-2015

About energy

Energy deals focus both on energy efficiency and on renewable energy. These Energy deals often involve extensive collaboration with industry, the agricultural sector, and SMEs. This collaboration may be with individual companies, as well as with joint ventures spanning entire industries and/or chains. Deals closed with individual companies focus mainly on resolving technical or financial bottlenecks. Various other deals mainly seek to create the preconditions (financial and/or organisational) needed to bring energy projects to fruition.

110  Energy Green Deals

762  Participants

438  Companies

For further information see: www.greendeals.nl/english
In September 2013, more than 40 organisations signed up to the Energy Agreement for sustainable growth. The core of the agreement consists of widely supported agreements on energy efficiency, clean technology and climate policy. The energy-related Green Deals are contributing to the implementation of this agreement in terms of energy efficiency, encouraging the use of decentralised energy and of electrically powered transport, in addition to giving substance to the Energy Top Sector’s programme lines (pillar 9).

### Pillars of the Energy Agreement

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<tr>
<th>Energy Agreement and the Energy Top Sector</th>
<th>Goals of the Energy Agreement</th>
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<tbody>
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<td>Energy usage</td>
<td>Renewable energy</td>
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#### Goals of the Energy Agreement

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<thead>
<tr>
<th>Energy use</th>
<th>Renewable energy</th>
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<tbody>
<tr>
<td>-100PJ in 2020</td>
<td>14% in 2020</td>
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<tr>
<td></td>
<td>16% in 2023</td>
</tr>
</tbody>
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#### pillar 1: Energy efficiency

- Various measures from the 106 Energy Deals

#### pillar 2: Scaling up renewable power generation

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#### pillar 3: Encouraging the use of decentralised renewable energy

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#### pillar 4: Setting up the energy transmission grid

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#### pillar 5: A smoothly-operating European Emission Trading Scheme

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#### pillar 7: Mobility and transport

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#### pillar 8: Job market arrangements on employment and training

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#### pillar 9: Encouraging commercialisation with a view to growth and exports

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#### pillar 10: Financing sustainable investments

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How is the ‘Northern Netherlands’ Green Deal doing now?

In the Northern part of the Netherlands, they have adopted a vigorous energy approach. A total of forty-eight projects have been initiated and implemented within the Green Deal. The area in which this region really makes a difference is in energy education.

Jeroen van den Berg, the Energy Transition Centre’s (EnTranCe) Programme Manager, explains that the Energy Academy Europe (EAE) stems from the ‘Northern Netherlands’ Green Deal. “The EAE is a joint venture between the Hanze University of Applied Sciences, Groningen, and the University of Groningen. In addition to coordinating energy education, the EAE conducts research into renewable energy and fosters innovation in this field. We are also cooperating with a range of partners, including all of the universities of technology in the Netherlands. They conduct fundamental technical research. Our focus is to capitalise on knowledge and to create links between the various parties involved.”

Wind farms are a good example of how much the individual parties need one another. “Numerous specialists are involved, varying from those who actually build the wind turbine and keep it operational, to communication specialists and lawyers, groups that are key to the success of the approach. Acceptance is an important factor if renewable energy is to succeed. In addition to being aware of the legal constraints involved, you must communicate your plans effectively.”

In recent years, there has been a significant increase in the numbers of students enrolling in energy-related degree programmes. “Being an ambitious organisation, we aim to have 3,000 students in an energy programme at Groningen by 2022.” Groningen also wants to be a launch pad for Start-ups. “The Start-up Fast Track programme is a joint initiative by Energy Academy Europe and GDF SUEZ. We encourage, support, and fund start-up businesses in the energy sector. In July 2015, three start-up companies that had participated in the Start-up Fast Track won €10,000 to invest in their energy start-up.”
Legislation and regulation

By means of the AmvB (governmental decree) Experiments (‘Decree on experiments in decentralised renewable electricity generation’), the government has helped to encourage initiatives for the local generation of energy. This has paved the way for the accelerated implementation of local energy generation. Energy network operators can participate in such initiatives where possible. This governmental decree, which was published in early 2015, facilitates the use of experimental permits over the next four years. The window of opportunity in 2015 was from 1 May to 11 September. Details of the window for 2016 have yet to be determined and published.

Market incentives

How many grams of CO₂ correspond to 1 kWh of electricity? There are various methods for calculating CO₂ footprints, but they do not all produce the same result. That was why the government, Stimular, Connekt, the Foundation for Climate Friendly Procurement and Business (SKAO), and Milieu Centraal (an organisation that specialises in providing environmental information to consumers) collaborated in a Green Deal. Their aim was to create a single list of CO₂ emission factors, based on generally accepted principles that are assured of broad support. So the discussion is no longer about calculating the most favourable footprint possible, but about cutting CO₂ emissions. The list of CO₂ emission factors is not in itself a tool for calculating CO₂ emissions. Instead, its goal is to deliver unambiguous basic figures for calculating CO₂ emissions. This list has been published at www.co2emissiefactoren.nl.

Innovation

In the Alblasserwaard/Vijfheerenlanden region, the BlauwZaam foundation has boosted support for a renewable energy supply by concluding three regional energy agreements with the goal of achieving an energy saving of at least 10%. For instance, in August 2015, the Giessenlanden local authority started replacing all of its traditional street lighting with LED lamps. This makes Giessenlanden one of the first local authorities in the Netherlands to switch its street lighting entirely to energy-efficient LED lamps. By upgrading its street lighting in this way, the local authority is not just saving a lot of energy, it is also meeting its CO₂ reduction target.

Networking

Five hundred SMEs, from bakers and butchers to leisure, hospitality, and metalworking companies have been working to achieve a 20 percent energy reduction in the workplace within a period of two years. Knowledge transfer between these various initiatives and participants has boosted know-how among the SMEs, enabling them to implement relatively simple measures. The Dutch SME association (MKB-Nederland) has pooled the experience, knowledge and tips generated during this Green Deal approach, and has made it available to entrepreneurs and key stakeholders.
Green Deal

Energy for Utrecht!

Use the limited surface area available for geothermal heating

The municipality of Utrecht has ambitious goals for their Green Deal. Priority number one is clearly their ground-source heat pump (GSHP) service desk. Geothermal heating systems are becoming increasingly popular, but there is limited space available for such systems in Utrecht and the surrounding area. The Green Deal aims to ensure that the soil under Utrecht is used as effectively as possible. The GSHP service desk accelerates and simplifies processes like feasibility studies, permit procedures and harmonisation with the plans and procedures of the province and the water board. The national government contributed expertise to the Green Deal.

Successes

Establishing a GSHP service desk was an intensive process, involving expertise on groundwater levels, soil contamination and underground infrastructure. The national government, via the Netherlands Enterprise Agency (RVO.nl), contributed knowledge on the latest national developments in the fields of the environment, technology and legislation, and this involvement was an important part of the process. The policies, permit procedures and other administrative processes of the municipality, province and water board were harmonised during joint working sessions. Parties who wish to install a GSHP system can now go to a one-stop-shop: Energiepunt Bodem, Utrecht’s GSHP service desk. This service desk also includes above-ground factors in its calculations. After all, if an office is insufficiently insulated, then the GSHP system will not function optimally. As such, the service desk will do its best to ensure that the client gets the most sustainable energy solution possible.
Lessons

- Involve partners who have the right knowledge. RVO.nl, for example, has a thorough understanding of national developments in this field.
- Try to find a common interest. In this case, the municipality of Utrecht, RVO.nl and the ministry all wanted to increase their knowledge of geothermal heating systems.
- Focus on a few key aspects. The more aspects you try to include in the Green Deal, the more monitoring will be required. It is more efficient to focus on a single goal.
- Visit other projects with the same theme – in this case GSHP systems – in order to learn from their successes and bottlenecks.
- Involve as many parties as possible, but work in small teams to ensure the momentum is not lost.
- Learn from the experiences of other municipalities, for example by organising networking meetings. This particular initiative by the municipality of Utrecht inspired the municipalities of The Hague and Den Bosch.

Monique Hoogwijk
Project manager for the Energy for Utrecht initiative on behalf of the municipality of Utrecht

To gain access to the energy stored in the soil for renewable energy development, you need to involve many stakeholders such as the municipality, the province, the water boards and the operational services. The working sessions involved as many as 25 individuals. It was very hard to create order in the chaos of regulations and policies. Without the Green Deal and the involvement of the national government, we would never have been able to do this so thoroughly.

 Partners? The municipality of Utrecht and the ministries of Economic Affairs and Infrastructure and the Environment.

Aim? The ‘Energy for Utrecht’ Green Deal involves a broad ambition to make the municipality of Utrecht more sustainable. The deal aims to achieve this by removing barriers and supporting sustainable business initiatives for effectively using the heat captured in the soil for renewable energy, stimulating energy conservation at schools and encouraging sustainable mobility in the business community.

Want to know more?
www.utrecht.nl/milieu/bodem/energiepunt-bodem
www.utrecht.nl/energie
www.greendeals.nl/gd126-utrechtse-energie

With its Green Deal approach, the Dutch government encourages innovative initiatives for sustainable economic growth: www.greendeals.nl/english
In the transport section of the Energy Agreement, the mobility sector will focus on using more sustainable fuels and more efficient vehicles, to help achieve the climate goals (improving air quality). The mobility policy includes elements such as making more efficient use of the available infrastructure capacity, and changing traffic flows (modal shift), away from road transport to transport by rail and water, for example. This will also improve accessibility.

Mobility Green Deals

34 Participants

222 Deals on electric transportation

For further information see: www.greendeals.nl/english
Number of Deals per sub-theme*

* individual deals can be associated with more than one sub-theme

<table>
<thead>
<tr>
<th>Deal</th>
<th>Number</th>
<th>Sub-theme</th>
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<tr>
<td>21</td>
<td>Electrically powered transport</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Production of liquid biofuels</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Energy-efficient transport</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Use of green gas for mobility</td>
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<td>3</td>
<td>Energy-efficient logistics</td>
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<td>4</td>
<td>Emission-low transport</td>
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**Renewable fuel vision**

In line with the Energy Agreement, over a hundred parties have cooperated with the government in drafting a broad-based fuels vision for mobility and transport. The government also helped to translate the vision into a roadmap with a 5 year action plan. The central goals are:

- Contributing to overall energy efficiency by 15 to 20 PJ by 2020.
- Reducing CO₂ emissions by up to 25 Mt by 2030 (a 17% reduction relative to 1990). It has also adopted the EU’s aspiration of reducing CO₂ emissions by at least 60% by 2050.
- By 2035, all new passenger cars sold must be able to operate without any CO₂ emissions.

To achieve these goals, we have adopted a multi-pronged strategy, which takes the potential of various modes of transport into account. The goal, in all cases, is greater efficiency. Furthermore, the essence of this strategy is that passenger cars, buses and lorries must operate on electrical power wherever possible. However, electrification is not a feasible option for the maritime and aviation sectors, nor for the purposes of heavy transport. Thus, efforts in those sectors are aimed at efficiency improvements and clean biofuels.

The planned transition to low-emission mobility and transport will deliver green growth opportunities for the Dutch economy. This applies to electrically powered transport (infrastructure and services), as well as to the widespread use of biofuels. Several Green Deals have already been established to put these agreements into effect. These include deals focusing on car sharing, on emission-free commercial transport in inner cities, and on the charging infrastructure for electric vehicles.
Electrically powered transport

Many mobility deals relate to electrically powered transport. The development of electrically powered transport is not only dependent on new technology, but it also requires the creation of new revenue models. Legislation and regulations relating to energy supply, excise duty, and taxation have a great deal of influence on that area. It is incumbent on the government, energy network operators and market players to come up with new solutions. Electrically powered transport currently features in more than 20 individual deals. In addition to deals involving large-scale cooperation to shape the requisite conditions, there are a number of deals with various regions in which government bodies are cooperating with market players to encourage the growth of electrically powered transport.

Growth in the number of electric vehicles

The rapid growth in the number of electric (or semi-electric) passenger cars is primarily the result of tax incentives.

* Includes trolley buses and some hybrid buses
# Excluding full hybrid vehicles
Market incentives

The goal of the ‘Infrastructure’ Green Deal for the charging of electric vehicles (which has now been concluded) was to create 10,000 smart charging stations on private and publicly accessible sites. A second goal was to create favourable preconditions. The goal concerning the number of charging stations has now been achieved. European standardisation in the area of charging methods and power plugs is now in place. In addition, a market model for charging and payment services has been developed. A number of obstacles have yet to be resolved. A new deal was established in June 2015, in which the chain partners involved aim to set up a nationwide public charging infrastructure for electric passenger cars. Thus, government funding is available to those local authorities that are investing in charging infrastructure in cooperation with companies.

Innovation

In the ‘Zero Emission City Logistics’ Green Deal, a broad-based consortium of companies, industry associations, and local authorities is aiming to achieve the emission-free provisioning of city centres. This puts them way ahead of European legislation, which states that, by 2050, access to cities will be restricted to zero emission vehicles. The goal is to reduce the emissions of CO₂, NOx and fine particulates produced by city logistics to zero. Noise nuisance will also be restricted. Efforts are being made via a wide range of regional pilot projects to determine where and how Zero Emission deliveries of goods might be possible. People are looking at ways of improving vehicle technology, at how means of transport are utilised and loaded, and at innovative logistics concepts.

Networking

No less than 29 different parties are cooperating to achieve the ‘Car Sharing’ Green Deal’s ambitious target of 100,000 shared cars by 2018. Car-sharing and the sharing economy are still in their infancy. It has been shown that those who make more conscious use of passenger cars in this way actually make less use of motor vehicles in general, thereby benefitting the environment. The parties involved aim to achieve this through the exchange of know-how and by learning from one another’s experiences.

Legislation and regulation

Together with various local government bodies, the Foundation for Zero Emission Bus Transport is carrying out a number of pilot projects. The goal is to develop a concession structure that is tailored to the goal of achieving zero-emissions in public transport by bus. These pilot projects are taking place in regions such as Gelderland, Brabant and Maastricht. In this context, it is crucial that public procurement procedures are given sufficient scope to examine the total cost of ownership, rather than focusing purely on the lowest purchase price. A simulation model has been developed that should help government bodies to make good decisions and to explore the options for new financing models. The government is assisting by eliminating potential obstacles in legislation relating to concessions.
Following the launch of this Green Deal initiative in 2011, the number of electric cars in the Netherlands increased to 60,000 in 2015. The market model for the charging infrastructure has been designed so that, in principle, the owner of an electric car can recharge their vehicle at any charging point in the Netherlands using a single pass. This market model is unique in the world.

For the purposes of tax deductibility, electric vehicles are currently mainly interesting for the commercial market. The private market is lagging behind, because although electric cars are becoming increasingly affordable, cars that run on fossil fuels are still cheaper. This gap will need to be closed to encourage private individuals to go electric.

This Green Deal initiative has helped to introduce electric vehicles to the Dutch market, it has strengthened the Netherlands’ position as a pilot project and front-runner and it has led to the removal of various barriers. The result is less CO₂ emissions, improved air quality and new employment opportunities. The Netherlands now has a strong international position in this sector. Thanks to the initiative, car manufacturers started delivering electric cars ahead of schedule and a charging infrastructure was rapidly created. This Green Deal initiative is due to end in late 2015, but new cooperation plans are on the drawing board. Both the market and the government need to make a continued and determined effort to invest in a responsible strategy that will culminate in a full scale roll-out.
Lessons

- Due to the wide range of interests, it is crucial to foster mutual trust. Everybody has the same objective, but each chooses their own route. Individual interests may temporarily conflict.
- Keep communicating and meet regularly. If you do not communicate regularly then issues will remain unresolved. It is important to maintain momentum, and meetings are an ideal place for the partners to motivate each other.
- Be patient and keep sight of your objective. The partners’ attention and enthusiasm may well lapse after a time. Prevent this by setting clear ambitions and objectives for the long term.
- Be aware that legislation is not always designed to foster innovation. In this Green Deal initiative, the key legislative bottlenecks concerned tax deductibility, energy legislation and policy on the installation of public charging points.
- Obstacles will be encountered and will need to be overcome. It is important not to give up and to stick to the process.

“We were surprised by how quickly the world was able to change. A whole new sector arose in just five years. This Green Deal initiative can already be called a success, but this success will be even greater if a new plan can be completed before the end of the project and we have gained the commitment of all the stakeholders. There is plenty more potential for electric cars in the Netherlands.”

Marco van Eenennaam
Expert on electric cars with the ANWB (Dutch automobile association)

Want to know more?
www.nederlandelektrisch.nl
www.nederlandelektrisch.nl/Formule-E-Team
www.greendeals.nl/gd005-elektrisch-rijden

Partners? The Formula E Team (FET):
ANWB, BOVAG, Energie Nederland, NEVAT, Netbeheer Nederland BV, RAI Vereniging, Stichting Natuur & Milieu, TU Delft, Eindhoven University of Technology, University of Twente, Vereniging DOET, VNA, VNG and the Ministry of Economic Affairs.

Aim? FET wishes to establish the Netherlands’ reputation as an ideal country for electric transport by promoting this technology, by stimulating the market for electric vehicles and infrastructures and by developing and realising the earning potential of this technology.

With its Green Deal approach, the Dutch government encourages innovative initiatives for sustainable economic growth: www.greendeals.nl/english
Biodiversity overview

2011–2015

About biodiversity

The aims of government policy are to preserve biodiversity in the Netherlands and to reduce any impact on global ecosystems. Generating greater awareness about the services that ecosystems can provide will help to boost support for the preservation of biodiversity, for example. The Green Deals’ direct contribution to biodiversity mainly consists of pilot projects involving new business cases and revenue models. Biodiversity does not exist in isolation, it is deeply interconnected with other themes. In many cases, this cross-cutting theme also serves to interconnect other elements.

- 30 Biodiversity Green Deals
- 173 Participants
- 16 New revenue models

For further information see: www.greendeals.nl/english
Distribution of Biodiversity Green Deals across the themes of the Government Vision 2014 ‘The natural way forward’

With regard to the details of the ‘Edifice’ themes, it is up to society to take the initiative. Accordingly, it is not surprising that most of the deals that have been closed relate to these themes. As the Green Deal is a bottom-up tool, demand articulation is, by definition, a matter for the instigators and companies involved, rather than the ministry itself.
In society, there is a growing willingness among government bodies, businesses and members of the public to get involved in helping the natural environment. There is increasing recognition of the natural environment’s importance in terms of other societal goals in areas such as the health sector, agriculture, the financial sector and the horticulture industry. In an effort to augment and accelerate this movement, and to reposition the natural environment in society, the Ministry of Economic Affairs is holding so-called ‘Green Table’ meetings (at the initiative of, and together with, parties from society). The purpose of a Green Table meeting is to explore new forms of synergy between the natural environment and other societal objectives, and to take joint responsibility in this regard. A Green Table meeting can be arranged for a special (one-off) occasion, with the goal of reaching arrangements on a specific topic. Alternatively, it can be used for joint efforts to reach a Green Deal. Three Tables were held in 2015, and another series is planned for the spring of 2016.
Market incentives

Six Green Deals (which fall under the ‘Nature and Recreation’ umbrella deal) were completed in 2015. The results and lessons learned from these deals are currently being analysed. Details will be made available in early 2016, to enable other Green Deal participants to take advantage of them. One of these deals is the ‘Zeeburg Campsite’ Green Deal. The purpose of this Green Deal was to combine the elements of ‘growth’ and ‘green’ by expanding the site in an environmentally friendly manner. The zoning plan has now been adopted by the municipal council. The campsite owner hopes to uncork the champagne in the spring of 2018. So what has been a very protracted process (it started around the turn of the century) has, nevertheless, been successfully concluded.

Innovation

Together with its knowledge partners, the Biomimicry Institute is part of a consortium that has augmented the biomimicry infrastructure in the Netherlands. This involved the development of a 2012-2020 roadmap and the creation of a platform comprised of universities, colleges, knowledge institutions and SMEs. Two iconic projects have generated practical results. A large network has been created in which knowledge is accumulated and distributed. There is a Biomimicry Research Group in Den Bosch and an MSc programme in Biomimicry is scheduled to commence at Utrecht University in 2016. The Netherlands is leading the way in the creation of a European Biomimicry network.

Networking

The natural environment has a positive effect on people’s physical, psychological and social health. The use of a green, natural environment as part of a healthy lifestyle can help people avoid hospitalisation (and the associated expense), while helping to reduce the use of medication and medical devices. Exercise and relaxation in a green environment also help to reduce sickness absenteeism. The ‘Beterinhetgroen.nl’ Green Deal will collect information on the use of green living environments to promote health, and make this accessible via the beterinhetgroen.nl widget. The goal is to get more people to benefit from the positive health effects of green areas in their immediate living and working environments. The target group is very broad, consisting of members of the public, patients, and doctors, as well as other health professionals who advise or refer clients or patients.

Legislation and regulation

The Netherlands imports approximately 4 million cubic metres of peat each year. In some of the applications for which peat is used, good biobased alternatives are available. Adequate supplies of wood are an essential requirement for the production of peat substitutes. However, the wood component of organic residual waste streams is increasingly being used for the production of renewable energy, supported by existing financial incentives. Those involved in the ‘Peat Substitution’ Green Deal are endeavouring to create a market in which the production of peat substitutes can compete commercially with the use of wood streams for energy production. Only in this way will it be possible to substantially boost the production of peat substitutes. Meanwhile, this topic is now on the policy agenda. An initial move has also been made with regard to the adjustment of National Waste Management Plan 3.
Green roofs are a valuable asset in the urban environment. They capture fine particles out of the air, store rainwater, regulate the building temperature, provide cooling for the city, provide extra living space and they look good! Despite these benefits, green roofs are rarely a part of renovation projects. The reason is that the extra investment mainly benefits ‘society as a whole’.

Investors generally see only indirect benefits in the form of the extended service life of a roof: fifty years as opposed to twenty for bitumen roofs. The Green Deal partners are studying how to convert the advantages of green roofs into concrete profits for investors, for example by means of tax differentiation and lower premiums.

Successes

This Green Deal initiative currently has forty partners. Together they identified the opportunities and bottlenecks for green roofs and coupled these to various categories of building owners. Working groups studied promising designs for green roofs and identified the following potential benefits: extra BREEAM sustainability credits, lower drainage and water rates due to storage and recycling of rainwater, lower insurance costs for homeowners in flood prone areas, increased biodiversity and positive behavioural influence. Follow-up steps will involve removing regulatory barriers and providing incentives for green roofs.
Lessons

- Try to involve a wide range of partners and organisations with a stake in the concept. The more organisations join up, the more knowledge will become available.
- Involve municipal and provincial councils. They have a stake in social progress and the Green Deal initiatives can make an important contribution to this goal.
- Try to find partners who have additional expertise. In this project the commercial property expert Klépierre and the province of Noord-Brabant provided added value.
- Turn bottlenecks into opportunities. Does the BREEAM system provide insufficient encouragement for biodiversity goals? Then make sure this is rectified!
- Divide the group into small working groups. This will help to keep the discussions focussed on concrete matters.
- Maintain the focus and make choices together in the group.
- Maintain close ties with the ministry. Effective and open talks with the ministry can be very valuable for both the process and the project objectives and will result in useful information and contacts.
- Make the most of all means of communication and opportunities for publicity to achieve the objectives. Publicity campaigns draw attention to the project.
- Last but not least: try to involve frontrunners and inspired partners. They will help you to achieve the fastest results.

Aim? Green roofs, water roofs, utility roofs and PV energy roofs all help to improve the environment, public health and water management. This Green Deal initiative focuses on conceiving concrete profit models.

Lessons

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We want to change people’s mind-sets so that green roofs become commonplace. It is well known that a green environment is good for health and well-being, and once people have seen how beautiful green roofs are and what you can do with them, they are often won over right away.

Erik Steegman
Director of Living Roofs

Partners? The initiator was Living Roofs (Leven op Daken). They collaborated with producers of roofing materials, garden maintenance companies, roofers, the business associations VHG and Vebidak, water boards, various municipalities, the province of Noord-Brabant, NIOO-KNAW, VIBA-Expo, Alterra, Achmea, Rabobank, Klépierre and the ministries of Economic Affairs and Infrastructure and the Environment.

Want to know more?
www.levenopdaken.nl
www.amborcreatie.nl/GD_GroeneDaken
www.greendeals.nl/gd167-groene-daken

With its Green Deal approach, the Dutch government encourages innovative initiatives for sustainable economic growth: www.greendeals.nl/english

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Biobased economy overview

2011–2015

About the Biobased Economy

The biobased economy is a transition to an economy that uses renewable resources (biomass) such as sugar beet, maize and residual waste streams from the agricultural sector, rather than fossil resources. The main applications are: chemicals, materials, transportation fuels, heat and electricity. The ways in which Green Deals contribute to the realisation of a biobased economy include the creation of new business cases and eliminating bottlenecks in the area of legislation and regulations.

66
Biobased economy Green Deals

369
Participants

28
Business cases in development for biobased materials

For further information see:
www.greendeals.nl/english
In a Biobased Economy (BBE), the available biomass is used to derive the greatest possible value. Biomass consists of a number of components that, after being separated, can each be used individually. This can confer a higher added value on the biomass than would be possible if it had not been separated into these components. We are becoming better at separating the various components of biomass, through the use of new technology such as biorefining.

Using biomass to derive the greatest possible value is known as cascading. The pyramid illustrates the use of biomass for food, animal feed, non-food materials, and energy, where blocks that are located higher in the pyramid represent a higher added value. In Green Deals, new business cases are developed in which the best possible use is made of biomass and residual waste streams.

The deals concluded in 2012 mainly focused on bioenergy. Subsequent deals focused mainly on the development of materials, animal feed and chemicals.

Characterisation of participation sectors

We have been able to close a Green Deal with the government. This vote of confidence boosted our conviction that we really are engaged in a meaningful endeavour. The victory over the Double-Counting Bioticket (“biotickets” are tradable renewable energy production certificates) dossier, in particular, is a significant step forward. We are very proud of that.

Sophie Snaas
Project Manager, HarvestaGG
‘Grass Refining’ Green Deal
The Biobased Economy

- Biomass waste streams
- Biobased products
- Health and lifestyle
- Materials
- Chemicals
- Transportation fuels
- Energy
- CO₂
- Animal feed
- Nutrition
- Food
- Compost
- Plantation
Legislation and regulation

Those involved in the ‘Biobased Construction’ Green Deal are committed to the elimination of regulatory hurdles. The goal is to create a level playing field for biobased materials and traditional building materials in the construction industry. Those involved want biobased materials, products and construction concepts to be incorporated into relevant construction and environmental regulations, such as the Buildings Decree. Their market entry could also be boosted by incorporating biobased materials into the Environmental Investment Allowance (MIA)/Random Depreciation of Environmental Investments (VAMIL) list.

Market incentives

Those involved in the ‘Natural Plastics’ Green Deal are working to expand the market for biobased materials in the public domain, through the dissemination of knowledge and by increasing customer awareness. In addition, those who are party to this Green Deal shall endeavour to integrate knowledge about the biobased layout and management of public space into mainstream educational programmes.

Innovation

In the ‘HarvestaGG in the Northern Netherlands’ Green Deal, the business community, government and knowledge organisations are cooperating to develop an innovative green economy. In this Green Deal, the value of plant biomass is fully utilised by converting it into high-quality products. These include animal feed, building blocks for bioplastics, organic fertilisers, and green CO₂ for horticulture and industry. Ultimately, there will also be bio-LNG, a sustainable green transportation fuel. This is the first time that a biobased concept of this kind has been realised on a commercial scale.

Networking

The ‘Natural Fibres’ Green Deal involves numerous parties from a wide range of sectors. This Green Deal covers four pilot projects that focus on the production of roughage forage for dairy cows, textiles, building materials and composites. These projects are intended to demonstrate the feasibility of profitable natural fibre cultivation that is attuned to the demand for resources from hemp grown for fibre and flax. This varied network of parties gives rise to new partnerships and new chains.
Grasses and other crops can replace finite raw materials

The crops are hemp (for fibre), flax (for oil), flax (for fibre), bamboo and Oenothera. This Green Deal initiative also wants to stimulate the use of grass harvested from verges, nature areas and airports as well as elephant grass and water plants in sustainable high-grade products. Grasses and water plants are typically thought of as waste products and a budgetary expense, while they can be a useful raw material for the production of paper, bioplastics, biocomposites or building materials. A profitable business case will have benefits for all parties. In this case, the business community will consume less fossil raw materials and municipalities can achieve their sustainability ambitions.

Successes

The parties to this Green Deal initiative successfully grew biobased crops at a number of sites. Information signs were installed next to these fields to inform the public about the use of flax and hemp fibres. Various local producers of biobased products are interested in acquiring the harvest; the 2014 crops were processed in sustainable paints and biocomposites. The business case has proved profitable, so production can now be scaled up. This Green Deal led to various new partnerships between the participating organisations.
Lessons

- Make clear agreements in the chain (from production to sales). Identify who will produce how much of which products beforehand, so that potential buyers are guaranteed to receive the quantity of product they need.
- In connection with this: try to involve the entire value chain, from raw material to finished product. Clear agreements in the chain are important to ensure that the partnership is profitable for all parties.
- Focus on the unique properties of the product (e.g. flexibility or fire resistance) in all communication, be it with the producers of biobased products or the buyers (such as government agencies).
- Do not limit the initiative to simply sharing knowledge, but also take concrete action. For example, this Green Deal initiative started by organising special workshops for buyers and government purchasing agents so that they could come closer to achieving their sustainability ambitions by investing in innovative projects.
- Run pilot projects. Some products, such as the public benches made of biobased materials, have not yet been tested for maintenance practicability and durability. Pilot projects at Schiphol Airport and in Haarlemmermeer are providing a wealth of new information on the weather resistance properties of these materials.

“\nWe want to increase the potential of flax and hemp as production crops. In the long run we want to increase production flexibility and guarantee the continuity of these crops for use as raw materials in biobased products. This will give local producers more opportunities to experiment more with new and promising biobased products."

Evelien Adriaan
Project manager with the Green Deal initiative for grasses and crops

Want to know more?
www.amsterdameconomicboard.com/green-deal-grassen
www.greendeals.nl/gd160-grassen-en-gewassen
Resources & Circular Economy overview

2011–2015

About resources & circular economy

The goal of the government’s resources policy is to facilitate smarter, more efficient and more prudent use of resources, while supporting efforts to achieve a circular economy.

A circular economy is an economic system based on the reusability of products and resources, and on the conservation of natural resources. It also endeavours to create value at every link in the system.

For further information see: www.greendeals.nl/english
From a Linear Economy to a Circular Economy

The resource- and circular economy based Green Deals all contribute to the transition from a linear economy to a circular economy. They focus on the following topics:

- Preventing the use of resources.
- Making the origin, design and use of products (and the product chain) as sustainable as possible.
- Encouraging the use of renewable, biobased resources.
- Encouraging the use of sustainable products and services.
- Using new revenue models and incentive models.
- Improving waste separation and waste collection.
- Optimising reuse.
- Linking knowledge and education on circular economy.
Green Deals in the circular economy

The numbers of Green Deals in the circular economy, per topic, are shown below. Individual Green Deals can be associated with more than one topic.
Legislation and regulation

Those involved in the ‘Collection, dismantling and recycling of mopeds and motorised bicycles’ Green Deal want to dismantle mopeds and motorised bicycles in an environmentally friendly manner. This is subject to the precondition that no separate environmental permit will be required for this activity. That was mediated by a change in the Activities (Environmental Management) Decree, with effect from 1 March 2014. In addition, if companies need to dismantle a moped, they can deregister it online via the Road Transport Agency (RDW). There are currently around 30 vehicle dismantlers and 1275 collection points. This represents a reasonable degree of national coverage. Efforts are currently being made to expand this network still further.

Market incentives

A ‘Fair Performance Ladder’ has been established, in the context of the ‘Fair Meter’ Green Deal. This ‘Fair Performance Ladder’ has been applied in the context of a public procurement, to derive an energy meter that is as sustainable and as fair as possible. The public procurement was based on ‘Best Value Procurement’, whereby energy network operators were able to indicate their level of aspiration.

Innovation

The potential of an innovative business-to-business revenue model is explored in the ‘Take Back Chemicals’ Green Deal. In this revenue model, suppliers do not relinquish ownership of the chemicals. They take them back after use. As a result, both recipients and suppliers are motivated to conserve resources and energy. A series of pilot projects are currently in progress. When they have been completed, the options will be explored. One possible result is a roadmap for the roll-out of this revenue model in the Netherlands.

Networking

Those involved in the ‘Sustainable Groundwork, Road Building and Hydraulic Engineering (GRH)’ Green Deal have jointly developed an approach to the issue of making the GRH sector more sustainable. The numerous parties involved are jointly attempting to make the entire sector sustainable. These parties consist of clients (such as provincial authorities, local authorities, ProRail, the Ministry of Defence, and the water boards); market players (contractors), knowledge institutions and industry associations. The clients agree that they will make their public procurements and projects more sustainable, in accordance with the Sustainable GRH Approach, and that they will learn from one another how to better exploit opportunities for sustainability and innovation. The municipality of Zundert, for example, has put a ring road out to public procurement. Using an integrated design and construct contract, it is challenging the contenders to tender for a low-maintenance bicycle bridge and to create ecological corridors.
Green Deal

Sustainable and efficient use of WtE incinerator bottom ash

Incinerator bottom ash recycling

Incinerator bottom ash (IBA) is a residual product of waste incineration in a WtE plant. Because it contains pollutants, IBA is currently only used as a secondary construction material in situations where there is no risk of the material leaching into the soil or groundwater. The special facilities required for using IBA entail extra investments and monitoring responsibilities. The WtE plants investigated new technologies for recycling the material into an unrestricted construction material, for example as an alternative to sand or as an aggregate in construction materials.

Successes

IBA is a residual product of waste incineration in a WtE plant. Because it contains pollutants, IBA is currently only used as a secondary construction material in situations where there is no risk of the material leaching into the soil or groundwater. The special facilities required for using IBA entail extra investments and monitoring responsibilities. The WtE plants investigated new technologies for recycling the material into an unrestricted construction material, for example as an alternative to sand or as an aggregate in construction materials.
Lessons

- Make the Green Deal agreements as clear as possible, so that all parties know what is required of them. Formulate the objectives clearly so that there is no room for misinterpretation.
- Time passes quickly and the year will be over before you know it, so get to work right away and keep the pace up. It will take a lot of time to get everyone pointed in the same direction, organise permits, etc.
- Leave the responsibility for implementation, development and/or research to the individual members. This will make it possible to explore several routes simultaneously and compare these at a later stage.
- Do not change the rules of play once you have started: this can put your objectives at risk.
- Talk to the ministry if you are confronted with regulatory barriers, etc.

Aim? Waste-to-energy (WtE) plants are investing in the sustainable and efficient use of incinerator bottom ash (IBA) for the entire chain. Their ambition is to recycle 100% of the IBA for use as an unrestricted construction material by 2020.

Lessons

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With its Green Deal approach, the Dutch government encourages innovative initiatives for sustainable economic growth: www.greendeals.nl/english

This Green Deal initiative will be a success if all IBA can be used in a non-sealed environment by 2020. Thanks to the enormous efforts made by the partners in this Green Deal initiative, this objective is certainly feasible. That’s something we can be proud of.

Jan-Peter Born
Chair of the working group on residual products of the Dutch Waste Management Association

Want to know more?
www.verenigingafvalbedrijven.nl/nieuws/nieuwsbericht/doel-green-deal-aecbodemmas-binnen-handbereik/categorie/recycling.html
www.greendeals.nl/gd076-verduurzaming-nuttige-toepassing-aec-bodemassen/
The government wants to enhance the Dutch water sector’s already strong position by encouraging cooperation between the business community, knowledge institutions and the government as part of the Top Sectors approach. The Water Top Sector consists of three sub-areas: delta technology, marine technology and water technology. The Water Top Sector’s economic goal is to double the sector’s added value. In addition, this top sector plays an important role in the societal task, in areas such as water safety and the sustainable availability of adequate quantities of drinking water and process water. Given the strong position of the water sector, in terms of expertise, the Netherlands can play a leading role in solving (societal) water and climate issues around the world.

Water Green Deals

Participants

Companies

For further information see: www.greendeals.nl/english
Working sustainably with water

Green Deals in the domain of water are often aimed at improving natural systems and at making production processes more sustainable. Two examples from the maritime engineering sub-area are reducing emissions from (commercial) vessels and bringing about behavioural changes in the recreational boating community. The goal of the latter example is to reduce pollution in vulnerable natural habitats and marinas. Another Green Deal theme in this sub-area involves encouraging the shipping industry to replace polluting diesel fuel with LNG. Green Deals aimed at generating clean tidal energy and the intake of salt water into the Oosterschelde tidal basin are two examples from the delta technology sub-area. Green Deals in the water technology sub-area demonstrate a strong relationship with the circular economy. The resources plant and the energy plant are two examples. In both cases, wastewater is no longer perceived as waste, but as a source of renewable energy and of novel valuable substances. This development has the potential to achieve wide ranging sustainable results, yet it still faces various legislation-related obstacles that require attention.

Markets

Number of deals per sub-theme
Clean Water work programme

The government’s aspiration is to make Dutch waters chemically clean and ecologically sound. Water fit for swimming, in as many locations as possible. Water as a resource for the production of drinking water, for industry and agriculture as well as for plants and animals. In an effort to get things moving, Melanie Schultz van Haegen (the Minister of Infrastructure and the Environment) submitted the Clean Water Work Programme to the Dutch House of Representatives on 25 November 2015. In this programme, the government and regional authorities, as well as the business communities and NGO’s involved, set out various agreements to meet the government’s aspirations. In the Clean Water Work Programme, all of the parties involved in water jointly determine what additional measures are needed, and which cases are the most urgent. Green Deals are one of the tools that can be used to achieve these goals.

Clean Water work programme

Striking development

In recent years, there has been an increase in the number of companies working in this sector and in the number of individuals the sector employs. Projections indicate substantial future growth. This is partly due to global demand for measures to address the effects of climate change. In this context, Dutch solutions have a worldwide reputation for solid reliability. Ever greater efforts by the Water Top Sector, in cooperation with other Top Sectors such as energy, horticulture and agrifood, have resulted in an upward trend in the water figures.
Market incentives

The regional parties involved in the ‘Frisian Water Chain’ Green Deal are attempting to achieve large-scale sustainability in the water chain in Friesland. The province of Friesland aspires to become one of the three main centres of excellence in the world in the field of water technology. For the period from 2012 to 2015, the province has made a grant of one million euros available to encourage the widespread adoption of promising innovations in the water chain. The 27 local authorities in Friesland, Wetterskip Fryslân (the Frisian Water Board), CEW, and Vitens will apply these innovations to the water system and the water chain. Meanwhile, various innovations are ready to be introduced to the market. These include techniques for reducing emissions and water usage, involving the hand-washing facilities in lavatories, for example.

Innovation

Those involved in the ‘Province of Zeeland’ Green Deal are working on a business case for a Grevelingendam Tidal Test Centre. The goal is to establish a test centre for other tidal power plants. This includes the turbines for the Brouwersdam. In the context of a joint fact-finding exercise, four consortiums are working on a business case. A smaller plant appears to be the most feasible option. In parallel to this, work is proceeding on the government’s Grevelingen Volkerak Zoommeer spatial development strategy. This will ultimately result in choices being made with regard to hydraulic engineering work in this area (opening the dam, improving water quality). The proposed plant will make use of tidal energy. In addition to generating green electricity for 30,000 to 50,000 households, there is scope to expand it still further.

Networking

Together with regional partners such as provincial authorities, water boards and water companies, LTO (the Dutch Agricultural and Horticultural Organisation) wants to make use of the knowledge and experience gained from the ‘Clean Water for the Netherlands’ project. It aims to help farmers and horticultural producers develop sustainable integrated cropping systems, in the context of the ‘Clean Water for the Netherlands’ Green Deal. The approach used involves farmers and horticultural producers working jointly in study groups, and discussing the options for sustainable cropping systems. These groups also evaluate progress regarding the environmental impact of production at individual companies. Not only is this approach greatly valued by farmers and horticultural producers, it also helps to promote awareness. The government has set up a ‘contact point’, to which project managers can submit details of any bottlenecks that are obstructing integrated solutions. One issue relates to the re-labelling of crop protection agents, which limits the options for using Low Dosage Systems.
Green Deal

Fisheries for Clean Seas

Separated waste collection and storage

Forty percent of all waste that washes ashore is produced by sea-based commercial activities, among which the fishing industry. The Netherlands has a large amount of small fishing fleets spread out along the entire coastline, so it is not easy to get everybody together. This is why the participation of KIMO Netherlands and Belgium was so important. This association of coastal municipalities represents a large network of stakeholders in the fishing industry. This Green Deal initiative stimulates separating waste on board the fishing vessels into household waste, ‘Fishing for Litter’ waste (waste collected as part of the catch) and waste from fishing nets. Such waste separation requires the cooperation of fisheries, port authorities, waste collectors and municipalities.

Successes

This initiative was special because of the number of different stakeholders involved. The first results of the pilot projects have been positive. For example, the fisheries in IJmuiden are enthusiastic about the ‘big bag’ for household waste, which has proved to be more practical than a container or rack. A number of pilot projects focussed on dolly rope, the polyethylene mesh used to protect fishing nets that can break off and end up in the sea. Potential solutions include using alternative materials or changing behaviour (for example with the use of a deposit system to encourage the collection and recycling of the material). This Green Deal initiative will continue until 2020, by which date all fishing fleets are required to have systems for the efficient processing and recycling of fisheries waste.
Lessons

- Do not set down rules, but develop measures together with the sector that they will be obliged to carry out.
- Involve the entire industry. If fisheries separate their waste, then the port authorities need to be able to process it separately. This requires them to harmonise their processes.
- Seek the cooperation of stakeholder organisations, such as KIMO. They have closer ties with the industry than the government has, and therefore can be a useful driving force behind the initiative.
- Get to know the industry. Spend a day working with the stakeholders to see how the industry functions in practice. This will help foster mutual understanding.
- Businesses will be more inclined to take fast action if government bodies carry out extensive pilot projects first. Government authorities can learn a lot from the ‘learning by doing’ mentality; pilot projects can provide a wealth of valuable practical knowledge.

"This Green Deal initiative was able to bring the entire fishing industry together under one roof. The aim was not to set down rules, but rather to develop suitable solutions together that could count on the support of all the stakeholders.
As representatives of the government, our main role was to listen and encourage initiatives from the bottom up, which is much more effective than regulating matters from the top down."

Mareike Erfeling
Advisor with Rijkswaterstaat Zee en Delta (department responsible for public works and water management in the Zeeland region)

Partners?
VisNed, various port authorities and municipalities, KIMO Netherlands and Belgium, Bek & Verburg, MAIN (Maritieme Afvalstoffen Inzameling Nederland), The North Sea Foundation, Prosea and the Ministries of Infrastructure and the Environment and Economic Affairs.

What?
The Fisheries for Clean Seas Green Deal initiative was launched by the fishing industry in order to take responsibility for the amount of waste that this industry deposits in the sea. The entire chain, from fisheries to port authorities and municipalities, is involved.

Want to know more?
www.greendeals.nl/english
Colofon
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