

Environmental Report 2010



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This Environmental Report is issued in digital form only. To increase its readability and functionality, it has also been placed on the website in HTML format. The complete Environmental Report can also be downloaded in PDF format.

This Environmental Report is an English translation of the original Dutch report. In the event of textual inconsistencies between the English and the Dutch version the latter shall prevail.

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Introduction



At Cosun, we believe that all our actions should be socially responsible. Everything we do and everything we do not do has repercussions on the three elements of corporate social responsibility: profit, planet and people.

In this Environmental Report for 2010 we take a closer look at the 'planet' aspect of corporate social responsibility. The report is structured around the following topics:

1. sustainable cultivation
2. climate change
 - energy consumption and fossil fuels
 - greenhouse gas emissions
3. water consumption

Sustainable growing is not one of Cosun's direct activities. Yet we recognise its great importance because our cooperative has direct ties with the arable farming sector. Together with our suppliers, we promote the sustainable growth of our raw materials in the interests of the industry and the environment.

We are studying how the Global Reporting Initiative (GRI) can serve as a model for a CSR report. The GRI consists of uniform guidelines on the economic, social and environmental content of a CSR report. It therefore makes such reports comparable and transparent. It is our intention to report on our environmental performance in accordance with the GRI as from 2012. In the year ahead we will determine how Cosun can best interpret and apply the GRI.

As in previous years, the Environmental Report for 2010 consists of two parts. In the first, we report on the improvements in our environmental performance based on the three environmental elements of corporate social responsibility. In the second, we provide hard data to account for each of our business groups' performance. Through the use of environmental management systems and permanent improvement, our business groups are steadily reducing their environmental impact, provided there are no exceptional circumstances. Explanatory notes are provided to clarify the figures in part two.

We hope we provide the reader with a good view of our environmental performance and our achievements in the past year.

Breda, April 2011

Sustainable cultivation



Sustainable cultivation generates enough income for the farmers, can be continued 'for ever' and provides products that can be processed without harming the environment. As a leading agricultural cooperative, Cosun recognises its duty to help farmers make their crops more sustainable. We do so directly by supporting the growers and indirectly by adopting methods to measure sustainability.

In the latter capacity, Cosun is active in the European Food Round Table, an initiative to promote sustainable food production and consumption. Through the Food Round Table, the European food industry and the EU together create uniform methods to assess a product's environmental footprint. The Food Round Table also studies how the information is communicated to provide consumers with accurate and understandable information on the product. Products are made fully comparable.

Cosun is also active in the debate of the water footprint: a measure of a product's water consumption over the entire supply chain. Water is becoming a scarce commodity. The water footprint is being developed with the support of UN institutions (www.waterfootprint.org).

Suiker Unie

For many years Suiker Unie has been using Unitip Online, a plot-specific registration and advice programme set up for the sugar beet industry. The programme was extended in 2009 to include information on the sustainable production of sugar beet, including the energy consumption and environmental impact of the growing process. Unitip has made it possible to prepare an environmental report on every plot since 2010. Energy consumption, CO₂ emissions and the environmental impact of the beet plots can now be compared by hectare and by tonne of sugar delivered.

Mineral cycle

Suiker Unie began to analyse its mineral cycle in 2010. Since the land is farmed very intensively, soil fertility is of paramount importance. It is also important that we reduce the quantity of minerals transported to the factory with the beet. Suiker Unie is working hard on solving these problems.

We are trying to concentrate the minerals, for example, into a manageable flow that can then be converted into a useful product for the farmer.

We must also observe applicable legislation. Laws have been introduced to prevent the wrong substances entering the cycle. Since waste products may not be spread on or introduced into the soil, balancing the cycle is sometimes difficult.

Veldleeuwerik

Suiker Unie is an active member of Veldleeuwerik, a foundation set up jointly by arable farmers, customers and the processing industry to roll out the sustainable production of arable crops in the north and southwest of the Netherlands.

Through Veldleeuwerik, customers and processors help growers achieve sustainability. The field organisations of Suiker Unie and other members are supported by specialists in soil fertility, fertilisation, crop protection, biodiversity and supply chain management. Veldleeuwerik also includes renowned institutions such as the Centre for Agriculture and Environment and the Louis Bolk Institute, which provides international advice on sustainable farming, nutrition and health care.

Sensus

Chicory is grown principally on farms in the Netherlands. Through crop rotation, these farms have often been practising sustainable agriculture for many years. Chicory is a suitable crop for rotation because it is relatively insensitive to soil-borne problems.

Since chicory is not prone to disease and pests, fewer crop protection agents are needed. Furthermore, herbicide use is low as the crop is very sensitive to chemical weed killers.



By replacing one or more spraying operations with mechanical weeding, the sensitive chicory is exposed to fewer growth retardants. Mechanical hoeing of weeds is a good solution. Sensus supports the development of precision mechanical and automated methods to control weeds.

Hoeing

In spring 2010 Haaijer, a farm contractor in Veelerveen (Groningen), introduced the Garford hoe to the Netherlands. This large machine can remove weeds in the rows. The first tests in chicory fields were carried out in May.

Jan and Noud van Gog, arable farmers and contractors in Liessel (Brabant), began weeding their chicory using GPS-steered machinery in 2010.

To support these developments, Sensus demonstrated various forms of chemical and mechanical weeding as part of the 'Farming with a Future' project.

Together with Suiker Unie and the IRS knowledge centre, Sensus has investigated the use of a modified version of the Unitip system in chicory growing. Sensus will improve the growing process further through projects such as the chicory best practice group and the Itop crop registration and evaluation programme. A third of the growers took part in the programme in 2010.

Aviko

Aviko used 2010 to analyse ways to make potato growing more sustainable. It concentrated on:

- higher yield per hectare with the same environmental impact by growing a potato that gives better processing results;
- arable farm management to offer birds a better habitat;
- a study of the introduction of new, environmentally-friendlier potato varieties.

It is aiming to introduce the improvements in the 2012 harvest year.

SVZ

To substantiate their sustainability claims, food manufacturers are reliant on the entire supply chain. SVZ helps them by linking up the strawberry chain.

Europe's largest strawberry growing region lies in Huelva, southern Spain. This region is also famous for its natural beauty. The Doñana National Park is a protected area of marshes and streams that shelters many species of birds, including flamingos. The World Wildlife Fund is also active in the park. SVZ wants to improve strawberry growing around the Doñana National Park, particularly with regard to water consumption. It has started a project that is being co-financed by two of its largest customers.

The growers and SVZ are playing a key role in the project. They are working with the University of Cordoba to coordinate and verify the results. The strawberry growers have installed equipment to measure water consumption and temperature. The university will analyse the data in 2011 to determine the optimal – more sustainable – use of water, fertilisers and crop protection agents to grow strawberries. The results will be presented at special meetings for the growers.

SVZ will encourage strawberry growers to work as sustainably as possible in the years ahead. The growers are so willing to cooperate that sustainable strawberries are in the ascendant.

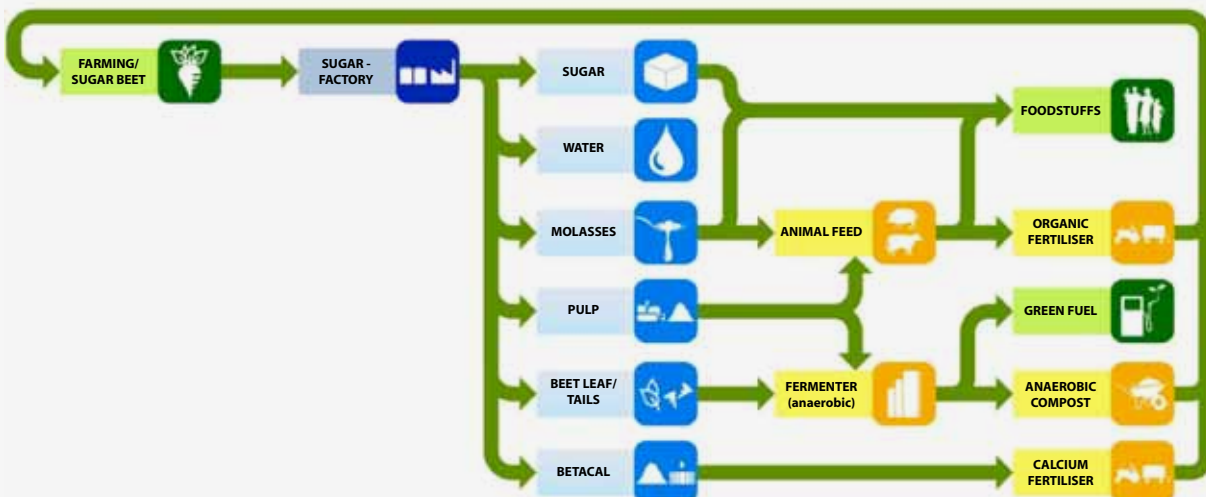
A balanced mineral cycle to solve future shortages

Cosun's principal activity is processing agricultural raw materials. In addition to water and light, plants need minerals to grow. There is a worldwide danger of certain minerals, such as phosphor, becoming scarce in the future. Naturally occurring phosphate ore is processed chemically into phosphate. Together with nitrate, this is the main component of artificial fertiliser. A great deal of energy is required to produce phosphate and nitrate, which is produced from the combustion of atmospheric nitrogen. This is not a sustainable process; balancing the mineral cycle is.

Most of the minerals attaching to the beet can be returned to the farms. In the sugar industry, this has been happening for many years in the form of Betacal and pulp. The water released during sugar production also contains many minerals. Cosun is helping to balance the mineral cycle by producing struvite and digestate. Struvite is produced with the aid of magnesium from the nitrogen and phosphate in wastewater. This process recovers two of the most important minerals. Digestate is a residue that remains when biogas is produced from organic wastes. Digestate is an organic material rich in minerals that can be used as a soil improver.

Balancing the mineral cycle is frustrated by the Fertiliser Act. Cosun will consult the authorities in 2011 to discuss how legislative and regulatory barriers can be removed so that struvite and digestate can make farming even more sustainable.

Sugar chain Production flow and mineral cycle



Climate change



Climate change is a global challenge. Although our activities have only a modest impact, we recognise our responsibility for the use of fossil energy and the emission of coolants. We ensure that no energy is wasted and no coolants escape from our facilities. These are key issues in the day-to-day operations at our factories.

Energy

We take energy to mean the use of non-renewable fuels such as natural gas and a small volume of fuel oil. We do not yet report on our electricity consumption even though it is part of the GRI. We have recorded our energy consumption in recent years but not for enough years to place changes in consumption in the proper light. We will report on electricity consumption for the first time in 2012.

Aviko

Aviko has been prioritising energy consumption for many years. It organises an annual Energy Day and considers energy consumption in its Total Productive Maintenance programme. During Energy Day, Cosun's staff and specialists present successful projects and brainstorm new initiatives together. This approach has led to many measurements. Moreover, all the consideration and the many small projects have led to a 13% cut in energy consumption since 2005.

Novidon, a member of Aviko, is a specialist in processing and upgrading starch. Starch is released when potatoes are processed into chips, crisps and the like. Novidon targeted energy savings in 2010. Apart from well-established solutions, it also introduced innovative ideas. An oil-fired boiler, for example, was made more efficient through the injection of hydrogen. Combustion is now also more complete.

Suiker Unie

Suiker Unie installed a new pulp press in Dinteloord during the year. Not only is the pulp pressed better but less water has to be evaporated, producing an energy saving of 3%. Smaller measures such as frequency converters and a new heat exchanger to purify juice have cut energy consumption by a further 1%. In total, energy consumption at Dinteloord was cut by 4% in 2010. The Roosendaal factory has replaced the sugar syrup evaporator with a more energy efficient model, cutting the site's total energy consumption by no less than 10%.

Sensus

Sensus is investigating ways to enhance the efficiency of steam production. The production process has been modelled so that Sensus can optimise energy consumption, and thus its energy efficiency, step by step. Sensus has also raised boiler efficiency by modifying the supply of air to the burner. The air supply is precisely matched to the volume of gas to be combusted. The heat loss is minimal. Nedalco used a comparable model to produce alcohol at its factory in Sas van Gent. The model has also identified many opportunities that are being investigated as to their technical and financial feasibility.



SVZ

With its enormous stocks of frozen fruit, SVZ's energy consumption is high. Since Aviko also operates substantial freezing capacity, the two business groups have joined forces to study ways to save energy. The results indicate that further savings are possible. Feasibility tests will be carried out in 2011.

Since SVZ's sales did not reach the required level and production was below full capacity, relative energy consumption was higher. As all machines had to run at 100%, energy consumption per kilogram of product was slightly higher. Nevertheless, the Etten-Leur site realised an energy saving of 5%.

To reduce the use of packaging materials, SVZ has partially switched to bulk transport. Water and energy are required, of course, to clean the tankers and containers.

SVZ has fitted an economiser to its steam boiler. The hot gases are used to heat the boiler feed water. Extra attention was paid to the use of machinery in the weekend when the factories are not in operation. Some machines, such as compressed air systems, can be turned off. Another important step is the automation of manual processes that use a lot of energy. Operators cannot work as quickly or as accurately as an automated system and are therefore not as energy efficient.

Unifine

Unifine concentrated on reducing its energy consumption in 2010. An external consultant was engaged at the factory in Manage (Belgium) to advise on energy savings. The feasibility of his proposals is being studied. The Erquinghem (France) location cut its energy consumption by 7% by fitting a new, efficient water boiler, replacing pneumatic sugar transport with mechanical transport and through better utilisation of the factory. Palmela (Portugal) reduced its energy consumption by 6% thanks to a large number of small measures.

Equipment that is not in use, for example, is switched off and the sugar milling station has been modified. Further savings will be made, as in Erquinghem, by improving sugar transport in 2011.

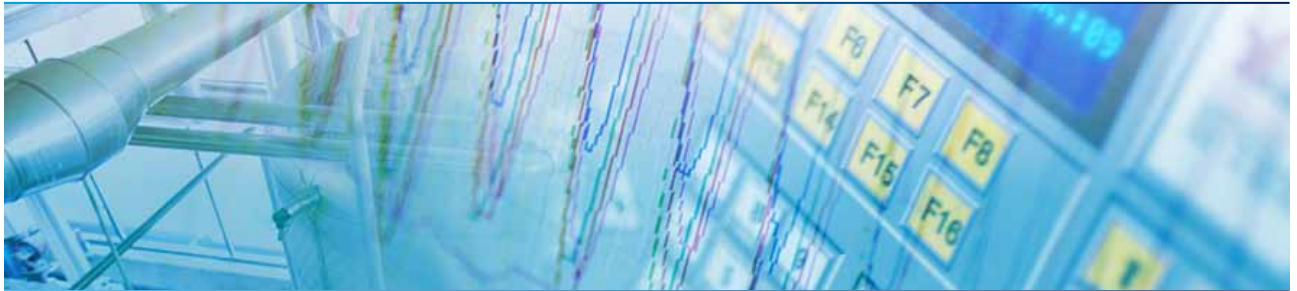
In Darmstadt (Germany), energy consumption was cut by 3% by a series of small measures, such as low-energy lighting in production halls. Darmstadt can reduce energy consumption and waste further by transporting more products in bulk. The Groningen site cut its energy use by 4%, chiefly by reducing leakages from the vacuum extractor system and by modifying its mixers. Kerepes (Hungary) reduced its energy consumption by no less than 17%, largely by aligning its production batches more accurately with each other. This dramatically cut the number of cleaning operations and led to less waste. Owing to the sharp reduction in energy consumption in recent years, the boiler house is now too large relative to production. A new boiler would save even more energy. The purchase cost, however, would be disproportionately high relative to the savings. Kerepes is studying whether the project would be feasible with public funding.

Greenhouse gases

Both the government and the European Union have developed measures to reduce the emission of greenhouse gases by large energy consumers. By using energy, Cosun produces the greenhouse gas CO₂. The Cosun business groups also operate many cooling plants that use freons, refrigerants that are 'super' greenhouse gases.

Emissions trade

To rein in the unbridled use of fossil energy, the European Union introduced a trading system for CO₂ emission rights. The maximum emission of this greenhouse gas has since been capped. Businesses that emit less CO₂ can sell their surplus emission rights in the market and thus earn money by making their production processes cleaner and more efficient.



A new but lower emission ceiling will be introduced for the period 2013-2020. It is still being negotiated within the EU. Cosun was party to the talks on the rules for CO₂ emissions trading in the new period. In comparison with companies in the steel, chemical and refinery industries, Cosun is a minor player. It therefore supports the interests of the 'small business' in both the VNO/NCW employer's organisation, the CEFS (European sugar manufacturers) and CIAA (European food industry organisation).

Every country is granted a number of rights and allocates some of them to industry and must auction the rest. The auction proceeds benefit the public purse. It has been agreed that the rich countries will transfer some of the proceeds to the poorer countries in the EU. On behalf of industry, VNO/NCW heads the consultations with the government. Both sides seek an appropriate and workable emissions trading system. It is important that the system does not create significant competitive differences.

Thanks in part to Cosun's contribution, improvements have been made to the trading system, the main one being the calculation of historical energy consumption. The EU bases the free rights on historical energy consumption per production site in 2005-2009. Since 2006, however, the EU has encouraged the sugar industry to close factories. Total CO₂ emissions have accordingly declined but the capacity of the remaining sugar factories has increased, as has the CO₂ emission per factory. It is therefore unrealistic to use the years up to 2008 as reference years for these factories. Following talks, 2009 and 2010 may now also be used as reference years.

Refrigeration installations

Refrigeration installations are closely monitored. A logbook is kept of all the work carried out on them and the quantity of refrigerants added. This has not yet led to a clear link being made with greenhouse gases.

We intend to report on the loss of refrigerants as a source of greenhouse gas emissions in 2011.

We have been taking measures against R12 and R22 refrigerants for some time. These super greenhouse gases deplete the ozone layer. R12 is up to 10,000 times stronger than CO₂. Governments have reached international agreement to forbid the sale of R12 and R22 (freons). These refrigerants may no longer be sold as new products as from 2010 and may no longer be added to refrigeration systems as from 2015. To phase out the use of R12 and R22, Cosun has determined how many of these systems its businesses have. There are just under 200. Many of them are very small systems that never leak and therefore require no attention. The business groups are drawing up a replacement schedule for all systems.

Refrigeration

Aviko Steenderen has started to convert all industrial freon-based cooling systems into ammonia-based systems. Ammonia is more environmentally friendly than freon. Ammonia-based refrigeration also requires less energy.

Goods vehicles

Aviko uses heavy goods vehicles to transport frozen chips. The freezer system is powered by the vehicle's engine. The engines are sources of noise pollution, especially when they are idling. Aviko has tested two vehicles fitted with a cooling system based on liquid CO₂. This has eliminated the noise pollution. Furthermore, the CO₂ emission is lower because the engines no longer need to be kept running.



Sustainable energy

At its Proven location in Belgium, Aviko carried out an extensive study of the biogas obtained from water purification. Proven will make better use of this biogas by turning it into both heat and electricity. A modification of the water purification system, moreover, has increased the volume of recoverable biogas. In 2009-2010, Rixona, a member of Aviko, studied the gasification of chicken manure. Investments in the process are still unprofitable as there are no guarantees on the supply and price of the manure. The study did reveal opportunities to incinerate scrap wood. Together with Cofely, a specialist in sustainable technology, Rixona is studying the generation of sustainable energy from scrap wood as a long-term option. Large volumes of scrap wood are available from the demolition of buildings and from municipal waste depots. It is not our intention to incinerate preserved wood, which is so contaminated that it requires highly specialised incinerators.

Suiker Unie started to build a fermentation plant in 2010 to convert organic material into biogas. Suiker Unie has the ambition of becoming an important producer of renewable gas.

Sensus converts some of the organic matter obtained from its water purification operations into methane. It replaces natural gas used in its boiler so that less fossil CO₂ is released into the atmosphere. This biogas contains sulphur, however. Sensus is studying ways to reduce the sulphur content of the biogas.

Water use



Water is becoming scarce. Water savings are therefore an important social challenge. For food safety reasons, our businesses are obliged to use copious amounts of water, for example for cleaning. Water that comes into contact with the products must be of drinking water quality. Opportunities to cut water consumption are therefore limited. Reuse is also far from simple. Nevertheless, each of Cosun's business groups is seeking ways to use water more efficiently.

Aviko

As part of its TPM programme, Aviko has introduced a 'dry floor' project at its factories. In the past, spillages were washed away with water. Now they are swept up. This saves a lot of water.

Duynie's location in Veurne (Belgium) focused in 2010 on reducing the contaminants in its wastewater. It has paid close attention to losses in the factory and with the aid of its own research organisation has improved the performance of water purification. Its ultimate ambition is to balance the water cycle. The location is already reusing all the industrial wastewater. This is possible because Duynie produces technical starch at this location. This is not a foodstuff. By radically reducing the environmental impact of its wastewater Duynie can expand within the limits of its environmental permit in the future. Duynie's location in Nijmegen has also improved its wastewater system. The risk of disruptions has since fallen.

Suiker Unie

Suiker Unie's sugar factories accept more water with the sugar beet than they need. This makes Suiker Unie a net water producer. It intends to supply water to the large-scale greenhouse complex that will be built next to the Dinteloord factory. A study was started in 2010 to determine whether the factory can supply water of sufficient quality for the plants at an acceptable price.

Sensus

Sensus needs water of drinking water quality. It meets part of its requirements from groundwater. In accordance with the European water framework directive, it is entitled to protection for its groundwater extraction. The province is studying how it can fulfil this obligation. It is seeking a delicate balance between the optimal protection of Sensus and acceptable restrictions on local businesses and residents. Completion of the study is expected in 2011. When it applied for a new permit in 2009 Sensus carried out an extensive study of how it can save water. No new savings opportunities were identified in 2010.

SVZ

The water purification system at the Etten-Leur location did not function correctly in 2010. The system was therefore shut down, cleaned, checked for defects and taken back into service. It now functions correctly. The use of TPM prevents losses and lowers water pollution. If the pollution is reduced further, a point will be reached at which it is no longer feasible for SVZ to purify the water itself. SVZ would then be better advised to offer it to the water board.

Following a major incident at a neighbouring company, toluene flowed through the municipal sewer into SVZ's sewer. The incident was reported to the authorities. Together with the Etten-Leur environmental agency, a serious environmental incident was averted. The environmental agency is still investigating how toluene could escape from the municipal sewer into SVZ's sewer.



A study of SVZ's cooling towers has led to significant savings. The cooling is produced through water evaporation, with calcium and salts building up in the water. By refining the dosage and control system for the chemicals for the cooling water treatment, a higher concentration of the cooling water can be achieved. Less drainage is needed to remove the salts and less water and water-borne chemicals are supplied to the cooling towers. Furthermore, improved operations management means the cooling towers are in use for fewer hours and require less energy.

Nedalco

Cosun Food Technology Centre and Nedalco together studied water savings at the factory in Manchester. They found that purified wastewater could replace a large proportion of the cooling tower suppletion.

This is already producing a substantial saving on water. A study is currently being carried out of whether more suppletion water can be replaced.

Unifine

Unifine Manage has problems complying with its wastewater permit. The company therefore started to replace 1 m³ stainless steel containers with special tanks with loose inner linings in 2010. The tanks are lighter, do not need to be cleaned with a lot of steam and water and are easier to empty. They therefore prevent water wastage. By dealing better with failed production runs, wastewater pollution has fallen markedly. Further measures to reduce pollution are planned for 2011.

TPM good for the environment



The TPM improvement programme pays full attention to the environment. To this end a Safety, Health, Welfare and Environment pillar has been set up.

TPM identifies losses, for example of water and waste products. TPM improves residual flows, leakages, cleaning times, etc. By identifying and naming losses, improvement measures can be taken. Operators can reduce the cleaning times, for example, through 'autonomous maintenance'. Another example of how the environment can be improved is the resolution of problems.

Kaizens (Japanese for 'continuous improvements') are used to tackle structural problems.

A good example can be seen at Aviko Cuijk. An improvement team has reduced the time needed to peel a potato from 72 to 42 seconds. As a result, the Cuijk plant uses less steam and has cut its annual costs by € 56,000.

The environment in figures

This part presents the Cosun business groups' environmental performance in 2006-2010 in accordance with the GRI guidelines, with the exception of the subjects soil and complaints. These are not part of the GRI but are considered here with a view to sustainability. Emphasis lies on the main environmental aspects: waste, energy and water.

For comparative purposes, the figures have been restated with retroactive effect. Businesses that no longer form part of Cosun have been eliminated from the multiyear comparisons and businesses that have joined Cosun are extrapolated backwards over the entire presentation period. To give an example, the sugar factory in Anklam joined Cosun in mid-2009. Its emissions in 2010 have also been used for the years 2006 to 2009. This standardisation produces a realistic view of the performance of the companies in the presentation. A disadvantage is that the figures in this annual report for 2009 and previous years no longer reflect the actual emissions. They are presented in earlier environmental reports.

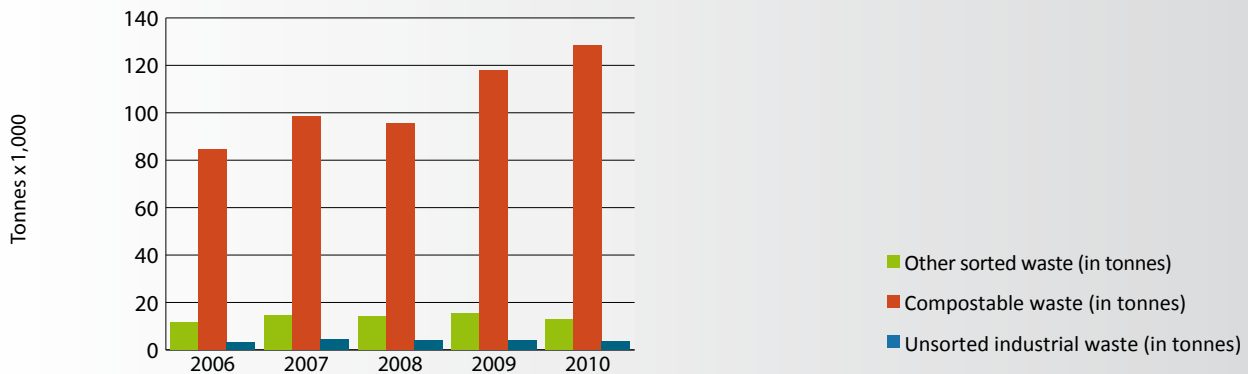
Waste

Cosun takes waste to mean everything at Cosun that no longer has a useful purpose and must be disposed of. This is what is popularly understood to be waste. Cosun's definition of waste therefore does not agree with the definition used in the Waste Act. Under the Act, products that are socially very desirable and that can be put to good use are also defined as waste.

Like every household, we produce sorted and unsorted waste, only we sort it into different categories. Apart from paper and glass, we also separate plastic, wood, metals, compostable waste and hazardous waste.

Compostable waste comprises by far the greater part of the separated waste.

Quantity of waste



The quantity of compostable waste is growing steadily, especially at SVZ and Suiker Unie. SVZ started to make carrot juice in 2009. The fibres that are produced can be composted. At Suiker Unie the ever-stricter quality demands are increasing the volume of beet material such as beet tails that can be composted. This compostable waste, however, accounts for only 1.5% of all the organic material we purchase. Nevertheless, we will continue to minimise waste wherever possible.

Most of the organic waste is transported to a composting business. Since it is also suitable for fermenting, it is better to turn it into biogas. Half of Cosun's compostable waste comes from Suiker Unie. In the future, this flow will increasingly be used to produce our own biogas and we will no longer categorise it as waste. This will be seen in the figures as a further reduction in compostable waste as from 2011.

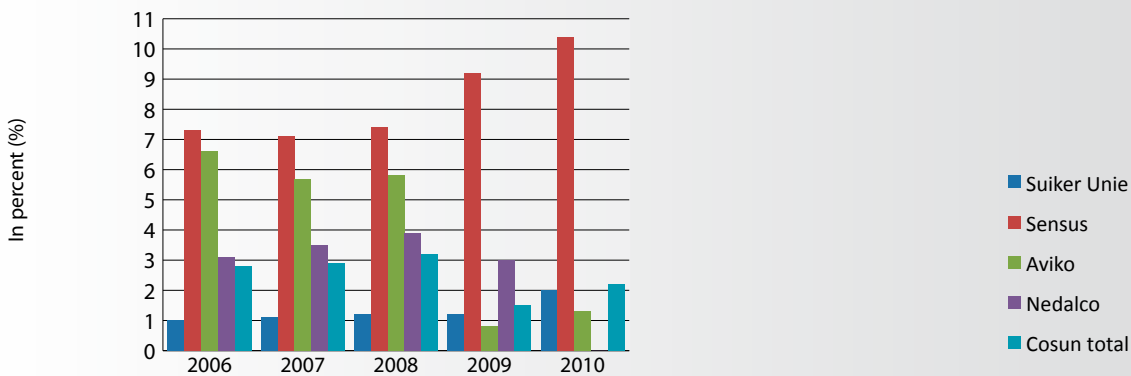
Energy

Biogas

Natural gas originates in layers deep in the earth through the degradation of biomass. Breaking biomass down in tanks using bacteria in oxygen-free conditions also produces a form of natural gas. This gas is known as biogas. Biogas differs from natural gas in that it has a slightly lower heat of combustion and does not contribute to global warming. Residual flows from our production processes that are not suitable for foodstuffs or animal feed can be used to make biogas. Cosun's policy is to make more use of these residues to produce biogas.

Sensus uses a remarkably high proportion of biogas. Sensus is pursuing a deliberate policy of producing as much biogas as possible. The proportion of biogas has increased in recent years owing to improvements in the operation of the water purification system and the processing of sugar-rich wastewater from Suiker Unie Roosendaal. Suiker Unie is making more intensive use of the organic matter in washing water and its use of biogas is increasing accordingly.

Proportion of biogas in CO₂ emissions



The figure above shows the percentage of fuel that has been replaced with biogas. For comparative purposes, we have expressed all fuels by their CO₂ emission per energy content.

Nedalco ceased production in Bergen op Zoom in 2010. The water purification system was dismantled and Nedalco has since produced no more biogas. Nedalco now no longer purifies its own wastewater. Treatment has been outsourced to an external party.

Nevertheless, the Cosun business groups are producing increasingly more biogas. Following a dip in 2009 owing to the outsourcing of Aviko's water purification, whereby the biogas was no longer used in its own production processes, technical adaptations have been made to pipe the gas back to the factory. The use of biogas will therefore increase again.

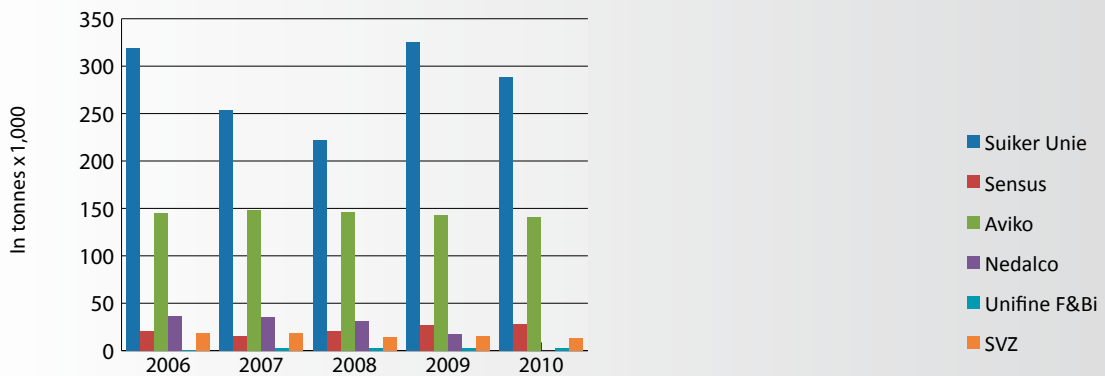
Suiker Unie is preparing to build a large fermenter that will produce a substantial volume of biogas. In the future the gas will be upgraded to natural gas quality for the national transmission network. This will significantly increase the production of sustainable gas. The anaerobic breakdown of water pollution during purification also produces biogas. This biogas is usually added directly to natural gas in the boiler. Suiker Unie will also upgrade this gas to natural gas quality and supply it to the public natural gas network.

CO₂ fossil

Part one of this report describes the efforts being made to save energy. They are related directly to the emission of CO₂. The measures taken to cut energy consumption still enjoy highest priority. On the one hand, this is due to the commitments we have entered into under the MYA (-2% per annum) and on the other to ever-higher fuel prices and the pricing mechanism in the CO₂ emissions trading system.

KEMA is currently studying the boiler efficiency of our largest energy consumers. This and the increase in energy costs justify our expectation that CO₂ production per tonne of product will decline. Separately from the business groups' direct CO₂ emissions, Suiker Unie and Sensus are investigating the CO₂ footprint of their products. Since the footprint affects the entire chain, areas where the greatest improvements can be made have the highest priority. The study will be completed in 2011.

CO₂ emission



The fall in Nedalco's CO₂ emission in 2010 is due to the company purchasing all its energy requirement from a third party.

A problem with the interpretation of these emissions is that production has a greater influence than savings. A 10% increase or decrease in production will trigger a comparable percentage change in emissions.

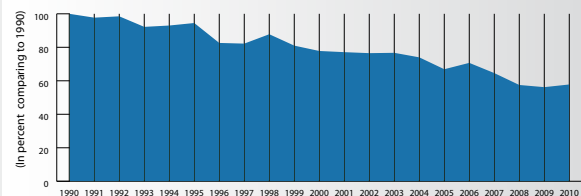
This is most pronounced at Suiker Unie because it processes the entire sugar beet harvest in the Netherlands. A saving of 1% or 2% is therefore negligible even though the business has to go to great lengths to achieve it. This is the case at all our business groups with the exception of Nedalco.

Reduction in energy consumption at Suiker Unie as from 1990

Suiker Unie has been working on reducing its energy consumption for many years. The figure below shows the energy consumed to produce sugar during the past 20 years. Consumption in MJ/tonne of sugar in 1990 has been indexed at 100. The fluctuations are due to changes in the volume and quality of the beet harvest. In 2010, for example, the low sugar content of the beet on account of the weather increased energy consumption by 3%.

There has been a considerable energy saving since 1990: minus 43%. This is comfortably within the European target of 1.7% per annum.

Energy consumption for the production of sugar



NO_x

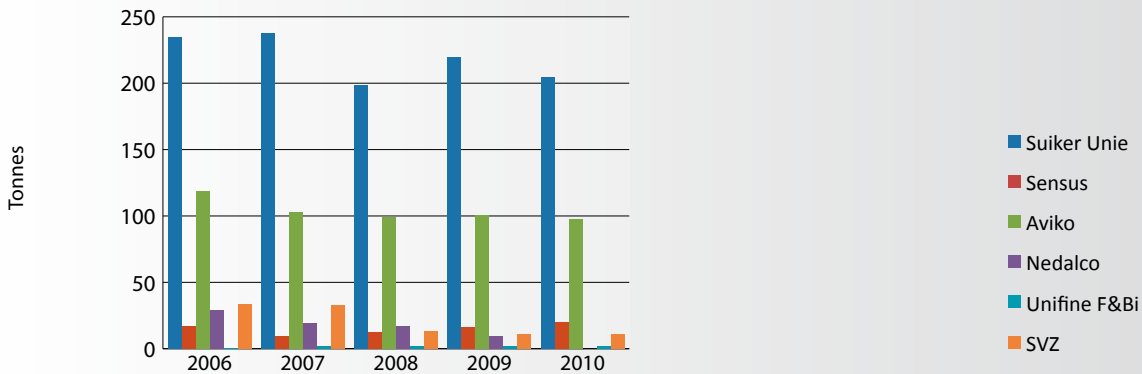
The combustion of natural gas heats atmospheric nitrogen to temperatures of above 900°C. At these temperatures nitrogen and oxygen combine to form NO_x. Regulating the combustion conditions can influence the production of NO_x. The production of NO_x is therefore linked to the production of CO₂. As well as the temperature, the composition of the fuel is also important. Fuel oil and biomass contain natural nitrogen components. This nitrogen also combines with oxygen to form NO_x.

In the past, SVZ considerably reduced its emission of NO_x by replacing fuel oil with natural gas. This is now no longer possible. Where fuel oil is still used, it cannot be replaced with natural gas.

Whenever work is carried out on the oil-powered boilers, however, opportunities to reduce NO_x emissions will be investigated.

The closure of Nedalco's facility in Bergen op Zoom is reflected in the figures. Since all its other locations purchase their energy from third parties, Nedalco was not responsible for direct emissions in 2010.

NO_x emissions

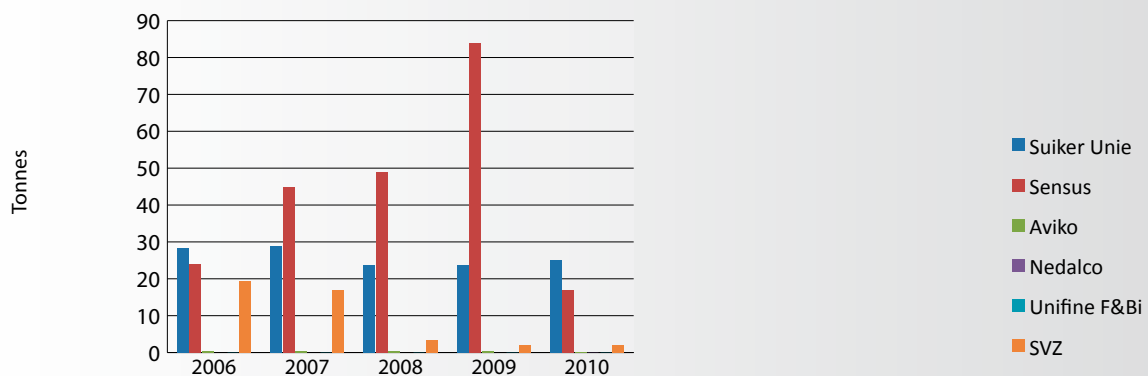


SO₂

SO₂ is created through the combustion of sulphur present in fuel.

High sulphur fuels include oil, heavy fuel oil and – depending on the wastewater – biogas.

SO₂ emissions



Sensus uses sulphurous processing aids in its production processes. Together with the sulphur released from chicory roots, they produce high sulphur wastewater. In the production of biogas, the sulphur is converted and combusted into SO₂. Since Sensus is using more and more biogas, SO₂ emissions should be increasing. Last year, however, we saw a definite decline. This is because estimates were used in previous years. It had been estimated that SO₂ emissions had increased to 84 tonnes in 2009.

Last year Sensus measured the quantity of SO₂ in the boiler's flue gas. The results indicate that the actual emission is far lower than previously assumed. Nevertheless, Sensus decided to explore ways to reduce its SO₂ emission even further.

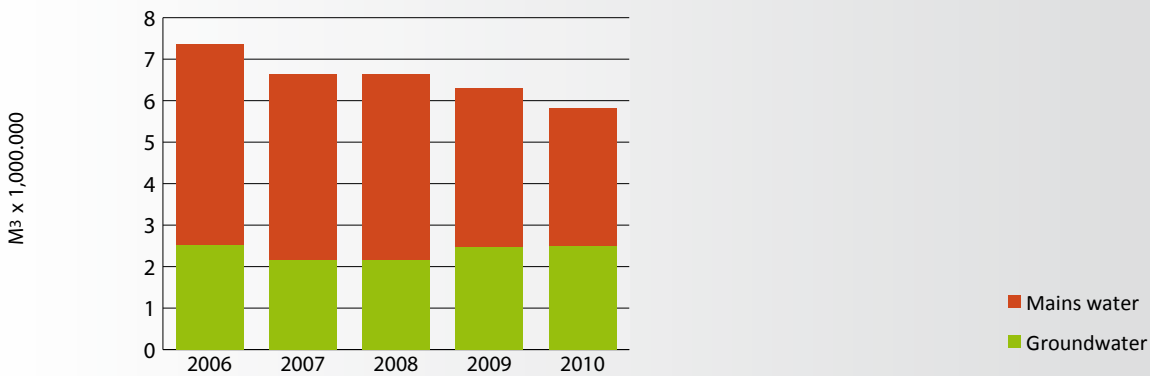
SVZ saw a reduction in its SO₂ emission owing to a lower sulphur content in its fuel. The sulphur content had been lowered to 0.2% in 2008 and is now 0.1%. Energy consumption was also lower.

Water

Across the board, the Cosun business groups used less water. The figure below shows the aggregated volumes. The reuse of water is a difficult issue owing to potential presence of pollutants. With a view to food safety and quality, the factories are having to purify more water.

In this light, further reductions in water consumption are an increasingly difficult challenge. For Cosun, food safety takes precedence over water consumption.

Royal Cosun water consumption



Cosun uses both groundwater and mains water. It opts for groundwater if it is of good quality and available in sufficient quantities. Its extraction, moreover, must not harm the environment. In principle, this water is put to high quality use. High quality use is use where mains water quality is desirable. Not using mains water has both a financial reason, mains water is more expensive, and an environmental reason.

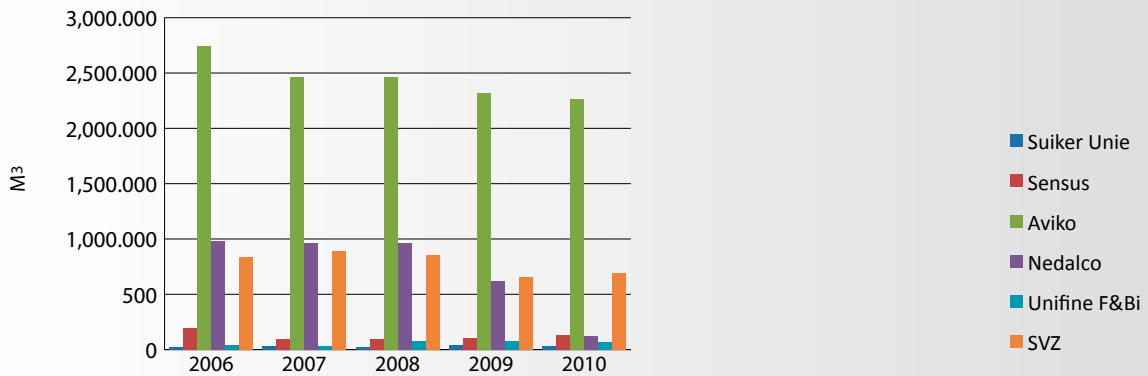
Our factories are located in built-up areas. The impact of extracting water on nature in such areas is far less than in more rural areas. Furthermore, we do not need energy to pump water over long distances to the factories.

Groundwater

Sensus has seen an increase in its consumption. This is a consequence of higher production. Aviko pays a great deal of attention to water consumption. This has led to a sharp decline. Nedalco's lower consumption is due entirely to the closure of the factory in Bergen op Zoom. SVZ launched a water programme in Etten-Leur in 2009 that

continued in 2010. The result has been a further decline in water consumption by nearly 5% in 2010. This cannot be seen in the figures because of the far larger production in Poland. We intend to launch a water saving programme in Poland, too.

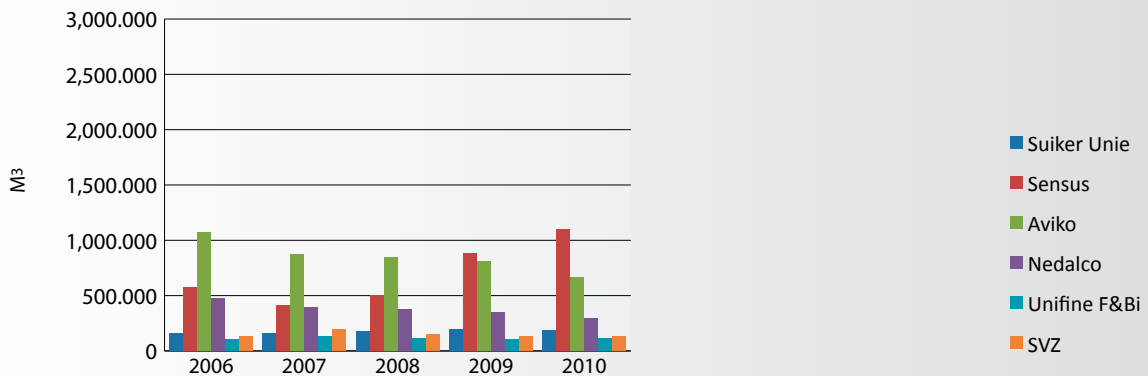
Groundwater consumption



Mains water

Sensus used significantly more mains water owing to an increase in production. At the other business groups, changes in mains water consumption were due to the same reasons as for groundwater.

Mains water consumption



Eutrophication

We understand eutrophication to mean the addition of substances into water that promote the growth of algae. Algae can separate poisonous substances (blue-green algae). If they die and rot, however, they can also cause the death of fish. Algae also reduce sunlight levels, which results in the disappearance of plants and animal life. This in turn changes the habitat. Some species flourish and others disappear. Algae can also be detrimental for the production of drinking water from surface waters. The government therefore began to take measures to combat the eutrophication of wastewater as early as the 1970s. One of the most important measures was to forbid phosphates in detergents. Organic materials and nitrogen are also important elements that can disrupt aquatic life.

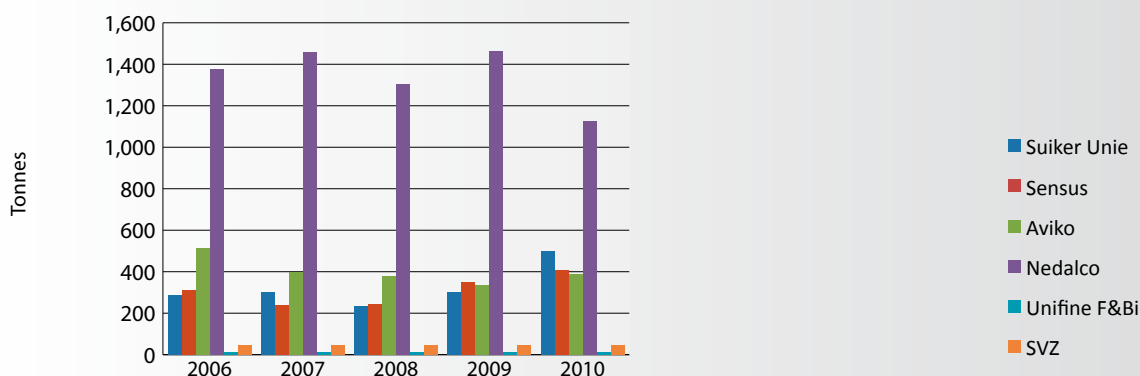
The eutrophication of wastewater is measured by three components: the chemical oxygen demand (COD), the volume of nitrogen and the volume of phosphate in the wastewater.

COD

COD is a measure of the quantity of organic waste in wastewater. Wastewater is usually discharged into the municipal sewer system. In a number of cases, it undergoes an initial treatment process in which biogas can be obtained. Final purification takes place at municipal wastewater treatment plants.

The purified water is then discharged into surface waters. There is no impact on the environment, only a cost to the business discharging the wastewater. In a number of cases Cosun carries out all the purification and discharges the water directly into surface waters.

COD



At Suiker Unie, COD has increased. The main explanation for this is that purification suffered from an exceptionally long cold spell last winter. As in a fridge, the bacteria that purify the water are less active at low temperatures. The pollutants were therefore not broken down as efficiently as usual.

The increase in Sensus's discharge is related to the further increase in the volume of chicory roots it processed. In comparison with previous years, the discharge per tonne of processed roots was little changed.

Potatoes were of poor quality last year and were difficult for Aviko to slice into chips.

Far more cells were broken during slicing and the cell contents, starch and proteins, entered the slicing water. The starch is recovered from the slicing water but proteins remain in the wastewater. Contamination of the wastewater was therefore higher.

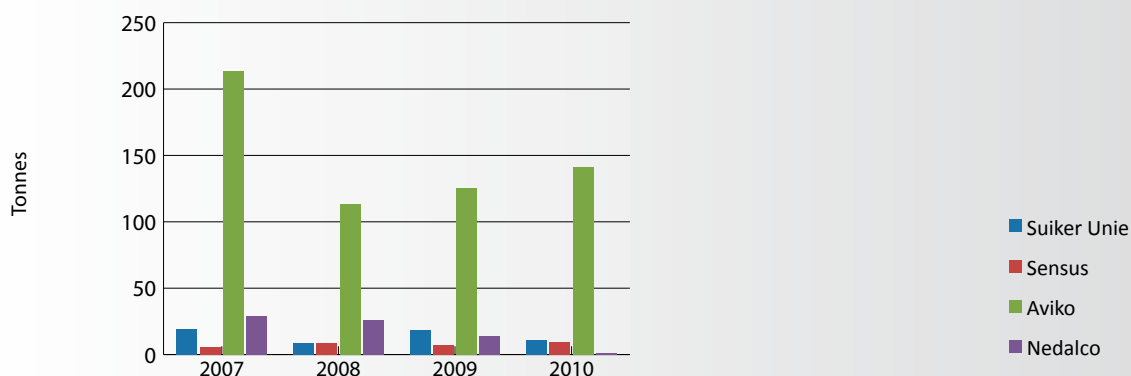
The closure of Nedalco's factory in Bergen op Zoom led to a reduction in COD. There were several minor cases of pollution, however, on account of various activities. These were discharged untreated into the municipal sewer system. Further improvements in the production process reduced the discharges at the factories in Manchester and Sas van Gent.

Nitrogen

Nitrogen is measured by means of the Kjeldahl method (Nkj). Kjeldahl nitrogen is a measure of both the oxygen consuming capacity and the eutrophication of water. Together

with phosphate, nitrogen is a key factor in algae blooms that ultimately deplete dissolved oxygen in the water.

Kjeldahl nitrogen



The Nkj discharge at Suiker Unie in Dinteloord increased because a modification of the water purification system did not function optimally. The discharge remained within permitted levels, however, and thus within the capacity of the receiving water. The system is now working optimally, as reflected in a decline in the discharge.

At Sensus, higher production led to a higher discharge.

The reason for the increase at Aviko is not yet clear. It is known that the factory in Lomm is involved. There might be a link with the quality of the potato raw material. Aviko is studying the situation further.

At Nedalco, the closure of the factory in Bergen op Zoom meant production was based entirely on residual grain flows. In comparison with molasses, these carbohydrates contain little nitrogen.

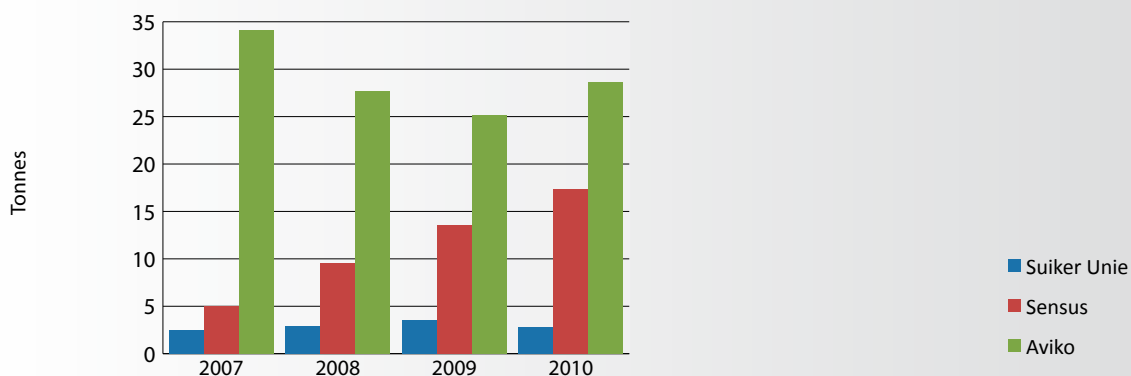
Phosphate

Phosphate also contributes to eutrophication and thus to algae growth. Phosphate is often removed from wastewater chemically using iron chloride. This popular and reliable method leads to a reasonably fixed final concentration in the wastewater. The phosphate discharge therefore varies according to the quantity of water. Another way to dephosphate wastewater is to precipitate phosphate with magnesium and nitrogen to form struvite, which can be used to make fertiliser. Struvite production at Aviko Steenderen has performed well in the recent past.

A number of barriers must still be overcome before struvite sales reach an adequate level. Struvite is a slow working fertiliser and there is a demand for it from municipal parks and tree nurseries. It also balances the mineral cycle. As is often the case with innovations, legislation – in this case the Waste Act and the Fertiliser Act – does not yet permit its broader application.

Cosun is currently trying to remove this legislative barrier. A study is being carried out in respect of the Fertiliser Act and talks are being held with the ministry about the Waste Act.

Phosphate discharge



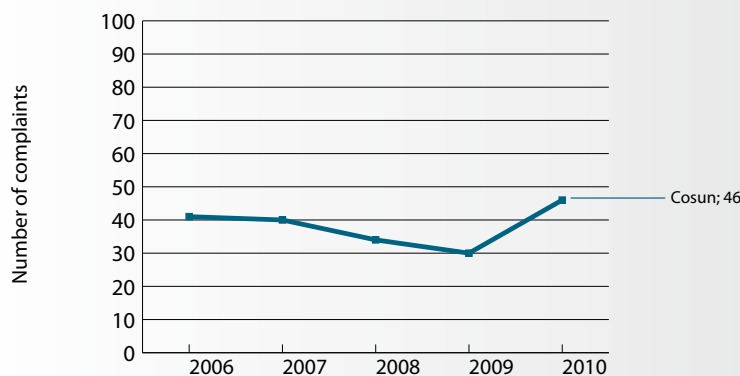
Soil

There are no exceptional cases of soil pollution to report apart from a leak at a neighbouring business of Unifine in Groningen. The pollution was limited to several litres of diesel oil. The oil that leaked onto our site is being cleaned up. In Gelderland there was some confusion about the soil attaching to the potatoes delivered to the factory. Potatoes that are stored in the Netherlands for a longer period of time are treated with chloroprotham, a potato sprout inhibitor. This agent is permitted in Europe and has been extensively tested for human and environmental safety. The soil attaching to the potatoes not surprisingly contains traces of this product. Soil standards have been set in the Netherlands but chloroprotham is not listed among the substances that may be present in the soil. Classification of the soil as polluted therefore depends on the local authority's interpretation of the rules. Since chloroprotham is an admitted product, there

has never been a problem in this area.

The province of Gelderland, however, thought that soil with traces of the sprout inhibitor did not satisfy the statutory standards. As a result, there was no longer a channel to dispose of the soil. Furthermore, there was no longer enough space to store it. The problem was put to the national government. Thanks to a temporary amendment of the Soil Quality Regulation, tare soil with residues of sprout inhibitor can be stored and sold again as from mid-2011. In consultation with the Ministry of Infrastructure and the Environment, the degradability of the sprout inhibitor is being studied. The results will help determine how the standard can be amended. This amendment will eliminate the objection to the sale of tare soil and it will again be possible to balance the cycle by returning the soil to the fields or applying it in another way.

Total number of complaints, Cosun-wide



Complaints

Cosun's business groups keep nuisances to local residents to a minimum. Nuisance includes noise, odour and light pollution and traffic congestion.

All complaints are registered, with no distinction being made between justified complaints and complaints for which we cannot find a cause. We even take complaints that Cosun could not have caused seriously. The target is zero complaints.

In 2010 Aviko (24), Suiker Unie (21) and Unifine (1) received a total of 46 complaints. Suiker Unie received more complaints than in previous years, largely relating to odour nuisance at the location in Roosendaal that were difficult to trace.

Suiker Unie investigated all relevant sources and we trust the problem has been resolved.

Aviko is applying for a new permit for its location at Cuijk. Local residents are therefore more sensitive and alert to nuisances. The source of a number of complaints could not be identified. Several complaints were also made about the location in Sweden.

The complaint made to Unifine related to the location in Portugal.