Corporate Responsibility Report 2011
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Foreword to Essent’s 2011 CR Report

For Essent, 2011 was a year in which we made significant progress, despite the economic difficulties. That is certainly true of our CR policy, as this report hopefully shows. In my eyes, this confirms that difficult times bring the best companies to the fore: new challenges create new opportunities.

Responsible in society
Essent is an energy company with its feet firmly in society. From our earliest beginnings, Corporate Responsibility has been part of our company’s policy. We are closely involved in a range of different themes that currently concern society, for example sustainable methods of generating energy, supply chain responsibility, affordable energy, and the health and safety of our employees and external workers. We have defined concrete goals for all those themes, which we assess and monitor annually. We did this for the first time in 2011, and the results reveal that we are making good progress in many areas. Some issues show room for improvement.

Reliable, affordable and sustainable
The European energy market is changing. Just as the rest of the sector, Essent has to deal with diminishing margins caused by the economic developments. Our parent company also faces the planned closure of Germany’s nuclear power stations. Despite the fact that these trends mean that limited funds are available for investment, in 2011 we laid the groundwork that will help us realise our ambitions.

A vital element in our activities is still the balance between the three foundations of generating and supplying energy: our customers need to be able to rely on the fact that we will supply electricity, gas and heat at all times; that we will do so for prices that our customers are willing to pay; and that we also invest in a renewable energy supply for the more distant future.

Sustainable innovations
We once more confirmed our leading position in the field of renewable energy sources such as biomass in 2011. For example, the 100% biomass-fired power station in Cuijk became
operational once more, as a testing ground for realising a biobased economy. Minister Verhagen awarded a Green Deal to that innovative project in 2011. For our customers, we achieved impressive results with a series of pilot projects for energy management. One of the results was the introduction of My-E (Mijn-E), a new and innovative product line that Essent has launched to help customers save energy and to anticipate the future of energy usage.

These kinds of sustainable innovations can only be realised by actively talking to our stakeholders. The formation of the CR Council – Essent’s independent advisory council – gives more concrete shape to that dialogue. For example, the Council advised us on a number of elements of our CR policy in 2011.

These remarkable results justify my faith in the engagement and expertise of our Essent workforce. The emphasis in recent years was heavily on efficient teamwork within the company. We also actively sought out partnerships with external stakeholders: our doors are open. This gives us the foundations to continue to seek a proper balance during the coming years between our interests and those of the society of which we are part.

’s-Hertogenbosch, the Netherlands
2 April 2012

Erwin van Laethem
CEO, Essent N.V.
1. Essent’s profile

Essent N.V. is the largest energy company in the Netherlands. We are also the largest Dutch producer of renewable energy. Essent supplies electricity, gas, heat and energy services to consumers, small businesses and large enterprises in the Netherlands and Belgium.

We produce much of that energy ourselves. Besides supplying electricity, gas and heat, Essent’s activities also include finding local energy solutions, providing inspection services and advising on energy saving. Our head office is located in ’s-Hertogenbosch.

1.1 Key figures

Every year we draw up a summary of our most important figures. What were the key figures in 2011?

Installed capacity
- Production capacity: 4,048 MW
- Of which 557 MW used for sustainable production

Customers
- 2.3 million electricity customers
- Of whom 1.1 million registered as customers of green electricity (Groene Stroom), green electricity for commercial customers (Groen Zakelijk) and wind power (Windkracht 220)
- 2 million gas customers

Workforce
- Essent employs around 4,068 people.

1.2 Essent and climate change

As one of the largest energy companies in the Netherlands, we are also responsible for emitting large quantities of greenhouse gases, mainly CO₂. It is our aim to systematically reduce those emissions. In 2009 Essent, with many other European energy companies, signed the Eurelectric Statement, which states that those energy companies will dedicate themselves to achieving a CO₂-neutral energy supply by 2050. Essent is making various investments to realise this, including in more efficient energy systems and in the production of more green electricity using wind and biomass. In our CR Dashboard on page 25 more information can be found about our targets related to these areas of attention.
1.3 Administrative organisation

The Executive Board manages Essent and defines Essent’s strategy and targets. Essent conducts its activities within the framework of that strategy and those targets. On 1 January 2012, the Executive Board had three members.

Besides defining strategy and targets, the Executive Board is responsible for defining and monitoring general policies for:

- Finances
- Commercial matters
- Human resources
- Legal affairs
- Communications
- Investments
- Technology and the environment

The Executive Board is also responsible for contacts with stakeholders.

Executive Board

Essent’s Executive Board reports directly to the Executive Board of RWE and is accountable to Essent’s Supervisory Board. Essent’s Executive Board has three members:

- Erwin van Laethem: Chief Executive Officer
- Arjan Blok: Chief Financial Officer
- Nina Skorupska: Chief Technological Officer

Supervisory Board

The Supervisory Board supervises Essent’s policies and their implementation. The Supervisory Board has five members:

- Rein Willems: Chairman, former President and CEO of Shell Nederland B.V.
- Rolf Pohlig: Chief Financial Officer of RWE AG
- Rolf Martin Schmitz: Chief Operational Officer of RWE AG
- Filip Thon: Chief Executive Officer of RWE Poland and Managing Director of RWE East
- Eric van Amerongen: appointed at the nomination of Essent’s central works council

Organisational diagram

Essent’s organisation is shaped around two clusters: the commercial cluster and the technology cluster. Staff Services is made up of the various support departments at the head office. This is shown in the organisation diagram below.

<table>
<thead>
<tr>
<th>Staff services</th>
<th>Commercial cluster</th>
<th>Technology cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR</td>
<td>Marketing</td>
<td>Business Development</td>
</tr>
<tr>
<td>IT</td>
<td>Sales portfolio management</td>
<td>Production</td>
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<td>Essent Service</td>
<td>Business-to-business</td>
<td>New Energy</td>
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<td>Overigen</td>
<td>Business-to-consumer</td>
<td>SME</td>
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<tr>
<td></td>
<td>Essent Local Energy Solutions</td>
<td>Essent Belgium</td>
</tr>
</tbody>
</table>

1.4 Mission, ambition and goals

Essent operates in an ever-changing environment. How does this impact our mission, ambition and goals?

Customers are critical. They place high demands on the company and on Essent’s products and services. Essent also has to operate in a rapidly changing environment. These changes stem firstly
from political and economic developments. For example, the adverse economic conditions are putting pressure on margins and limit the funds that Essent has available for investments. Climate change is also increasingly the focus of people’s attention. Secondly, we are facing changing factors in the energy market: it is becoming more and more a European market, competition is fiercer and technological developments are following one another at a rapid pace. All these changes present major challenges for Essent: challenges that we willingly face and for which we define solid goals.

**Mission**
Essent is a market leader because of our energy.

**Ambition**
To become the best-performing energy company.

**Goals**
To become the best-performing energy company, Essent has set itself ambitious goals in terms of customers, technology, sustainability and organisation. See the CR Dashboard chapter on page 25 for more about those goals.

1.5 **Core values**
How we go about realising our mission, ambition and goals is expressed in our four core values: delivering, inventive, sympathetic and transparent.

**Delivering**
Essent does what its promises; our customers can rely on that. If we start on something, we see it through. To do so, we make choices. We turn good ideas into concrete actions. We work together to achieve our ambitious goals and remain focused on the results that we need to produce. And we hold each other accountable for the performance of actions.

**Inventive**
Combining know-how in smart and creative ways: that is what we do at Essent. We work together to find simple, useful and efficient solutions. We are not afraid to experiment and we express our views on proposed improvements and solutions in a critical and constructive manner.

**Sympathetic**
Showing a sincere interest in and listening to one another, our customers and our surroundings: this is central to Essent. We make good on Essent’s promises while respecting each party’s individual expertise, opinion and background. We are driven by the desire to produce results together without seeking to become the focal point. In a sympathetic way we take the initiative in our work and in our relationships with our stakeholders.

**Transparent**
Essent provides clear-cut products and services. That is something on which our customers, stakeholders and employees can count. We are also clear and avoid complexity in our communications and in our dealings towards each other. Our customers, stakeholders and employees know exactly what to expect.

1.6 **About RWE**
On 30 September 2009, Essent became a wholly owned subsidiary of RWE, one of Europe’s five largest energy companies. RWE’s activities involve generating, selling, transporting and supplying electricity and gas. RWE is the largest energy producer in Germany, while in the Netherlands Essent is the largest energy company
and in the United Kingdom it is the third largest producer of electricity. RWE also operates in Central and Southeast Europe.

**Growth**
The principal foundation for the future growth of the RWE group lies in its power stations and its investment programme for developing environmentally friendly and flexible generation capacity. Renewable energy plays an important part in that programme. RWE Innogy is the division responsible for developing generation capacity from wind and biomass. RWE’s leading position in Europe’s energy trade allows us to use our power stations to optimum capacity. The group develops products for households, the commercial sector and the business sector in response to changes in customers’ needs. Climate protection and an efficient approach to energy are becoming increasingly important in that connection.

**Lasting value**
RWE’s goal is to create lasting value for investors, customers and employees. As such, its strategy focuses on organic growth, supplemented with acquisitions that enhance the company’s value. RWE has ten ‘CR areas for action’, where it has set itself concrete targets in terms of corporate responsibility, for example to reduce CO₂ emissions. RWE’s CR areas for action are set out in RWE’s CR Report.

**Some key figures of RWE**
- RWE’s turnover in 2011 was 51.7 billion euros.
- The energy producer supplies 16.4 million customers with electricity.
- 7.8 million customers use gas supplied by RWE.
- RWE has more than 72,000 employees.

**More information about RWE**
For more information about the RWE group, please visit www.rwe.nl.
2. Corporate Responsibility

Corporate Responsibility (CR) is an integral part of all Essent’s operations. It plays an important part in how management and the workforce think and act.

Essent has a well-organised governance structure to implement Corporate Responsibility policy. Essent adheres to the principles of UN Global Compact, with which Essent is affiliated. In addition, Essent at all times acts in accordance with the principles of RWE’s Code of Conduct. In 2011, Essent was one of the first companies in the world to declare its adoption of the international ISO 26000 Guidance for the Social Responsibility of Organisations.

Spearheads
Our Corporate Responsibility policy has been translated into nine spearheads in the area of sustainability and corporate responsibility. Concrete goals have been defined for those spearheads, which are monitored on an annual basis and reported in the CR Dashboard.

Stakeholders
These wide ranging spearheads form the basis for our dealings and dialogue with various stakeholders, such as customers, non-governmental organisations, local residents near power stations, employees, shareholders and former shareholders. This helps us find the right balance between society’s interests and Essent’s interests.

2.1 Corporate Responsibility governance
The way in which the CR governance has been given shape at Essent reflects how important it is to us. Essent’s Executive Board is responsible for CR policy. Erwin van Laethem was appointed Essent’s new CEO on 1 January 2012. Corporate Responsibility is part of his portfolio in that role. On behalf of the Executive Board, he is responsible for Essent’s Corporate Responsibility Department, which is managed by CR Director Marga Edens. The department works together with the various business units to coordinate how the CR policy is given shape, controlled and implemented at Essent. Essent has defined nine Corporate Responsibility spearheads, to which concrete goals have been linked. The CR Director reports directly to the CEO, who, in turn, is accountable to Essent’s Supervisory Board and to RWE for the CR policy pursued by Essent.
CR Council and accountability
Essent formed a CR advisory body late in 2010, to provide the Executive Board and the CR Director with advice. This body is called the Essent CR Council

2.2 CR Council
The CR Council met for the first time in 2011. In all, the Council met three times. Essent’s CR Council serves as both a sounding board and an independent advisory body. The members of the CR Council:

- advise the Executive Board and the Corporate Responsibility Department;
- put forward ideas and identify areas of concern;
- express their views on Essent’s CR ambitions and CR dilemmas.

Social responsibility is an important part of Essent’s operations. That responsibility is borne by the whole organisation, from the Executive Board down to the individual employees. That is why Essent feels that the organisation needs to properly formalise the individual responsibilities. However, Essent does not see matters of policy and social responsibility as purely internal issues. The dialogue with the CR Council is an important way for Essent to obtain the external perspective that it requires.

Social areas
The members of the CR Council represent five areas of society that Essent considers to be important:
- Nature and the environment
- Science
- Customers
- Politics
- The business sector

The CR Council is a reflection of the society of which Essent is part and with which we wish to enter into a dialogue. Society’s issues are important factors in Essent’s operations, strategy and social acceptance. As such, it is important that the members of the CR Council have ample expertise and experience in the areas they represent. It is particularly important that they examine Essent’s CR policy from their own perspective and based on their own insights.

Activities in 2011
After the role and task of the independent advisory body had been clearly defined, Essent contacted the present members of the CR Council in 2010 to invite them to become part of the body. We also drew up a separate set of regulations for the Council. The first meeting, in April, focused on the CR Dashboard, which sets out Essent’s goals in terms of sustainability and social responsibility. The second and third meetings of the CR Council, in June and November, concerned concrete advice from the CR Council to Essent’s Executive Board.

Members of the CR Council
The members of the CR Council are five experts who are there in a private capacity. They do not represent the organisations for which they work, and they see it as their duty to provide Essent’s Executive Board with solicited and unsolicited advice, based on a critical consideration of Essent’s CR policy.

The members of the CR Council are:
- Willem Ferwerda (1959), chairman, represents ‘nature and the environment’ as
an area of society. He studied Biology and Tropic Ecology at universities in Amsterdam, the Netherlands, and Bogotá, Colombia. Ferwerda is founder of the business network for biodiversity, ‘Leaders for Nature’ and was – until recently - the executive director of the Dutch branch of IUCN, the International Union for Conservation of Nature, which was formed in 1948 for the purpose of conservation and sustainable use of nature worldwide. IUCN in the Netherlands ‘is a bridge between social organisations, the government, and science on ecosystems and the struggle against the loss of biodiversity’. In the Netherlands it has 37 member organisations, including the Wadden Sea Association, nature and environment organisation Natuur en Milieu, Dutch Preservation of Bird-life, Both ENDS, the WWF and the Dutch government (Dutch Ministry of Economic Affairs, Agriculture and Innovation). As of March Ferwerda focuses on founding a business consortium in which companies, business schools, local social organisations and IUCN scientists participate to restore nature worldwide.

• Wim Turkenburg (1947): represents ‘science’ as an area of society. He studied Physics, Mathematics, Astronomy and other subjects at the Universities of Leiden and Amsterdam, the Netherlands. He currently holds a number of positions:
  o Head of the Science, Technology and Society Section of the Department of Chemistry of the Faculty of Science of Utrecht University.
  o Director of the Copernicus Institute of Utrecht University.
  o Member of the Executive Board of Energieonderzoek Centrum Nederland (ECN)
  o Chairman of the Communication Platform for Climate Change in the Netherlands
  o Deputy Chairman of the Dutch research programme studying CO₂ Capture, Transport and Storage (CATO).

• Leendert-Jan Visser (1964): represents ‘customers’ as an area of society. He has had a long career working in various positions at MKB Nederland, the organisation for the SME sector in the Netherlands. He was appointed director of MKB Nederland in 2009.

• Tineke Huizinga (1960): represents ‘politics’ as an area of society. She read Law at Utrecht University. Previously she was the State Secretary of Transport, Public Works and Water Management and Minister of Housing, Spatial Planning and the Environment. Huizinga also represented the Christenunie political party in the Dutch House of Representatives. At present, Huizinga chairs the International Governing Board of the Delta Alliance, a worldwide platform of delta areas whose goal is to make deltas less vulnerable by sharing existing knowledge and working together to develop knowledge. She also chairs the Dynamic Tidal Power steering committee, which advocates an innovative form of renewable energy.

• Manon van Beek (1970): represents ‘the business sector’ as an area of society. She studied Economics at VU University Amsterdam and the Università degli Studi di Modena (Italy). She is an executive partner of
Accenture (Accenture is globally active in the field of management consulting, technology and outsourcing), where she is responsible for the Benelux Utilities sector. Projects in which Van Beek is involved include smart meters, smart grid, smart cities, eMobility, energy management and operational excellence. Van Beek has over fifteen years’ program and project management in energy and water sectors.

The CR Council’s advice in 2011
In 2011, the CR Council advised the Executive Board on the CR Dashboard. The Council’s advice will be considered when the Executive Board evaluates the CR Dashboard. The CR Council also advised on nuclear energy and biomass:

- Advice about nuclear energy
  The first topic on which the CR Council advised in 2011 concerned one of the key issues in the Dutch energy supply: what sources should we use to generate electricity, and under what defining conditions? The CR Council applied this question to the use of nuclear energy by Essent. It presented advice about the role of nuclear energy in Essent’s production portfolio. This advice will be published in the web environment of the Essent online CR Report 2011.

- Advice about biomass
  The use of biomass for generating electricity is an important pillar in Essent’s strategy for achieving its sustainability goals. Biomass offers a major advantage compared with other renewable sources of energy: it is always available and does not depend on sun or wind. This makes it a renewable source of energy that is reliable and relatively cheap. As a consequence, biomass is being used more and more. In 2011, we asked the CR Council to analyse Essent’s policy and actions for guaranteeing the sustainability of biomass. This advice will be published in the web environment of the Essent online CR Report 2011.

2.3 The CR Dashboard and the spearheads of Essent’s CR policy
We have defined the following spearheads for Essent’s Corporate Responsibility (CR) policy.

1. Emission reduction
2. Renewable energy
3. Energy saving
4. Innovation
5. A healthy, safe working environment
6. Sound employership
7. Customer satisfaction
8. Human rights
9. Corporate citizenship

These spearheads have clear interfaces with the society in which we operate, and they correspond closely to RWE’s ‘areas of action’. The spearheads have been set out in the CR Dashboard. For each spearhead, Essent has defined a key performance indicator (KPI) and a goal. The definitions and goals were based on input from relevant employees, specialists and managers of the divisions involved and have been approved by the Executive Board. The progress made in achieving the goals is monitored and evaluated by Essent’s Executive Board annually. More information is presented in the CR Dashboard. The CR Council plays an advisory role in this evaluation.
2.4 UN Global Compact

In 2007, Essent was the first Dutch energy company to become affiliated with the UN Global Compact, an initiative for the development and application of universal principles relating to human rights, working conditions, the environment and anti-corruption.

The UN Global Compact is formed by governments and the business sector and operates under the auspices of the United Nations. Besides its own goals, the UN Global Compact supports the eight Millennium Development Goals. The UN Global Compact also has a Dutch Chapter, with which Essent is affiliated. The UN Global Compact in the Netherlands focuses in particular on two of the Millennium Development Goals:

- Eradicate extreme poverty and hunger;
- Ensure environmental sustainability.

RWE Code of Conduct

We apply the principles of the UN Global Compact to ourselves and to our business partners. We seek full compliance with the code. Essent has derived ten essential arrangements from the RWE Code of Conduct, representing a summary of the rules that we impose on ourselves, on our employees and on our commercial partners:

1. We respect the internationally accepted human rights.
2. We act with integrity and transparency.
3. We act with the customer’s interests at heart.
4. We demonstrate community engagement.
5. We treat the environment with care.
6. We advocate free enterprise and fair competition.

7. We continually work to improve the quality of our performances.
8. We treat each other equally and with confidence. Employees and job applicants may not be treated unfairly on the grounds of their sex, marital status, race, nationality, age, religion or sexual orientation.
9. We ensure a safe and healthy working environment.
10. We impose the same demands on our business contacts as we do on ourselves.

2.5 Adoption of ISO 26000 by Essent

On 25 October 2011, Essent published a statement in which it announced that it had adopted the ISO 26000 standard, the international guideline for social responsibility of organisations.

Pilot project

In 2011, Essent and nine other businesses were part of a pilot project conducted by normalisation institute NEN to measure the extent to which ISO 26000 is applied in practice. Before that, Essent also helped draft the global standard. The processes for and reports on Essent’s Corporate Responsibility have been designed in line with the principles of ISO 26000.

Principles of ISO 26000

The most important principles of ISO 26000 are:

1. Embrace the seven leading principles of social responsibility:
   o accountability
   o transparency
   o ethical conduct
   o respect for stakeholders’ interests
   o respect for the law
2. Corporate Responsibility

- respect for international rules of conduct
- respect for human rights

2. Recognise your responsibility as a business in respect of the effects that your operations have on people, society and the environment, and recognise that you can influence suppliers, for example.

3. Identify your stakeholders and enter into a dialogue with them.

4. Analyse relevant themes and examine which of those themes are important in terms of your organisation’s responsibility.

5. Integrate social responsibility into the business’ policies, decision-making processes, culture and day-to-day work.

2.6 Sustainability Agreement between RWE and Essent’s former shareholders

In 2009, RWE entered into a Sustainability Agreement with former shareholders of Essent. That agreement was based on the principle of safeguarding the balance between availability of energy, sustainability and affordability.

Part of the Sustainability Agreement was that an independent supervisory foundation was to be formed at the beginning of 2012: the Essent Sustainability Development Foundation (ESDF). The most important executive body of the ESDF is the Sustainability Development Council (SDC), which has three members representing Essent and RWE, three members representing the former shareholders and one independent chair. That council met for the first time near the end of 2011.

The Agreement sets out binding arrangements about:

- the generation of affordable and renewable energy;
- investments aimed at the production of renewable energy and the reduction of CO₂ emissions;
- investments in innovation;
- investments in excellent customer service at competitive prices.

Development plan

The development plan set out in the Sustainability Agreement states that during the period from 2009 to 2013 RWE will invest close to 4.5 billion in the Netherlands, in such areas as:

- the coal/biomass-fired power station in Eemshaven;
- the expansion and modernisation of the gas-fired power stations in Moerdijk and Maasbracht;
- offshore and onshore wind energy.

RWE is also investing in:

- the reliability of the gas supply;
- optimisation of Essent’s customer service;
- electric transportation.

Implications of the investments

The investments will serve to guarantee the availability and affordability of energy, to improve the relationship with customers through better service and to safeguard sustainability. Lastly, the investments will contribute to Essent’s ambition to lower CO₂ emissions, by:
• raising the proportion of green energy to 20-25 percent by 2020;
• improving the energy efficiency with the construction of the Eemshaven power station,
• the expansion and modernisation of the Claus power station with Unit C and the expansion of the power station in Moerdijk.
• Offshore and onshore wind energy

In time, these measures will allow us to extract more energy from the same volume of fuel.

The Essent Sustainability Development Foundation (ESDF)

The Essent Sustainability Development Foundation (ESDF) monitors compliance with the arrangements set out in the Sustainability Agreement. The independent foundation has three bodies:

1. a managing board, made up of seven representatives of the Essent’s former shareholders from before its acquisition by RWE;
2. the Sellers’ Council, made up of 136 representatives of the former shareholders;
3. the Sustainability Development Council (SDC), made up of three members representing Essent and RWE, three members representing the former shareholders and one independent chair.

Sustainability Development Council

The most important executive body of the ESDF is the Sustainability Development Council (SDC). That council meets twice annually to monitor the progress being made with the arrangements. The SDC’s principal duties are:

• to monitor RWE and Essent’s performance of the Sustainability Agreement, including the Development Plan;
• to evaluate the progress achieved with the implementation of the Development Plan;
• to offer solicited and unsolicited advice to the Managing Board of ESDF, Essent and RWE about the performance by Essent and RWE of the Sustainability Agreement and the Development Plan.

Before the ESDF was formally founded, the SDC met for the first time on 21 December 2011. The former shareholders of Essent expressed their impression that Essent is headed in the right direction. A definite interim position will be defined at the meeting in June 2012.

Arbitration

If Essent or RWE fails in its performance, the SDC may refer a claim for performance by Essent or RWE for arbitration. The Sustainability Agreement provides that Essent or RWE will have to pay the SDC a penalty in such cases.

2.7 Supply chain responsibility

RWE procures fuels such as coal, gas and biomass on the global market. Essent uses those fuels in its power stations to produce electricity and heat or to sell gas.
Essent is aware of the issues surrounding supply chain responsibility and of the impact of its actions on people and the environment. By acting in accordance with the principles of the UN Global Compact, Essent provides a transparent account of the origins of the fuels it uses. For example, more than 96 percent of the biomass used in our power stations meets the conditions of the Green Gold Label, a system that guarantees the sustainability of biomass.

**Coal dialogue**
We are also a company that is not afraid to take its responsibility regarding the origins of coal. That is why Essent participant in the Dutch coal dialogue. Through its parent company RWE, Essent also takes part in the European coal dialogue Better Coal, which was launched in 2011.

**2.8 Accountability for Corporate Responsibility**
Essent annually publishes a CR Report in which it renders account for its activities in the area of Corporate Responsibility (CR). For 2011, we have opted for an online variant. The composition of the CR Report is based on the principles for CR reports of the Global Reporting Initiative (GRI).

**Global Reporting Initiative**
GRI is affiliated with the United Nations. It has published a widely accepted and used set of reporting guidelines for CR reports. Using the reporting guidelines means that separate items in different reports (and therefore businesses) can be compared. The reporting guidelines prescribe a large number of themes on which we are obliged to report. They also prescribe the methods of measurement and reporting.

**Transparency Benchmark**
In 2004, the Dutch Ministry of Economic Affairs, Agriculture and Innovation started commissioning annual Transparency Benchmarks. This business comparison, participation in which is mandatory, examines how transparent businesses are in their social reports, for example about the environment but also about how they deal with dilemmas and stakeholder involvement. The transparency study into the CR reports of 469 large enterprises presented Essent as the second best energy company in 2011. In the total list, Essent occupies a 26th spot, having improved its score by 20% compared with 2010. However, the scores in the Transparency Benchmarks are continually improving across the line. That is why our improved score only resulted in us climbing
one place in the rankings compared with 2010. The improvement was achieved not simply by following a checklist but by communicating about issues that are relevant to Essent and to society. We try to be transparent and to offer proper explanations of our views and positions.

2.9 Questions, notifications or suggestions for improvements about our CR policy?

Questions, notifications and suggestions for improvements about the CR policy pursued by Essent may be submitted by email to cr@essent.nl.

In principle questions, notifications and suggestions for improvements will be dealt with on an individual basis, if necessary with input from the relevant divisions of the company. Notifications and suggestions for improvements submitted by employees are handled by way of the whistleblower rules, the complaints procedure and the separate confidential staff counsellors.
3. Essent’s spearheads

Essent’s Corporate Responsibility (CR) policy includes nine spearheads:

1. Emission reduction
2. Renewable energy
3. Energy saving
4. Innovation
5. A healthy, safe working environment
6. Sound employership
7. Customer satisfaction
8. Human rights
9. Corporate citizenship

We have linked goals to these spearheads, which we measure annually and report in our CR Dashboard (page 25). Short descriptions of the nine spearheads are presented below. The following paragraphs provide information about the principal projects and results connected with some of the spearheads.

3.1 Reduction in emissions
Essent puts a great deal of effort into reducing its CO₂ emissions and fulfilling various sustainability goals. In 2009 Essent, with many other European energy companies, signed the Eurelectric Declaration, which states that the signatories will dedicate themselves to achieving a CO₂-neutral energy supply by 2050. In this manner, we are working to protect the climate. The progress in Essent emission reduction effort is measured on the CO₂-emission per unit of electricity generation (g/kWh).

More efficient energy systems and more Green Electricity
To realise that concept of a CO₂-neutral electricity supply by 2050, in 2011 Essent again invested in more efficient energy systems, such as combined heat and power stations, the Eemshaven power station and the Claus C power station. We also invested in the production of more Green Electricity by co-firing biomass and building wind turbine parks. Of course we will also continue to focus on innovation.

3.2 Renewable energy
Essent is the largest producer of renewable energy in the Netherlands. During the coming years, we intend to further increase the proportion of renewable energy in our energy mix, by investing in processes to co-fire biomass at the Amer power station (in Geertruidenberg) and the Eemshaven power station (in the Province of Groningen).

What is the proportion of renewable energy?
We measure the proportion of renewable energy in our total energy production. Another goal relating to renewable energy is the percentage of the biomass used that is certified according to the Green Gold Label standard.
3.3 Energy savings

We consider it part of our responsibility as energy supplier to encourage customers to use energy wisely and to make energy savings. Alongside information for consumers on our website, we offer products such as solar panels, a smart thermostat and a home insulation service. For business customers we offer tailored solutions such as energy scans and energy-saving lighting (see chapter 4). Energy-saving by customers is measured in CO₂ emissions in tonnes. Goals and result can be found in our CR Dashboard (page 25).

Progress in Essent’s energy-saving efforts

As far as Essent itself is concerned, we have ambitious targets for reducing our energy use in vehicles and accommodation (lighting, heating and IT). The progress in Essent’s energy-saving efforts is measured based on the CO₂ emissions from accommodation and transport per full-time equivalent (FTE). Our goal is to reduce our CO₂ by five percent per year during the period from 2011 to 2013.

3.4 Innovation

Innovation is a vital instrument for Essent to realise its sustainability goals. We research promising technological developments and launch pilot projects where research and commercial operation meet.

Innovation projects

The following are a sample of Essent’s most important innovation projects:

- Green gas, for example the Biogas XL projects under the Green Deals
- Electric transport
- The biobased economy

We monitor our innovation goals based on the number of initiatives that lead to pilot projects.

3.5 A healthy, safe working environment

It is vital to Essent that its own employees as well as the employees of businesses that work for Essent can come to work safely in the morning and return home again safely at night. As such, we have a strict Health, Safety & Environment policy.
Healthy and safe working practices
We are one of the leading European energy companies in terms of Health, Safety & Environment (HSE). Essent does everything in its power to ensure the health and safety of its employees while they are at work, both at our production locations and at our offices.

Measuring goals
We measure our HSE goals using three methods:

- The percentage of sick leave days in relation to the total number of working days
- The total number of accidents at Essent
- The number of incidents per year per hundred FTEs

A remuneration structure for senior management and members of Essent’s Executive Board has been linked to this spearhead.

3.6 Sound employership
Employees are valuable to Essent. We do everything in our power to recruit and retain good employees for our business. It is our intention that Essent has the reputation of being an attractive employer. We measure this based on our position as a top employer in the annual list of Best Employers in the periodical Intermediair. We seek to structurally occupy a spot among the 25 best businesses. Diversity is another important factor to us: at every layer in the company, our workforce should reflect the society in which we operate. We measure this based on the percentage of women at Essent in management positions.

3.7 Customer satisfaction
Customer satisfaction is all about service and about offering products and services that our customers need. Customer satisfaction is very important to Essent. Our intention is to provide our customers with products and services that are a perfect match for their energy needs. We also promote Green Electricity and Green gas as alternatives to fossil fuels. We measure customer satisfaction based on the percentage of unsatisfied customers per year. A remuneration structure for senior management and members of Essent’s Executive Board has been linked to this spearhead.

3.8 Human rights
Essent encourages a way of doing business that respects human rights. We apply the principles of the UN Global Compact to ourselves and to our business partners. Those principles are the basis on which the RWE Code of Conduct is founded. We always seek to be fully compliant with the RWE Code of Conduct: for example, we wish to have assurances that our purchases of regular goods and services and our purchases of biomass fuels meet strict conditions for social issues and for nature and the environment.

3.9 Corporate citizenship
Essent seeks to be a good corporate citizen of the society in which it operates. We give this role shape through a range of different social projects. Essent seeks to reinforce its social licence to operate by:

1. being an active member of the UN Global Compact. We measure how active we are based on the number of projects in which we participate that help bring about the principles of the UN Global Compact;
2. encouraging our employees to do volunteer work in Dutch society. We measure this by the percentage of our personnel that does volunteer work via the Companius programme.
CR Dashboard
Onze CR-speerpunten en voortgang 2011

Essent CR Dashboard

As an energy company that is part of the society in which it operates, Essent has for several years been pursuing nine policy spearheads that have clear interfaces with that same society. The CR Dashboard ensures that Essent’s targets are clear, measurable and manageable. In 2011 the targets and results were evaluated for the first time.

In 2010, for the first time, we defined KPIs (key performance indicators) for those spearheads and added targets for those KPIs. Those KPIs and targets are summarised in the Corporate Responsibility (CR) Dashboard, with further explanation presented in the box. In 2011, we entered the progress reports for all KPIs, and the Executive Board assessed the results for the first time. That assessment included the advice offered by the independent CR Council. The 2011 results for each spearhead are presented in the CR Dashboard.

Assessment of results

Our long-term goals for renewable energy and for reducing CO₂ emissions are under pressure from the deteriorating international market conditions and from specific policy choices of government authorities in the Netherlands and Germany. Projects that will help achieve those goals will likely be pushed back. The developments in question are the following.

- We will have fewer funds available for investments, as a result of the economic circumstances and the forced closure of RWE’s nuclear power stations in Germany.
- Until 2015, the proportion of co-fired biomass will not increase because the current arrangements with the government do not provide for such an increase.
- At present, the government is not offering any financial support for new offshore wind parks.
- The delay in the construction of the Eemshaven power station as a result of the additional time needed to obtain permits means a lower percentage of biomass by 2020.
- The government has rejected plans for capturing and storing CO₂ (CCS), preventing the pilot project that had been planned for the Eemshaven seaport from being put into action.

Nevertheless, we will maintain our current goals and continue to advocate new regulations in the form of a supplier obligation, which should enable us to put our plans for wind energy and biomass into practice.
In 2012, Essent will also define new KPIs for other emissions, for example of particulate matter and nitrogen oxides. The spearhead of ‘reduction in emissions’ will be split into ‘climate protection’ and ‘environmental protection’ spearheads, giving us ten CR spearheads.

Essent will also continue to focus on energy savings for customers, using effective business cases for saving energy. In addition, Essent hopes that ambitious targets can be agreed in the ‘More with Less’ energy saving covenant between the government and the industries concerned, which is currently in the process of being renewed.

We will continue our current policy of helping our employees to save energy. We will improve our system for monitoring progress and continue to actively encourage employees to limit the amount of energy they use.

Essent’s focus is on the launch of four innovative pilot projects during the 2011-2012 period. Essent is well on course with this, thanks to two such pilots that are already underway (participation in PowerMatching City in Hoogkerk and tests using new biofuels in the bio-power station in Cuijk).

Essent will promote continual improvements in health and safety by setting stricter targets for 2012. For instance, it has adjusted the target for the percentage of days’ sick leave to 3.5%, the same as in 2010.

The number of women in top management positions and just below at Essent has dropped slightly. We seek to increase the percentage in question. As such, Essent will give this issue more attention.

The number of Essent employees who have done volunteer work under the Companius programme is lower than we hoped. Part of the reason is that 2011 was a pilot year for Companius. The target of having 5% of our workforce participate in Companius will remain unchanged for 2012.

For 2012, we will introduce a new UN Global Compact project, in addition to the small-scale cooking stoves projects that Essent has initiated in Mali and Ghana. The intention is that the project will also contribute to the realisation of one or more of the UN Global Compact principles. The cooking stoves, for example, help to achieve a more efficient use of fuel and a healthier living environment for their users.

Advice of the CR Council

In 2011, the CR Council discussed the CR Dashboard with Essent’s CEO at the time, Peter Terium, and with Marga Edens, the CR Director. The results of their discussions were taken on board in the assessment of the CR Dashboard. The Council issued specific advice on two spearheads.

The CR Council’s advice on the spearhead reduction in emissions:

- Include other emissions in this CR spearhead too, for example nitrogen oxides and particulate matter.
- Investigate whether it is possible to pursue ‘at least CO₂-neutral’ as the long-term goal.
- Investigate whether storing CO₂ on land (CCS) and projects for restoring land can be included in the strategy for CO₂ reduction.

Essent has adopted these proposals put forward by the CR Council.
The CR Council’s advice on the spearhead proportion of renewable energy:

- Seek to be more ambitious in connection with the proportion of renewable energy.
- Continue the dialogue with the government about the new regulations for increasing the proportion of renewable energy in the energy mix in the form of a supplier obligation.

As described above, the realisation of our goals for renewable energy is under pressure. Nevertheless, Essent will maintain its current goals. We will continue to advocate new regulations in the form of a supplier obligation to enable us to put our plans for wind energy and biomass into practice.
CR Dashboard

**EMISSION REDUCTION**
- A carbon neutral power supply by 2050

**RENEWABLE ENERGY SHARE**
- Double our share of renewable energy production by 2020

**ENERGY SAVINGS**
- Stimulate energy savings

**INNOVATION**
- In search for efficient and sustainable energy solutions

**HEALTH, SAFETY & ENVIRONMENT**
- Offering a healthy and safe working environment

**SOUND EMPLOYMENTSHIP**
- Essent is a renowned employer with special care for diversity

**CUSTOMER SATISFACTION**
- Living up to the promises as available, affordable and sustainable as possible

**HUMAN RIGHTS**
- Respecting human rights in global commodity and fuel chains

**CORPORATE CITIZENSHIP**
- Supporting social projects, good causes and voluntary work

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**STATUS 2011**

**ESSENT**
- Average 2011 CO2 emissions were 522 g/kWh
- In 2011 12.5% of our total energy production was renewable. 96% of the imported wood pellets was Green Gold Label certified
- In 2011 96 kton CO2 reduction by our customers in 2011, average CO2 emission of comfort and buildings: 3.3% per year since 2008
- In 2011 2 pilot projects were initiated
- The 2011 LTIF was 0.65 and the TRCF was 1.29. The illness rate was 3.85%
- Essent became 25th in top 25 Beste Werkgevers Intermediar survey. 18% women in (sub)top management positions
- The 2011 percentage dissatisfied customers is 5%

**522 g/kWh**
- 12.5% of total energy production
- 96% Green Gold Label
- 3.3% per year since 2008

**2 PILOT PROJECTS IN 2011**
- The 2012 LTIF target 1.3. TRCF 2.6 and illness rate 3.5%
- Permanent top 25 ranking in Beste Werkgevers Intermediar survey. 25% women in (sub)top management positions in 2013
- The 2012 percentage dissatisfied customers is less than 6%

**100% COMPLIANCE WITH RWE CODE OF CONDUCT**
- Lowering average CO2 emissions to less than 500 g/kWh in 2012 and to less than 400 g/kWh in 2020
- Share of renewable energy production 20-25% by 2020. 100% of imported wood pellets was Green Gold Label certified in 2011
- A total of 161 kton CO2 reduction to be realised by our customers. 5% annual CO2 reduction per FTE 2011-2013
- Initiation of 4 pilot projects between 2011-2012
- 2012 LTIF target 1.3. TRCF 2.6 and illness rate 3.5%
- Permanent top 25 ranking in Beste Werkgevers Intermediar survey. 25% women in (sub)top management positions in 2013
- The 2012 percentage dissatisfied customers is less than 6%

**2.6% OF OUR EMPLOYEES IN 2011**
- We apply the UN Global Compact principles to our self and partners. Confirmed in 2011 by full compliancy RWE Code of Conduct

**1 PILOT PROJECT IN 2011**
- In 2011 2.6% of our employees volunteers in the Companius programme. 1 project contributing to UN Global Compact

**TARGET**

**<500 g/kWh in 2012**
- 20-25% of total energy production 2020
- 100% Green Gold Label

**<400 g/kWh in 2020**
- A total of 161 kton in 2012
- 5% per FTE per year 2011-2013

**4 PILOT PROJECTS 2011-2012**
- 1.3 LTIF
- 2.6 TRCF
- 3.5% Illness rate

**≤ 6% in 2012**
- 100% compliance with RWE Code of Conduct

**5% OF OUR EMPLOYEES IN 2012**
- In 2012 5% of our employees volunteers in the Companius programme. 1 new project in 2012
1. Reduction in emissions
Essent has signed the Eurelectric climate statement, committing itself to the concept of a CO₂-neutral electricity supply by 2050. We seek to achieve that goal by investing in highly efficient power stations and more renewable energy production.

KPI and target
We measure the reduction in emissions based on the CO₂ emission in grams (g) per kilowatt hour (kWh). Our emissions in 2009 were 572 g/kWh. Essent’s targets are that this figure must be less than 500 g/kWh in 2012 and less than 400 g/kWh by 2020. These targets are based on the assumption that the government will introduce new legislation offering incentives for large-scale biomass co-firing and wind energy.

2. The proportion of renewable energy in the energy mix
Essent is the largest producer of renewable energy in the Netherlands. Our goal is to double the proportion of Green Electricity in our electricity mix and raise it to 20-25 percent by 2020. We seek to achieve that goal by investing in more wind energy through our sister company RWE Innogy and by co-firing larger volumes of biomass in our power stations. It is our intention to use sustainable biomass only.

KPI and target
We measure the proportion of renewable energy in the energy mix according to the percentage of renewable energy in our total energy production. We measure the proportion of sustainable biomass based on the percentage of biomass certified according to the Green Gold Label (GGL) standard. We seek to be generating at least 20 percent of our electricity mix using sustainable methods and renewable resources by 2020. In 2012, 90 percent of the wood pellets imported must be certified according to the GGL standard. That figure should be 100 percent by 2015.

3. Energy savings
Essent feels that it is its responsibility to encourage its customers to be careful with energy. We offer our customers ‘smart’ thermostats, an insulation service and other products and services to achieve this. We also consider our own operations as an area where energy can be saved. Essent is conducting various savings programmes aimed at accommodation and transport.

KPI and target
We measure the energy saved by customers in tons of CO₂ reduction. By 2012, we need to have saved 161 kt tons of CO₂ based on the measures taken since 2008. We measure the progress that Essent makes in saving energy based on the CO₂ reduction per kilogram per FTE. Our target is to realise a 5 percent reduction per year during the 2011-2013 period.

4. Innovation
Essent researches promising technological developments and initiates pilot projects where research and commercial operation meet.

KPI and target
We measure our innovation goals based on the number of initiatives that lead to pilot projects. That number must be at least four during the 2011-2012 period.

5. Health, Safety & Environment
Essent seeks to ensure maximum health for its employees. We make every effort to offer a healthy and safe work place for our own employees and for employees of businesses working for Essent.

KPI and target
We have three methods for measuring our HSE targets:
1. the percentage of sick leave days in relation to the total number of working days
2. Lost Time Injury Frequency (LTIF), representing the number of accidents preventing employees from coming to work
3. Total Recordable Case Frequency (TRCF), representing the number of work-related accidents leading to absence from work, partial sick leave or treatment
The 2012 target for LTIF is 1.3, while the target for TRCF is 2.6. The target for the percentage of days’ sick leave is 3.5 percent.

6. Sound employership
It is our intention that Essent have a reputation for being an attractive employer that offers employees a safe work place and inspiring jobs in which people can develop. We also believe that our workforce, at every layer in the company, should reflect the society in which we operate. The workforce must be properly balanced in terms of sex, age and ethnical background.

KPI and target
We measure the progress achieved with this spearhead using the following KPIs:
• Our position as a top employer in the annual list of Best Employers in Intermediair: we seek to structurally occupy a spot among the 25 best businesses.
• The percentage of women at Essent in top management positions and just below: that percentage must be 25% by 2013.

7. Customer satisfaction
Essent values its customers. We seek to provide them with a good level of service and to offer products and services that meet their needs.

KPI and target
We measure customer satisfaction using the percentage of dissatisfied customers. For 2012, our target is again 6 percent or less.

8. Human rights
Essent has been a member of the UN Global Compact since 2007. This means that, in conducting our business, we respect international human rights, working conditions and the environment, and that we reject corruption.

KPI and target
We measure this as the degree to which our conduct and that of our partners comply with the RWE Code of Conduct. In all instances, we seek to be fully compliant with the RWE Code of Conduct.

9. Corporate citizenship
Essent seeks to be a good corporate citizen of the society in which it operates and to make a manifest contribution to that society.

KPI and target
Essent does this by:
• encouraging its employees to do volunteer work in Dutch society. We measure this based on the number of employees doing volunteer work via the Companius programme.
• being an active member of the UN Global Compact. We measure this based on the number of projects in which we participate that help bring about the principles of the UN Global Compact. That must be at least one.
Key figures
Key figures

- **CO₂-emissions energy production (ktonne)**
  - 2009: 10,934, 2010: 9,996, 2011: 8,216

- **SO₂-emissions energy production (tonne)**

- **NOₓ-emissions energy production (tonne)**

- **Dust emissions (PM10) energy production (tonne)**
Total coal consumption in the Amer power station, generating electricity for Essent customers, was 1.59 million tonnes in 2011.
## Generating of renewable energy

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2010</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind energy</td>
<td>496³</td>
<td>367³</td>
<td>1,067²</td>
</tr>
<tr>
<td>Hydropower</td>
<td>15</td>
<td>31</td>
<td>26</td>
</tr>
<tr>
<td>Stand alone clean biomass</td>
<td>0</td>
<td>85</td>
<td>153</td>
</tr>
<tr>
<td>Fossil fuels replaced by clean biomass</td>
<td>1,462</td>
<td>1,646</td>
<td>1,669</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,974</strong></td>
<td><strong>2,129</strong></td>
<td><strong>2,915</strong></td>
</tr>
</tbody>
</table>

Long term wind energy power contracts

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>770</td>
<td>626¹</td>
</tr>
</tbody>
</table>

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1: Due to changes in principles underlying the organisation an reporting caused by the takeover by RWE, the figures for 2009, 2010 and 2011 are not directly comparable with those of previous years. These figures can be found at www.essent.nl.

2: Of which 606 GWh in Germany (these wind farms are part of RWE Innogy in Germany and not reported here).

3: RWE Innogy Benelux included.

4: Reported for the first time for 2010

### Wood pellets with Green Gold Label (GGL)

- **Certified**: 96%
- **Not certified**: 4%

**Imported wood pellets used in Amer power station.**

### Wood pellet consumption and origin

- USA 44%
- Canada 38%
- South-Africa 2%
- Latvia 2%
- Russia 3%
- Australia 4%
- Portugal 7%
- UK 1%
- Germany 1%
- Total biomass consumption in the Amer power station generating electricity for Essent customers, was 0.73 million tonnes in 2011. Over 89% of this was (imported) wood pellets.
### People, planet, profit, power

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2010</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>People</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of employees</td>
<td>3,794</td>
<td>3,899</td>
<td>4,359</td>
</tr>
<tr>
<td>% women</td>
<td>34</td>
<td>34</td>
<td>35</td>
</tr>
<tr>
<td>% women in management positions</td>
<td>18</td>
<td>19</td>
<td>16</td>
</tr>
<tr>
<td>% absence due to illness</td>
<td>3.85²</td>
<td>3.5²</td>
<td>3.7</td>
</tr>
<tr>
<td>LTIF (DART rate)³</td>
<td>0.65</td>
<td>0.48</td>
<td>(0.40)</td>
</tr>
<tr>
<td><strong>Planet</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donations (approximate amount, in euros)</td>
<td>433,519</td>
<td>130,000</td>
<td>300,000</td>
</tr>
<tr>
<td><strong>Profit</strong>⁴</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turnover</td>
<td>-</td>
<td>6,120</td>
<td>5,710</td>
</tr>
<tr>
<td>Profit attributable to equity holders</td>
<td>-</td>
<td>762</td>
<td>4,391</td>
</tr>
<tr>
<td>Total equity</td>
<td>-</td>
<td>6,847</td>
<td>6,274</td>
</tr>
<tr>
<td>Total interest-bearing liabilities</td>
<td>-</td>
<td>24</td>
<td>109</td>
</tr>
<tr>
<td>Capital employed</td>
<td>-</td>
<td>7,572</td>
<td>7,387</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total renewable generating capacity</td>
<td>557⁵</td>
<td>532⁵</td>
<td>1,076</td>
</tr>
<tr>
<td>Renewable electricity as % of total power generation</td>
<td>12.5</td>
<td>12.1</td>
<td>15</td>
</tr>
<tr>
<td>Number of customers purchasing green electricity + Windkracht 220 + Groen Zakelijk in the Netherlands</td>
<td>1,100,000⁶</td>
<td>1,000,000⁶</td>
<td>920,000</td>
</tr>
<tr>
<td>Number of Groen for Gas customers</td>
<td>29,541</td>
<td>32,500</td>
<td>34,800</td>
</tr>
<tr>
<td>CO₂-emissions (ktonne)⁷</td>
<td>8,216</td>
<td>9,996</td>
<td>10,934%</td>
</tr>
<tr>
<td>% solid biomass with Green Gold Label</td>
<td>96⁸</td>
<td>92⁸</td>
<td>73</td>
</tr>
</tbody>
</table>

1: full-time and part-time employees (excluding Executive Board members and managing directors, apprentices, dormant employment, working students/interns, partial retirement in the release phase) employed on a permanent or fixed term contract basis, with the part-time reduction deducted (Source: RWE Social report 2011).
2: Essent excluding Energie:Direct, Essent Belgium, ELES-extended, Essent productie Geleen (EPG).
3: From 2010 safety figures are reported in LTIF. This ensures a better comparison to other companies.
4: The profit figures 2011 are added as soon as the consolidated financial statement of Essent N.V is available.
5: Wind activities of RWE Benelux are included.
6: RWE Netherlands customers included.
7: Emissions from the generation of electricity and heat.
8: Refers to imported wood pellets only.
4. Our sustainable products and services

Besides renewable energy products, for example Green Power, Essent provides concrete products and services in its capacity as an energy service provider that are aimed at lowering our customers’ energy bills: not only to help save them money, but also to protect the environment.

Essent supplies gas, electricity and heat, and provides energy services to two million consumers and businesses. We are also the largest producer of Green Power in the Netherlands. More than one million Dutch customers (consumers and commercial customers) bought Green Power (Groene Stroom), Green Power for commercial customers (Groen Zakelijk) and wind power (Windkracht 220) from us in 2011. In all, almost half our electricity customers use sustainable energy products and services. Yet Essent offers more.

Smart products and services

More and more of our customers are asking for smart and easy energy services and products: to lower their energy bills, but also because they know that saving energy is good for the environment. They are not concerned with the rate per kilowatt hour of electricity or per cubic metre of gas so much as with the bottom line of what they have to pay.

4.1 Examples of sustainable products

Essent offers an extensive range of products that are sustainable or that help customers save energy in very easy ways.

Groene Stroom and Groen Zakelijk

As far back as in 1995, Essent was the first to introduce green electricity in the Netherlands, making it a pioneer in this field. As much as possible of our green electricity for the commercial and private markets is generated in the Netherlands, using primarily clean biomass, wind energy and some hydraulic power. In 2002, to ensure that the biomass we use is in fact sustainable, we adopted the Green Gold Label system to monitor the sustainability of the sources of our biomass. In 2011, 92% of the imported wood pellets (compressed sawdust) that we use in our power stations were compliant with the standards of that label.
My-E: smart energy solutions
In November 2011, Essent introduced a new innovative product line under the name of My-E (Mijn-E). My-E is the label under which a series of smart energy solutions are offered. My-E offers consumers a simple tool for reading their energy usage, which helps them to save energy. The first product that was brought onto the market under this label was the E-Thermostat, which gives consumers an easy way to change the temperature in their homes from any location, using an app on their smartphones or tablet computers.

The Savings Coach
Another product is the Savings Coach (BespaarCoach), which we launched in February 2011. The Savings Coach is an online program that shows consumers how to save energy and what the annual savings in euros are. Many of the possible savings are easy for consumers to implement themselves. The Savings Coach offers tips and instructions.

Essent also offers the Savings Fan (Bespaarwaaijer), which can be ordered online. The Fan offers customers practical tips on how to save energy.

The National Insulation Service
Essent’s National Insulation Service (Nationale Isolatieservice) employs insulation consultants who offer consumers a quick explanation of the possibilities for insulating their homes. They also explain what the costs and the savings are. In many cases, cavity wall insulation, floor insulation and roof insulation can save people hundreds of euros’ worth of energy every year. The National Insulation Service was introduced towards the end of 2010. In 2011, we launched an extensive new campaign to raise awareness among our customers.
Essent also offers the Insulation Test (Isolatie-test), a simple tool with which customers can estimate what savings they can achieve by insulating their homes.

**Energy Saving Plan for businesses**

Specifically for small and medium-sized enterprises, we introduced the Energy Saving Plan (EnergieBespaarplan) late in 2010. The Energy Saving Plan was developed for sectors such as the hotel and catering industry, car firms, retail, food/non-food, professional services and production companies. An Essent consultant draws up an energy analysis of the business and offers energy advice tailored towards the customer’s specific situation, which can easily lead to annual savings of 1,500 to 2,000 euros.

**Windkracht 220**

Windkracht 220 is Green Power specifically for businesses. This electricity is generated entirely using Dutch wind turbines and has the lowest CO₂ footprint of all electricity products on the CO₂ Performance Ladder of the Independent Foundation for Climate-Friendly Procurement and Business (SKAO). Windkracht 220 helps businesses to move higher on the CO₂ Performance Ladder and so to increase their possibilities of winning sustainable tenders from government authorities and businesses.

For the private market, Essent offers Groen voor Gas. Essent supplies conventional gas and then compensates the CO₂ emissions by providing financial support for renewable energy products (generally in developing countries).

**Usage Manager**

The Energy Consumption Manager (Verbruiksmanager) is an online application that offers customers a better understanding of their energy consumption. Customers can use that information to adjust the advanced payments for their energy bills to match the actual energy usage. This helps customers to be more aware of their energy consumption and helps to avoid major differences in their annual settlement bills.

**4.2 Partnership between HIER Climate Campaign and Essent**

In 2011, Essent and the HIER Climate Campaign decided to start working together more closely. Their goal: to increase people’s awareness of energy and the environment. Essent and HIER hope to achieve that this more intensive cooperation will persuade Dutch consumers, businesses, organisations and government authorities:
• to choose Green Electricity even more often;
• to save even more energy;
• to compensate for the remaining CO$_2$
  emissions in a responsible way.

What is the HIER Climate Campaign?
The HIER Climate Campaign is an initiative of more than thirty societal organisations. Its mission is to involve the Netherlands in solving the climate problem. HIER’s approach is practical, solution-oriented and positive. Essent, being the largest producer of renewable energy in the Netherlands, is happy to cooperate.

CO$_2$ Performance Ladder
HIER, in partnership with SKAO, helps to manage the CO$_2$ Performance Ladder and advises Essent on how to optimise products for this Ladder. For example, Windkracht 220 has the lowest CO$_2$ factor on the CO$_2$ Performance Ladder.

In 2009, ProRail introduced the CO$_2$ Performance Ladder for railway engineering projects. The CO$_2$ Performance Ladder encourages businesses to use climate-friendly working and production methods, and offers contractors a competitive edge if they actively work to reduce CO$_2$. 
5. Renewable energy and reduction of emissions: our power stations

We believe that our customers may expect reliable supplies of electricity and gas from us, at affordable rates and with a view to a sustainable future. To strike that balance, Essent invests in developments such as more efficient power stations, biomass and wind energy.

The context within which Essent operates

During the past two years, the European energy sector in which Essent operates has faced dramatic changes that will cast a shadow in the years to come. These changes have a substantial impact on Essent’s parent company, RWE, as one of Europe’s leading energy companies. For example, we have to deal with a drop in prices on the wholesale market for energy, as a result of the economic crisis of recent years. The outcome is that the margins on electricity produced by RWE and Essent will be very meagre until 2014 at least. RWE also has to deal with the political decision in Germany that all nuclear power stations will be shut down in a phased process ending in 2022. The full financial impact is unknown as yet; however, it is certain that it will be significant if no compensation is offered. The consequence of these developments is that we will have less funds to invest during the coming years than in the years before. Nevertheless, Essent will maintain its long-term objectives.

Supplier Obligation

In the Netherlands, the government has also lowered the renewable energy target 14% and declared itself against carbon capture & storage (CCS) on land. Similarly, since the MEP subsidy scheme was cancelled in 2006, it has been unclear whether incentives for large-scale use of biomass will be continued and, if so, in what form. That uncertainty makes it difficult for companies such as Essent to make new investments.

Within the energy sector, Essent is an important initiator advocating the introduction of a Supplier Obligation, as it is known, to replace the old subsidy system. That obligation will make the production of renewable energy more subject to market forces. In the Dutch House of Representatives, agreements have been reached on this subject, which, once they have been detailed, will hopefully lead to new opportunities for growth in the renewable energy sector from 2015 forward. The Supplier Obligation offers possibilities that the current system of subsidies
5. Renewable energy and reduction of emissions: our power stations

Much of the energy that we supply to our customers is produced in-house. We wish to avoid becoming dependent on one type of fuel or one type of power station. Particularly for generating electricity we have a well-balanced production park.

Types of power stations
Essent generates electricity in a number of different ways:
- biomass/coal-fired power stations
- gas-fired power stations
- combined heat and power stations
- small hydro-power stations
- small-scale neighbourhood power stations running on Green gas from fermented cow manure.

Essent’s sister company RWE Innogy also has a number of wind parks in the Netherlands. In our view, this varied mix of power stations and fuel types and the use of wind parks is the best way to guarantee security of supply and the affordability of energy.

High efficiency and sustainable methods
Essent operates each of its power stations optimally, with the highest possible efficiency. That is the most interesting approach in terms of costs, as well as being the most sustainable: higher efficiency means that more electricity is produced from the same volume of fuel, which in turn makes a difference in the emission of CO₂. To achieve our objectives, we choose to build new power stations and modernise the ones we already have. This also fits in with sustainability targets defined by the government.

does not: it is expected that a new subsidy system will allow optimum use of our biomass capacity. That means 35% biomass co-firing by 2020 in Amer 9 and 8, and large-scale use of biomass in Eemshaven.

Under the present government, it appears that few possibilities will present themselves in the Netherlands during the coming years for large-scale investments in offshore wind and wind at sea. Essent regrets this. Together with the use of biomass, the development of five large-scale wind parks will offer a considerable contribution to achieving the CO₂ targets defined. In the countries surrounding the Netherlands, RWE is gaining extensive experience with setting up and operating wind parks at sea. Under the right conditions, that expertise can be used in the Netherlands.

Best practices and synergy benefits
Based on the current developments, in 2011 RWE and its subsidiaries, including Essent, subjected their future income and expenditure to close scrutiny. We made plans in 2011 that will help us prepare for the future. For example, in 2011 the RWE companies launched a project in which RWE businesses in Germany, the Netherlands and England will learn from each other’s best practices and in which they seek out synergy benefits.

5.1 Essent’s power stations: even more efficient
To ensure a proper balance between security of supply, affordability and sustainability during the coming years, Essent has made plans for its power stations. It is our intention to make them run even more efficiently.
5.2 Sustainability targets
As part of an agreement at the level of the EU, the Netherlands is obliged to ensure that by 2020 14 percent of all its energy is generated using sustainable means. Essent believes that the government’s sustainability target can only be achieved by building new wind parks and by co-firing large volumes of biomass in coal-fired power stations.

Supplier obligation for renewable energy
In Essent’s view, an important condition for increasing the proportion of renewable energy is the introduction of the ‘supplier obligation for renewable energy’, a system in which electricity suppliers in the Netherlands are obliged to ensure that a certain percentage of the electricity they supply is renewable. The obligation will mean that suppliers will venture onto the market to purchase green electricity at favourable conditions. In this fashion, the market will determine what forms of sustainable energy generation are the most cost-efficient. The present Cabinet plans to introduce the supplier obligation in 2015.

Continued importance of fossil fuels
As matters stand, the current sustainable production capacity is too small and investments too costly to allow renewable energy to meet the increase in energy demand. In addition, choosing solar and wind energy alone will jeopardise the security of supply, an important pillar in our strategy: the sun does not always shine and sometimes the wind does not blow hard enough. Power stations whose output can be increased or decreased at short notice provide a solution to this problem. The two ultramodern and highly efficient gas-fired power stations in Moerdijk (Moerdijk II) and Maasbracht (Claus C power station) are a good example. Conventional fossil fuels will remain important during the transition to a fully renewable energy supply.

Investments in clean and efficient power stations
If conventional power stations will still be necessary for supplying our future electricity requirements, we have to ensure that those power stations are as clean and as efficient as possible. Based on that principle, Essent/RWE has for several years been investing billions of euros to build new power stations and modernise existing power stations.

5.3 Modernised and newly constructed power stations
In 2011, Essent modernised several of its power stations, to ensure that they are as clean and as efficient as possible. This benefits the environment and is a good way to cut costs, and as such reflects our strategy.

Essent put the Claus C power station in Maasbracht into operation in 2011. This former Claus B power station underwent a complete modernisation and expansion in the preceding years, and now has a generation capacity of 1,300 megawatts and an efficiency of 58 percent. The old Claus power station operated at 40 percent efficiency. This means that we are generating much more electricity from the same volume of gas.

New Moerdijk power station
Essent’s Moerdijk 2 power station became operational in 2011. This new power station features an ultramodern combined gas and steam turbine with a maximum capacity of 430 megawatts and an efficiency of 58 percent.
Plans
Essent has plans to fully modernise the Claus A power station too. We also intend to improve the efficiency of the Moerdijk 1 power station and the Swentibold power station in Geleen.

5.4 Essent and heat
Besides electricity and gas, Essent supplies customers with heat. Here, too, energy saving is an important factor for us. That is why we offer not only energy-saving products, but also efficient local heat solutions for use in the built-up area, specifically designed for new and existing housing.

Combined generation
In Essent’s combined heat and power stations, we convert natural gas into electricity and heat. That combined generation is more efficient than producing steam and electricity separately. The energy efficiency can be as high as eighty percent. Essent has several power stations built specifically for generating heat and electricity. Those power stations are located close to major commercial customers such as DSM in Geleen and Shell in Moerdijk. Smaller co-generation are located near horticultural businesses, for example. Essent’s combined heat and power stations do not only supply heat: together they represent around forty percent of Essent’s electricity production.

Heat grids
Essent’s heat grids together heat over 70,000 homes. Essent also supplies heat directly to customers such as factories and greenhouses. Essent is developing heat grids for new and existing housing. In 2011, investments in new development in the housing market saw a further drop. However, housing associations made large investments to renovate existing buildings in inner-city areas during 2011. That development reflects the ambition of those housing associations to increase the energy efficiency of homes. Heat from heat grids offers an attractive way to improve the homes’ energy performance levels. For the heat sector – and therefore for Essent – this means a greater focus on increasing the number of users of existing heat grids.

The role of policymakers in relation to renewable heat
Policymakers are also beginning to understand that greater sustainability is needed in order to reach the sustainability targets. That is why heat has now been made an integral part of the SDE+ subsidy scheme. Until recently, the SDE+ subsidy scheme was aimed primarily at electricity supplies. Now the government is also offering subsidies for renewable heat. This presents opportunities for Essent. However, we will have to overcome a number of obstacles first.

Energy Label
For newly built homes, the heat supplied from the heat grid is used as a factor for determining energy performance. However, existing buildings use the Energy Label system, which does not yet factor in heat from heat grids. This presents an obstacle to realising a more efficient energy infrastructure. In 2011, Essent joined forces with various municipal authorities, the Association of Energy Companies in the Netherlands and the Dutch Construction and Infrastructure Federation to initiate a dialogue with the Ministries of the Interior and of Economic Affairs, Agriculture and Innovation. The aim of that dialogue was to have this system changed in the applicable laws and regulations.
5. Renewable energy and reduction of emissions: our power stations

Organisation of the heat infrastructure
Another topic of conversation in that ongoing dialogue concerns another item in the 2011 Dutch Building Decree (Bouwbesluit), which provides that the present practice of municipal authorities being allowed to pursue their own climate policies and translate those policies into an obligation to be connected to the heat grid will be abolished. This jeopardises the profitability of heat supplies and as such the possibilities for improving the efficiency of those heat supplies.

Heat Act
The Ministry of Economic Affairs, Agriculture and Innovation revised the Dutch Heat Act (Warmtewet) in 2011 and published the amended version. The principal improvement compared with the old legislative proposal (dating from 2009) is that it includes clear-cut arrangements about the rates that consumers are to be charged for heat. The House of Representatives will discuss the legislative proposal in 2012. Essent began preparing for the implementation of the Heat Act in 2011.

Heat exchange
An important development in 2011 was the process of increasing awareness in the energy sector and among municipal authorities of the potential of heat exchange on industrial estates. Essent also recognises that potential. That is why we are now actively making our expertise and experience available to various studies and policy taskforces to ensure that heat exchange will be a viable option in the near future.

5.5 Nuclear energy: nuclear power station in Borssele
As a shareholder, RWE/Essent is a stakeholder in the nuclear power station in Borssele. In October 2011, Essent’s former shareholders and energy companies Delta and RWE signed an agreement about the allocation of the shares in the Borssele nuclear power station. Since then, Delta has owned seventy percent and RWE thirty percent of the shares.

No second nuclear power station for the present
The agreement between Essent’s former shareholders and energy companies Delta and RWE provides that RWE/Essent may participate in a new nuclear power station, if one is built. However, on 23 January 2012, Delta and RWE announced that the plans for a new power station had been put on hold for the foreseeable future. The reasons given were that the crisis has caused overcapacity on the electricity market, leading to lower energy prices; that the climate for investments has deteriorated; and that the policy for tradable rights for CO₂ emissions is surrounded by uncertainties. As a result, all plans have been put off for the present.

Nuclear energy: safety, affordability and social acceptance
Safety, affordability and social acceptance are important considerations for Essent in connection with nuclear energy. Following the nuclear disaster in Fukushima in Japan in March 2011, official inquiries were conducted to examine the safety aspects of all European nuclear power stations. The findings of the European Complementary Safety margin Assessment (CSA) show that the power station in Borssele is better prepared for all foreseeable and unforeseeable events than is required.
5.6 The Eemshaven power station

Near the Eemshaven seaport, Essent is building a new coal/biomass-fired power station, one of the most modern and efficient of its kind in the world. It has a capacity of 1,600 megawatts and an efficiency of 46 percent. The power station will help ensure an affordable and reliable energy supply in the Netherlands and is important to the modernisation of the Dutch energy supply and the reduction of emissions.

The power station in the Eemshaven seaport uses Ultra Super Critical boilers for firing fuel. Those boilers can sustain high temperature and pressure levels, creating an efficiency of 46 percent, which is very high compared with older power stations. This high efficiency means that the power station needs less fuel to produce the same amount of energy. As a result, the Eemshaven power station is much cleaner and cheaper than older power stations. This makes the new power station very important for the modernisation of the Dutch energy supply. The first phase of the Eemshaven power station is scheduled for completion in 2013. Phase two is scheduled for 2014.

Modern energy supply

The power station’s output can also be increased or decreased at short notice. The power station has almost the same level of flexibility as a gas-fired power station. This is a very useful feature in combination with wind energy, for example. In strong winds, when the wind turbines generate large amounts of energy, output at the Eemshaven power station can be decreased quickly. Conversely, the power station offers a reliable and affordable supply of electricity for when there is no wind or if the sun is not shining. With this flexibility, the new power station is perfect for a modern energy supply, in particular because it also offers the option of co-firing biomass on a large scale and for CCS (CO₂ capture & storage) and as such gives shape to the transition towards a more renewable energy supply.

RWE/Essent as a regional partner for sustainability

With the construction of a power station that will last for decades, RWE/Essent has as it were put down roots in the region. As such, RWE/Essent will not shirk from its responsibilities and is boosting a large number of regional developments. For example, we are working with local authorities to expand the possibilities for electric transport, to build a heat grid and smart grids, and numerous other initiatives.

Economy and jobs

The Eemshaven power station will have a major impact on the region’s economy and employment. In 2011, an average of 2,500 workers per day were on the Eemshaven power station construction site. RWE/Essent sets great store by a safe and healthy workplace. We attach a great deal of importance to our structural consultations with the Labour Inspectorate and authorities such as the regional fire services. To better monitor compliance with terms of employment and working conditions, we signed a covenant with the FNV Eemshaven union in 2011, in which compliance with labour laws and regulations by the contractors and subcontractors that we engage takes up a prominent position.

Jobs and activity

Once the power station becomes operational, it will offer direct employment for more than 130 people. Many hundreds more jobs will be created
with RWE/Essent’s suppliers, technical service providers and logistics partners. Our presence in the region will also boost adjacent activities and so create indirect employment, for example in the hotel and catering sector.

**Job fair**

In short, RWE/Essent’s Eemshaven power station and its sustainability activities will offer a tremendous contribution to employment in the Eems delta. As such, we believe that a sound relationship with the Employee Insurance Administration Agency (UWV) will be very important, both for our own recruitment purposes and for the region. We will make sure that our job openings are also advertised in the regional channels, and we are working together to organise events. For example, in 2011 we organised a large job fair near the Eemshaven power station, in partnership with the UWV and other parties. More than 1,500 visitors to that job fair learned about the almost 800 job openings at RWE/Essent and dozens of other regional businesses.

**Lift project**

We are particularly proud of the ‘lift project’ that we have launched in partnership with security firm Trigion and social work experience organisation Ability. This project has already provided jobs as lift operators in the Eemshaven power station for fifty people with relatively difficult access to the labour market. They make sure that all workers at the power station can use the lifts safely and without encountering any delays.

**Knowledge and innovation**

With the Eemshaven power station, Essent is also contributing to knowledge and innovation. RWE/Essent is one of the founders of the Energy Valley Top Club, an alliance between businesses, government authorities, knowledge institutes and NGOs in the north of the Netherlands. The Energy Valley Top Club plays an active part in exchanging knowledge relating to energy. For example, we have earmarked 1 million euros to support PhD projects of several young university
researchers and we are playing an active role in the concrete implementation of provincial energy policies.

### Nature and the environment

The Eemshaven power station is being built with due consideration for nature and the environment. With this in mind, RWE/Essent will continue to be active in the north of the Netherlands during the decades to come. Together with a number of other parties involved, for example Groningen Seaports and Nuon, we have invested substantial sums to develop new nature areas.

#### Investments in nature

For example, by buying out shrimp fishers, we have created a quiet area of five thousand hectares in the Eems-Dollard region. As a result, sea mammals in the ‘nursery’ of the Wadden Sea are disturbed much less. RWE/Essent has also arranged for a large foraging and breeding area of more than 70 hectares for birds and other wildlife. Measures are also being implemented on the islands of Ameland and Schiermonnikoog that will contribute significantly to the recovery and management of the ecological features on the islands and consequently in the Wadden Sea area.

#### E-pact

We have also been working together with nature and environmental organisations since 2009 under the ‘E-pact’, in which the parties involved have made arrangements to ensure that joint economic and ecological developments go hand-in-hand more. Through exchanges of knowledge, a constructive dialogue and joint implementation of specific projects, we are laying the foundations for a lasting partnership between businesses and nature and environmental organisations.

### Sports and culture

Essent is also contributing to the region surrounding the Eemshaven power station in terms of sports and culture. In 2011, Essent became the main sponsor of FC Groningen football club, helping the club and the stadium to become sustainable and to become the greenest football club in the Netherlands. In 2011, FC Groningen already made tremendous cuts in its gas and electricity usage (130,000 m³ and 200,000 kWh, respectively). The football club has switched to sustainable contracts for Essent’s Green gas and Windkracht 220 wind power.

#### RWE Cultural Foundation

Lastly, RWE/Essent sponsors dozens of large and small cultural activities in the region, and has set up the RWE Cultural Foundation for this purpose. The structure and way of participation mean that the Cultural Foundation offers a broad and far-reaching boost to regional cultural developments. Examples of cultural activities that we sponsored in 2011 include the ‘Op Roakeldais’ dance event and the Noorderzon theatre festival in the Noorderplantsoen park.

### 5.7 The origins of coal

The Eemshaven power station will use coal as its fuel source, as does the Amer power station. RWE Supply & Trading procures the coal for our power stations. Like Essent, RWE has joined the UN Global Compact. All business contacts and operations of Supply & Trading are subject to the RWE Code of Conduct, in which the principles of the UN Global Compact are the most important guideline.
Counterparty Risk Assessment
Parties with which RWE Supply & Trading does business are subjected to a ‘Counterparty Risk Assessment’: a lengthy checklist covering issues such as environmental awareness, social conduct and credit rating. RWE has the opportunity to visit its business partners and the relevant sites to verify the information supplied.

Coal dialogue
Because Essent feels that it is important for all the parties involved to take their responsibilities in the coal value chain, Essent is a participant in that Dutch coal dialogue. Through its parent company, RWE, Essent also takes part in the European coal dialogue Better Coal, which was launched in 2011 (see chapter 13.1).
6. Renewable energy and reduction in emissions: biomass and the biobased economy

Biomass is the most important renewable source of energy for Essent. We believe that large-scale use of biomass is the only way to achieve national and international sustainability targets. Essent is one of the world leaders in this field and has many years of knowledge and experience.

Replacing coal by biomass for generating Green Electricity is currently one of the most cost-efficient forms of renewable energy. Moreover, using biomass offers an efficient way to reduce CO₂. That is why Essent frequently uses biomass.

**Biomass: organic material**

Biomass is the collective term for all manner of organic material such as wood, fat, deep-frying oil and sewage sludge. Because the CO₂ that escapes when these materials are combusted is part of the Earth’s natural short CO₂ cycle, these materials are called renewable fuels. The biomass that Essent uses for generating electricity consists of wood pellets.

**Largest producer of renewable energy**

Essent is the largest producer of renewable energy in the Netherlands. That position is thanks to our wind parks, but also to the large-scale replacement of coal by biomass in the Amer power station in Geertruidenberg. Essent is one of the world leaders in this field and has many years of knowledge and experience.

**Co-firing biomass**

At present, we replace on average around 33 percent of the coal in Unit 9 of the Amer power station by biomass. In 2012, Essent’s permits were finalised for modifying the power station to allow us to significantly increase the percentage of sustainable biomass. Successfully conducted tests show that it is possible to co-fire fifty percent biomass.

**Eemshaven power station**

Once the Eemshaven power station in Groningen Province becomes operational, we intend to co-fire a substantial volume of biomass there too. When the contractor hands over the new construction, the power station will be ready for a 10% biomass co-firing. Essent has plans to modify that power station too to allow us to co-fire much larger volumes of biomass.
6. Renewable energy and reduction in emissions: biomass and the biobased economy

6.1 Biomass made from wood pellets

The wood pellets that Essent uses for generating electricity are mostly from the USA (Georgia) and Canada (British Columbia). The wood pellets from Georgia that Essent uses for fuel are made from the clean wood of fast-growing coniferous trees from production forests. Those trees absorb CO₂ as they grow, which is released when the pellets are combusted in the biomass-fired power station. This is a short CO₂ cycle, and the whole chain is therefore almost CO₂-neutral. After the wood is harvested, it is shredded, dried, and compressed into cylindrical pellets. Because this process removes most of the water from the wood, the volume is significantly diminished, which in turn is an advantage during transportation.

Wood pellet factory in Georgia

In 2011, RWE Innogy, a sister company of Essent, opened the world’s largest wood pellet factory in Georgia. The factory has a production capacity of around 750,000 tons of wood pellets per year. Much of that production is shipped to the Netherlands, where the wood pellets are co-fired in the Amer power station. The first wood pellet ship arrived in the harbour of Dordrecht in July 2011.

New application for fir tree plantations in Georgia

The US State of Georgia has an estimated ten million hectares of forest. Approximately 27 percent of that forest consists of plantations of coniferous trees. Thanks to the subtropical climate of the Southern USA, wood grows faster there than in areas such as Scandinavia or Russia. When the demand on the market for wood for paper dropped, producers went in search of new applications for the wood from the plantations. The wood pellet factory provided the solution.

Green Gold Label

The US State of Georgia has detailed guidelines for sustainable forest management, to which the local forest owners adhere closely. The wood that RWE Innogy uses is compliant with the standards of the Green Gold Label, which is based on the international forestry standards of FSC, PEFC and other organisations. In 2011 almost 96 percent of the imported wood pellets that Essent co-fired in the Amer power station were certified in accordance with the Green Gold Label standard, meaning that the origins of the wood are known and that sustainability is ensured. No protected forests were cleared for the wood, and a new tree is planted for each tree that is cut down. Essent’s goal is to co-fire one hundred percent certified wood pellets by 2015.

Pellets from British Columbia

Essent also uses biomass from the forests of the Canadian Province of British Columbia. Every year, the administration of British Columbia releases parts of those forests for logging. The wood that is cut down is used primarily in the production of timber and paper. Parts of the residual flows that are not suitable for those purposes are dried and compressed into wood pellets for bio-energy. No fossil fuels are used in the drying process, but the same sustainable residual flows. In some instances, trees from forests harmed by mountain pine beetle are used for energy purposes. Those forests are released for logging by the authorities because most of the trees are already dead. Cutting them down and replanting the forest with appropriate species speeds up the recovery to new and healthy forest.
British Columbia has highly developed rules for sustainable forest management under the supervision of the government, as the owner of 95% of the forestland. By far the majority of those forests are also certified according to one of the voluntary certification systems CSA, FSI (both of which are PEFC-accredited) or FSC.

**Biocoal**

To increase the efficiency of the wood used, RWE Innogy is working together with Topell Energy in Duiven, the Netherlands, to develop an industrial process for torrefying biomass. Torrefying involves heating biomass in a hermetically sealed space to give it the properties of coal: a high energy density and highly uniform combustion properties. Unlike other forms of biomass, this biocoal, as it is commonly known, can be transported and stored together with ordinary coal and is highly suitable for co-firing in coal-fired power stations. Topell is expected to commence its supplies to Essent sometime in 2012.

6.2 Study into the impact of biomass on the climate

In 2010 and 2011, environmental groups argued that using biomass for energy purposes is not a good solution for climate change due to CO\(_2\) emissions. This because the forests need to regrow, taking around a hundred years before CO\(_2\) reductions result and because transporting biomass to Europe would counteract the CO\(_2\) benefits. Concerns were also expressed about the possible harm to nature. Essent takes the sustainability of using biomass extremely seriously. We started developing the Green Gold Label in 2002 to safeguard sustainability. We have also conducted various studies into the CO\(_2\) balance of imported biomass. It is an extremely important matter for Essent because of our large-scale use of biomass in order to achieve very substantial CO\(_2\) reductions in the period until 2050. That is why we asked Utrecht University to conduct a study into these specific concerns as expressed by NGOs and into their relevance.
for the biomass from Georgia (USA) that Essent uses. We also visited British Columbia in Canada to talk to the authorities there.

**Conclusions regarding Georgia**

Based on the study, the researchers at Utrecht University concluded that the CO₂ pay-back time is much shorter (10 to 20 years) on the plantations of very-fast-growing pine trees in Georgia than the hundred years from previous studies into northerly forests. More importantly, they also concluded that the concept of CO₂ pay-back time is in fact irrelevant here, as this region has been used as production forest for decades. No extra wood is being harvested for bio-energy. Rather, the harvest is given another purpose: bio-energy instead of paper. It is also important to bear in mind that sustainable forest management ensures that sufficient forestland is always in different stages of growth (binding carbon) for each hectare that reaches the age for harvesting. In this way, stocks of carbon in the forest remains at a constant level.

**CO₂ emissions from transport**

Secondly, this study confirmed our earlier calculations that the CO₂ emissions from transporting the biomass to Europe only represent a fraction of the emissions saved by not using coal. Considering all CO₂ emissions in the entire chain from planting the trees to burning the wood pellets, including indirect emission of, for example, fertiliser production, the reduction is approximately 80% compared with the use of coal. It is therefore a misconception that transport over the ocean nullifies the usefulness of biomass as a fuel source.

**Production forest as strategy against climate change**

Fast-growing American production forests can be a good way to prevent climate change. In the South-Eastern United States the wood production per hectare is much higher than in for example the Netherlands or Scandinavia. Using biomass to replace coal is a much more effective way of reducing CO₂-emissions than simply leaving the production forests unmanaged. This was confirmed by the researchers in their conclusions. Once trees mature, their growth slows down and they absorb less and less CO₂ from the atmosphere. In addition, forest fires always present a risk of extra CO₂ emissions. For purposes of CO₂ reduction, it is more effective, even much more effective, to use the forest for bio-energy, adopting sustainable methods. In that scenario, the forest will repeatedly go through its maximum growth phase and absorb the maximum amount of CO₂ from the atmosphere, while using the biomass for energy avoids emissions from coal. It would be a sensible policy to increase the productivity of the forestry industry using sustainable methods to allow for higher production of biomass without needing to use new land. On the subject of harm to nature, the study reported a high level of compliance in the Southeast USA with local best practice guidelines for forest management.

**Situation in British Columbia**

The second important source of our biomass is British Columbia. We have recently contracted Utrecht University to examine CO₂ pay-back for that area. We also visited Canada at the beginning of 2012 and spoke with wood-pellet producers and the responsible government officials. Based on the information currently available to us, no
additional logging of healthy forest is involved, since our wood pellets only originate from residual flows from the wood and paper industries and from stands which have been badly damaged by mountain pine beetle infestation. Here, too, transport to Europe represents a relatively small part of the total avoided coal-emissions so that, despite the long ocean voyage, this biomass still results in a substantial CO₂ reduction. British Columbia has strict regulations for sustainable forestry under supervision of the provincial government, the owner of 95% of the forest land. A very large proportion of the managed forest area is also certified under the voluntary forest management schemes CSA, FSI or FSC. Protection of wildlife and ecosystems is one of the aspects of these regulations and voluntary schemes. The certification schemes also form the basis for Green Gold Label certification of the wood pellets Essent imports.

Essent conclusion
The study by the University of Utrecht and our visit to Canada give us confidence that the biomass Essent uses does in fact help in the fight against climate change and that in these regions sufficient regulations and voluntary systems are in place to protect nature. Due diligence remains essential and we will continue to work on further developing the Green Gold Label standard and on further research. We support the researchers of the University of Utrecht in their intention to publish a scientific paper to enable peer review and discussion of their conclusions.

6.3 RWE’s sustainable biomass guideline
In 2011, RWE drew up a sustainable biomass guideline. That guideline sets out a series of principles for the entire value chain of sustainable biomass used for generating energy, from when it is being grown to the moment it is fired.

RWE supports and promotes biomass as a fuel with a great potential for renewable energy production and reduction of CO₂ emissions. To avoid any negative side effects, RWE has drafted a clear policy, which it adopted in 2011 as a guideline for all businesses in the RWE group. Alongside RWE’s sustainable biomass guideline, Essent’s Green Gold Label exists as a means to ensure sustainability in practice.

Principles in the sustainable biomass guideline
The principles of RWE’s sustainable biomass guideline are as follows.

- RWE will only use biomass if that use does not have any negative impact on people, society or the environment.
- RWE seeks to ensure that the biomass it uses for generating energy contributes significantly to the protection of the climate.
- RWE guarantees that the RWE Code of Conduct is applied throughout the entire biomass value chain.
- RWE seeks to apply the principles of the UN Global Compact to the entire biomass value chain. Specifically, RWE respects human rights as laid down in the United Nations Declaration of Human Rights, in particular with regard to issues concerning labour, economic and social rights and the right to a clean living environment. RWE also rejects corruption and bribery.
- RWE will consult and notify stakeholders in the vicinity of RWE locations and power stations regarding any relevant developments.
RWE will report on the sustainability of the biomass it uses in the Corporate Responsibility report it publishes.

Any biomass that RWE procures for third parties is subject to the same conditions as the biomass that RWE procures for its own use.

Additional principles of the sustainable biomass guideline
RWE has also defined additional principles for the cultivation and production of biomass. RWE businesses and suppliers will only use biomass that:

- does not pose any risks for local food production;
- does not pose any risks for endangered ecosystems;
- does not cause permanent harm to the environment, in particular soil, water or air;
- does not pose any risks for regional water supplies in the case of irrigation;
- does not pose any risks for the prosperity and wellbeing of the local populace.

6.4 Origins and certification of biomass
Most (96 percent in 2011) of the imported wood pellets that RWE procures are certified according to the Green Gold Label standard. That means that it is clear what the origins of the biomass are and that their sustainability is ensured. Not all consignments of biomass can be certified: sometimes the volume is too small or the origins are too diverse. This mostly concerns thinning wood from the Netherlands, used wood or torrefied wood. Torrefied wood is biomass that has been heated in a hermetically sealed space to give it the properties of coal: a high energy density and highly uniform combustion properties.

Targets focused on imported biomass
Essent has focused its numerical targets for the sustainability of biomass on imported biomass that has been compressed into wood pellets. We feel that this choice is justified on the grounds that uncertainties surrounding sustainability and origins are mostly a matter arising outside the Netherlands.

Green Gold Label
No less than 96 percent of the wood pellets imported in 2011 were certified according to the Green Gold Label standard or equivalent. Our goal is to increase that rate to one hundred percent by 2015. Another of our goals is to ensure the sustainability of all biomass flows as much as possible, even if this cannot be done using the Green Gold Label.

Jacqueline Cramer
In January 2012, Professor Jacqueline Cramer, former Minister of Housing, Spatial Planning and the Environment, was appointed Chair of the Green Gold Label Foundation. Under her leadership, our goal is to have the Green Gold Label become fully independent from Essent and develop into the leading, independent and widely accepted certification programme for sustainable biomass in Europe.

6.5 Open day at the Amer power station: biomass as the theme of the day
Every four of five years, Essent organises an open day at one of its major production locations.
The honour fell to the Amer power station in Geertruidenberg in the weekend of 10 and 11 September 2011.

Almost three thousand visitors attended the event. The purpose of the open day was not only to allow visitors to see the power station, but also to teach them about biomass in all its aspects. Over the past ten years, the Amer power station has been a pioneer in the field of co-fired biomass in Europe. That is something to be proud of.

Visitors from all parts of the Netherlands were welcomed at Europe’s largest biomass co-firing power station. Since most of the visitors were very enthusiastic about the open day, Essent will continue to organise open days at its major power stations in the future.

6.6 Essent: pioneer of the biobased economy

As a major user of biomass, Essent is one of the pioneers of the biobased economy (BBE) within the ‘Energy’ top sector of the Netherlands. The BBE is an economy in which fossil fuels and raw materials are replaced by biomass as much as possible and in which different successive sectors make optimum use of that biomass. This process is known as cascading.

The biobased economy is necessary because:

- fossil fuels are becoming scarcer and will eventually be depleted;
- using fossil fuels increases the concentration of greenhouse gases in the atmosphere;
- biomass is climate-neutral;
- biomass is in theory an inexhaustible commodity;
- new technologies can be used to increase the efficiency of biomass compared with the present situation, and so to optimise the cost of biomass.

The Netherlands as a BBE country

The Netherlands is perfectly suited for a biobased economy because:

- the Port of Rotterdam offers an ideal logistics hub for the BBE;
- the Netherlands has a large chemical industry;
- the Netherlands has an innovative and effective agricultural sector;
- the Netherlands has knowledge institutes that are among the best in the world.

BBE manifest

On 29 September 2011, Essent and other representatives from the business sector and civil society signed the manifest for the Biobased Economy. Parties from civil society and the Dutch business sector sought each other out in order to define shared principles for this important development and to act together where possible. The resulting manifest is a statement of intent that the realisation of a biobased economy in the Netherlands will be supervised and supported as efficiently as possible.

High-grade raw materials

Biomass contains all manner of high-grade raw materials, for example sugar, starch, oil and fats. It also contains proteins, amino acids, fibres, salts and organic compounds. All these substances can be used to make valuable products. The residual substances serve as a good fuel for generating renewable energy.
Biorefining and cascading

Before all those valuable raw materials can be extracted from the biomass, they first need to be broken down in a process known as biorefining. This technique is currently still in the experimental phase. Biorefining consists of multiple steps in which useful substances are extracted from the biomass. The residual flows from one process might be usable by another industry (cascading). In decreasing order of added value, biomass can be a source for the pharmaceutical industry, the food industry, the chemical industry and the paper and textile industry. The residues can serve as fuel for the transport sector and power stations.

Sustainable and economic

Using low-grade biomass for generating electricity is important in the biobased economy, since the energy sector requires increasing volumes of biomass. Because of those large volumes, refining the biomass is an interesting option. Using the valuable substances extracted in the refining process means that biomass will eventually also be economic as fuel for power stations. Multiple parties will profit from the biomass supply chain; this means that they can share the costs. This will be based on a model in which the margins earned in the separate stages of the supply chain form the basis for allocating the costs in the final spread for all parties participating in the biomass supply chain. At present, the use of biomass depends on government subsidies. However, by sharing knowledge and experiences with other sectors with an interest in biomass and by conforming to the concept of a biobased economy, we hope to make the use of biomass economic in the longer term.

Wood Buyers Initiative

A necessary condition for economic use of biomass is international uniformity regarding the criteria for ensuring the sustainability and origins of the biomass. Besides the factor of sustainability, this is also a defining condition for effective international trade in biomass and for minimising the supply of biomass. That is why Essent has launched the ‘Wood Buyers Initiative’, together with other major buyers of biomass. This platform devotes itself to creating an internationally uniform certification standard for biomass. The principles of the Green Gold Label standard for biomass – which Essent introduced in 2002 together with Control Union Certifications – are an important source of inspiration in the creation of this certification standard.

Natural Power brochure

The brochure Natural Power provides more information about Essent’s views on the biobased economy (see www.essent.nl for more information).

6.7 Study into and experiments with biorefining

Biorefining is a necessary element in the realisation of a biobased economy. The technology for biorefining does not yet exist, however. Current expectations are that biorefining will be used on a large scale within ten to fifteen years. However, until then, substantial investments will have to be made in research into innovative technologies. Essent believes that this will only be possible if the parties involved join forces and share their ideas.
Essent and BE-Basic

One of the initiatives for realising more cooperation is BE-Basic, an international public-private partnership set up by Delft University of Technology and funded by the Ministry of Economic Affairs, Agriculture and Innovation. Essent joined the initiative in 2011. The mission of BE-Basic is to develop biobased industrial solutions for a sustainable society.

Bio-power station in Cuijk: testing biomass

In 2011, Essent made preparations to restart the bio-power station in Cuijk in 2012 for testing different types of biomass, such as grasses, paper pulp, used wood and chippings from pruning wood. A study will also be conducted in Cuijk into more optimum use of biomass for the biobased economy. Until 2011, the bio-power station in Cuijk produced electricity using chippings from wood and prunings from the woods owned by the Dutch State Forest Service, off-cuts and sawdust from the wood industry and elsewhere. However, the government discontinued the subsidies, forcing Essent to temporarily decommission the power station and develop a new strategy for it.

Green Deals

Essent is developing the innovative new project at the bio-power station in Cuijk as a Green Deal. Green Deals are agreements between the government, businesses and organisations to make the Dutch economy greener and more sustainable. On 3 October 2011, Minister Verhagen of Economic Affairs, Agriculture and Innovation signed 59 Green Deals. Essent is involved in various Green Deals, including the ‘Bio Gas XL’ projects.

Bio Gas XL projects

In 2011, Essent qualified for another Green Deal. Together with FrieslandCampina and the Dutch Green gas Company, Essent is realising manure fermenting systems at two cattle farms to produce biogas and convert it into liquid form. The biogas will then be used as fuel for the transport sector. Under the Green Deals, the government will shorten and simplify the licensing process. If the Bio Gas XL projects prove successful, another 125 will be realised at various locations throughout the country during the coming years. Essent is certain that the greatest potential for biogas in the Netherlands can be found on farms. It is important to make optimum use of that potential.

6.8 Second Essent International Biomass Conference

If we are to realise a biobased economy, it is vital that the parties involved share their knowledge and experiences about biomass. That was one reason why Essent and RWE Supply & Trading organised the second International Biomass Conference in 2011. On 2 and 3 November 2011, representatives of government authorities, businesses, knowledge institutions and NGOs met at the Amer power station in Geertruidenberg to exchange knowledge and experiences.

Sustainability of biomass

The theme for Day One of the biomass conference was co-firing biomass on a large scale in coal-fired power stations. Experts from other energy companies, government authorities, knowledge institutions, large industries and NGOs from all over the world were convinced that co-firing biomass is only responsible if the biomass, its trade and its transportation are sustainable. All
those aspects are ensured if the biomass meets the principles of the Green Gold Label standard.

**Embracing biomass**
Essent had organised a first biomass conference in 2009. At the time, Essent adopted a transparent approach by sharing its years of knowledge and experience with others. This time, in 2011, all present shared their knowledge and experiences on the subject of co-firing biomass. This demonstrates that a large proportion of the energy sector and the world in which the sector operates have embraced biomass. Of course it also shows that developments occur at a rapid pace.

**Next step: making biomass profitable**
The conclusion on Day One was that the concept of co-firing biomass has a broad basis of support in society, and that the next step must be to make biomass more economic and so reduce the dependence of energy suppliers on support measures. Hopefully this theme can be examined in more detail in 2013, when Essent will in all probability organise another biomass conference. Possible questions to put forward then include:

- How do you make the use of biomass profitable in economic terms?
- What does it cost to modify systems to be able to cope with co-firing biomass on a large scale?

**Biobased economy**
The theme for Day Two of the biomass conference was the biobased economy (BBE). This was a new topic for many of the visitors. Many participants had come to the conference to learn about the concept of a BBE. What is it? What can we do with it? Representatives from the Port of Rotterdam, DSM, Van Gansewinkel Groep and former Prime Minister Ruud Lubbers explained what opportunities and possibilities the BBE offers.

**6.9 Essent to organise the annual UN Global Compact Conference**
Essent has been actively involved in the UN Global Compact (UNGC) since 2007. On 24 April 2012, Essent, in partnership with RWE, will host the annual Dutch UN Global Compact Conference. Preparations for that conference began in 2011. The theme for the conference will be ‘The Green Economy’. The working title for the meeting is The Green Economy - Business contribution to securing environmental sustainability

**Rio+20**
The theme for the annual UNGC Conference is a taste of what the Rio+20 Conference in Rio de Janeiro in June 2012 will offer. One of the principal themes there will be sustainable development, with a focus on a green economy. At that third global summit conference - twenty years after the first one - representatives from UN Member States will look back on the results that have been achieved in connection with the Millennium Development Goals.

**Green economy best practices**
The road to Rio+20 is attracting a great deal of attention in the Netherlands. Dutch representatives are currently selecting ten inspirational ‘green economy best practices’ and ten recommendations, which they will present at the Rio+20 Conference. The best practices and recommendations will be presented and discussed at the conference.
International agenda

The theme, ‘The Green Economy’, matches our expertise in the field of biomass and reflects the international agenda. That international agenda also offers a good opportunity to invite the German UNGC network to take part in the conference. As a member of the German UNGC network, RWE will be helping Essent to host the event.
7. Renewable energy and reduction in emissions: wind energy

Combined with large-scale co-firing of biomass, wind energy can contribute significantly to the energy transition and the realisation of a renewable energy supply in the future.

Following Essent’s acquisition by RWE in 2009, the responsibility for Essent’s wind-related activities passed to RWE Innogy. However, we sell that company’s wind energy under Essent’s name in the Netherlands and Belgium. RWE Innogy is making substantial investments in the development and innovation of wind energy all over Europe. RWE Innogy owns a number of wind parks throughout the Netherlands and Belgium, which we aim to use to supply as many households as possible with green electricity.

7.1 Wind on land

RWE Innogy has twelve wind parks on land in the Netherlands, located in the provinces of Groningen, Flevoland and Noord-Brabant. The Westereems wind park (Eemshaven seaport) is the largest wind park on Dutch soil, with a capacity of 156 megawatts. In total, we annually supply around 490 million kilowatt hours of renewable energy: enough to supply more than half the households in Groningen Province with green electricity. Wind on land was the subject of a number of discussions in 2011.

Essent and the wind turbine park in Urk

Essent was one of the initiators for the construction of a wind turbine park in the Noordoost Polder, near Urk. That project was transferred to RWE Innogy. On 8 February 2012, the Dutch Council of State gave the project the green light. As with many plans for wind parks on land, this resulted in a discussion with local residents. RWE Innogy always enters into an active dialogue with stakeholders to talk about any objections. The situation in the Noordoost Polder nicely illustrates the direct to discuss objections. The situation in the Noordoostpolder clearly illustrates the problems attached to wind on land in the Netherlands: we support the concept of wind energy, but nobody wants a wind turbine in their backyard.

Spatial policy regarding wind parks

Other issues surrounded the question of wind energy in 2011. For example, Essent/RWE is in favour of concentrating wind turbines in a small number of locations throughout the country in order to generate wind energy on a large scale.
We believe that this is more efficient than dotting the whole country with wind turbines. The government should designate areas for such large-scale wind parks, to make it clear in the short term to everyone involved, both local residents and investors, where new wind turbine parks will and will not be built. This process is currently underway. It is high time, too, as the Green Deal between the Association of Energy Companies in the Netherlands and the Ministry of Economic Affairs, Agriculture and Innovation calls for 6,000 MW on land by 2020.

7.2 Wind at sea

In European terms, RWE Innogy is one of the major investors in wind at sea. However, the costs of wind at sea are high. To make the construction of wind parks at sea profitable, the costs have to be reduced substantially. The Far Large Offshore Wind programme (FLOW), of which RWE Innogy is one of the initiators, centres on a series of innovations that can help reduce those costs. RWE also holds a 25% share in the 326 MW C-power wind park off the coast of Belgium.

Construction of a meteorological mast

RWE Innogy believes that wind at sea is an important area for growth. Moreover, the construction of wind turbine parks at sea will be necessary in order to achieve the European sustainability targets by 2020. In 2011, as part of the FLOW programme, RWE Innogy set up a hundred-metre-high meteorological mast 75 kilometres off the coast near IJmuiden. The mast is full of equipment for measuring wind speed, temperature, humidity and wave height. RWE will use the results of the measurements for the construction of the Tromp wind park at that location in the future.

Construction of super turbines

RWE is gaining experience on land with building and operating wind turbines at sea. At present, RWE is developing two offshore wind turbines near the Westereems wind park in the vicinity of the Eemshaven seaport. Each of those wind turbines has a capacity of around 6 MW: more than twice the capacity of an ordinary land-based wind turbine and half again as much as the
average wind turbine at sea. RWE sees this as a reference project for the Nordsee Ost offshore wind park in the German part of the North Sea, thirty kilometres out from Helgoland.

Role of the government
The government can also help to reduce the costs of wind energy at sea. For example, it prevented the destruction of capital by renewing existing permits for wind at sea, which were set to end in 2012, until 2020, on the grounds that a great deal of time and effort had already been put into the preparations for and submission of the permit applications. It is also important that the government, in cooperation with the wind sector, take the initiative in bringing down the costs of wind at sea. The government and the wind sector are currently working together to develop policies for innovation to help reach that goal. The government also has another possibility for reducing costs through joint environmental impact studies and safety studies into distances to shipping lanes. A sound innovation policy and prospects for as far ahead as 2020 offer the sector the confidence it needs to make further investments in cost-cutting measures. Lastly, an important factor in terms of wind at sea is that the government appoint the national grid operator Tennet to connect the wind parks to the electricity grid. Essent also feels that the government should develop a new system of concessions.

7.3 Concession system for wind energy
The Cabinet has opted for a system in which subsidies are awarded based on the price of constructing a wind park. A drawback to this approach is that some parties do not factor in the associated risks: their offers are cheapest, but it is uncertain whether they will in fact complete the construction of the wind park. Essent/RWE feels that the solution lies in awarding subsidies to parties that offer the requisite level of stability and will actually be capable of building the park, and can use benefits of scale to keep the costs down. Essent believes that the guiding principle for the new concession system should therefore be the ability to build.

Acceleration of preparation of concession system
Considering the amount of time needed for project development, and considering the targets for 2020, it is important that the preparation of the new concession system be speeded up, to allow wind at sea to contribute to the attainment of the target of generating 14 percent of the country’s energy from sustainable means by 2020. Activities to prepare for a large-scale rollout in the future will also offer the business sector the prospect of a domestic market: investments will only be made in innovations aimed at reducing costs in countries that in fact offer prospects for applying those innovations.
8. Energy saving

Different Essent activities contributed to energy savings in 2011.

8.1 Energy Information: information about the customer's own energy usage

In 2011, Essent conducted the Energy Information pilot to test how customers responded to the information about their energy usage patterns and what that then meant for Essent. Twenty-five customers of Essent and grid operator Enexis were given Enexis Smart Meters to replace their existing electricity meter.

Smart Meter
The Smart Meter transmits the customer’s usage data to a digital photo frame, on which the user can see his or her usage information whenever he or she wants. It is also presented on a special website, where the data is updated on a weekly basis. Users can compare their usage patterns with those of other participants in the pilot (benchmarking) on the website. The display of the digital photo frame and on the website shows a comparison with the user’s projected data. More information about energy usage

The purpose of the Energy Information pilot was to offer participants more information about their energy consumption, to increase their awareness of how they use energy and so to encourage them to save energy. These practical experiences also help us to develop our Energy Management systems. The first results of the pilot are expected to be available in 2012.

8.2 Energy management: smart grids and smart homes

Under the label of energy management, Essent intends to help customers to save energy and optimise energy supplies. Essent is working on a number of energy management projects with RWE and external parties such as KEMA and TNO. For example, in 2011 we conducted an ‘Energy Management’ pilot and put a great deal of work into smart grids and smart homes.

Smart grids
Smart grids allow coordination of the supply and demand of energy. As a result, our customers
can make more efficient use of energy and we can simplify the inclusion of renewable energy sources.

**Smart homes**
Smart homes offer the people who live in them information about their energy usage. Our customers control their appliances remotely, using smart tools, making it easier for them to save energy and achieve added comfort.

**8.3 ‘Energy Management’ pilot**
The ‘Energy Management’ pilot deals with applications for saving energy in consumers’ homes. Thirty households took part in the pilot. They recorded experiences with a smart energy meter and a display in their homes, which showed their current energy usage and allowed them to control room thermostats, among other instruments. The pilot came about with the assistance of the consortium with Accenture, Cisco and Plugwise, which Essent helped to found.

**Input on Energy Management**
Participants in the pilot gave their input on how to improve Energy Management and put forward their own ideas for new applications. The purpose of the pilot was to work together with consumers to develop products that allow them a simple and user-friendly way of influencing their energy usage patterns and the accompanying costs. Essent already provides energy-saving products and services that help consumers lower their energy bills structurally, such as:

- The E-Thermostat;
- Insulation;
- The Energy Consumption Manager.

The experiences recorded in the pilot, which lasted five months, resulted in, among other innovations, the introduction of the E-Thermostat, the first product in Essent’s new My-E product line. A second pilot will be conducted in 2012.

**Energy Management on Twitter**
- @Energiemgmt (www.twitter.com/energiemgmt)
- @Essentnieuws (www.twitter.com/essentnieuws)

**8.4 Green IT at Essent**
To save energy within our own organisation, we have opted for the concept of green IT. Green IT is about minimising the burden on the environment caused by IT processes and the entire lifecycle of IT products. Essent’s performances in the area of green IT are impressive. In Gartners Green IT Benchmark in 2011, Essent in fact came first, as it did in 2010. This benchmark examines the levels of environmental awareness in IT-related matters at 82 participating businesses. Our @nders werken flexible working scheme was one of the reasons why we came in first.

**Less commuting, low-energy laptops**
Based on the concept of Green IT, Essent is constantly seeking to balance environmental awareness, functionality and costs. An IT team put together specifically for this purpose defines the guidelines and assesses the impact of the policies. For example, Green IT uses various applications to support Essent’s @nders werken process. In 2011, among other improvements, we made more efficient use of our office spaces. As a consequence, we realised a reduction in emissions from commuting. We also replaced the desktop computers by low-energy laptops.
Efficient data servers
We achieved significant gains in 2011 by using our data centres more efficiently. We transferred all the employee files of Human Resources at the head office to the RWE server in Germany. This does not require any additional servers there, but means that Essent uses fewer servers. The RWE data centres and servers in Germany are new, much greener and much more efficient, and they offer more capacity.

8.5 Sustainable working processes using the CO$_2$ calculator
In 2011, Essent IT developed a CO$_2$ calculator, an online tool that, starting in 2012, will provide employees with information about their CO$_2$ emissions and what measures they can take to reduce them.

The CO$_2$ calculator is one of the sustainable working processes covered by our ‘energy saving’ spearhead with which we seek to reduce CO$_2$ emissions at our offices. A pilot with a hundred employees will start in 2012. We will study how to best use the CO$_2$ calculator and how to actively involve workers in the process.
Besides the biobased economy project (see chapter 6), more innovative activities were initiated by Essent in 2011.

9. Innovation

9.1 PowerMatching
In the future, more and more electricity will be generated using local, sustainable and small-scale methods, for example solar panels and co-generation, on the one hand, and large-scale wind parks at sea, on the other. However, energy generation and usage are not always synchronised. That is why we started the PowerMatching City pilot in the Hoogkerk district of the city of Groningen in 2011. That pilot provides Essent with information that will help it deal with supply and demand problems in the future. Essent believes that coordinating the electricity supply and demand in this fashion will become more and more important as a solution.

9.2 PowerMatching City pilot in Hoogkerk
PowerMatching City is a pilot conducted with twenty-five households in Hoogkerk, a district of the city of Groningen. The usage and production of electricity are continually matched. This means that as many appliances as possible are switched on when large amounts of electricity – specifically renewable electricity – are generated. Conversely, as much electricity is generated at decentral locations as is necessary to meet the demand, without causing discomfort for the residents. This pilot provides us with information that will help us deal with supply and demand problems in the future. It will also show us how to make optimum use of renewable energy sources and future product development.

Phase 1 completed
The first phase of the project was successfully completed in 2011. The pilot now serves as an international example of the first demonstration of an integrated smart grid. In 2011, the Ministry of Economic Affairs, Agriculture and Innovation awarded a subsidy to PowerMatching City, since the pilot with the twenty-five homes showed that it is possible to create a smart energy grid, and an accompanying market model, using existing technology.
9. Innovation

Phase 2 launched
Phase 2 of the PowerMatching City pilot also commenced in 2011. This phase will last three years, during which time we will demonstrate advanced, smart energy services based on innovative energy technology. Two goals have been defined for this phase.

- We will empirically determine the value created by the intelligent energy systems.
- We will generate information about the requirements and preferences of end-users in connection with such services and systems.

The follow-up to PowerMatching City in Hoogkerk
Essent, Enexis, Gasunie, Humiq, KEMA and TNO are conducting the follow-up phase to PowerMatching City. The Eindhoven and Delft Universities of Technology and Hanze University of Applied Sciences in Groningen will also be involved in the follow-up phase.

Smart grids: a necessary innovation for renewable energy sources and development
PowerMatching City in Hoogkerk ties in with the vision of the government’s Intelligent Grids Taskforce: ‘Working on intelligent grids in the Netherlands’. The pilot also serves to give further shape to the need for gaining practical experience with smart grids. Smart energy grids will be needed for the transition to an energy system with renewable energy sources and sustainable developments such as electric transport and heat pumps.

9.3 Essent: furthering the development of electric driving
Electric driving is an innovation that offers possibilities for sustainability. Essent is at the forefront of eMobility in the Netherlands. Not only do we have a great deal of experience with electric cars, we are also focusing more and more on providing charging stations and services to make those stations accessible to customers. eMobility offers a wide range of possibilities in terms of sustainability. It also represents a new commercial market for Green Electricity products and new services for us to develop.

Electric driving: why?
Vehicles powered by fossil fuels are responsible for almost a quarter of total CO₂ emissions in the Netherlands. The possibilities that electric driving offers in terms of sustainability are becoming more and more clear.

- Electricity offers a good transitional possibility for mobility, because the production of electricity is becoming more and more sustainable using biomass, solar energy and wind energy.
- Electric cars are moreover much more efficient than petrol- and diesel-fuelled cars.
- Electric cars do not cause local polluting emissions.

Charging infrastructure and charging services
Essent’s focus in the area of eMobility is on offering a charging infrastructure and charging services. Essent is setting up partnerships with municipal authorities and car dealers to provide
their residents and customers who drive electric cars with:
• charging stations;
• electricity;
• charging-related service.

That service comprises elements such as cost settlements, information about the availability of charging points and about usage, and access to the charging infrastructure of other providers.

Charging points all over the Netherlands and Europe
For electric driving to become a success, a properly functioning charging infrastructure is indispensable. RWE Effizienz has developed a charging infrastructure portfolio for at home, at the office and in the public space. RWE Effizienz is developing charging services of its own in Germany, and is doing the same in some ten other European countries through the local RWE companies. RWE Effizienz is working in close partnership with the automobile industry to develop the technology for charging stations. This in turn gives Essent the edge over its Dutch competitors. Large numbers of charging points have already been installed in the Netherlands, as shown at www.essent.nl/laadpunten.

Electric driving in Amsterdam: local charging points
In 2011, Essent was contracted by the Municipality of Amsterdam to supply, install and maintain public charging points and to provide charging services in the immediate residential areas of drivers of electric cars. Residents of Amsterdam who want an Essent charging point in their neighbourhood can fill out a form to apply for one. The charging point will be installed after six to nine weeks. The same form can be used to apply for a charging card, which allows the holder to charge their car at almost all public charging points in the Netherlands.

Partnership with Renault
Since 2011, it has been possible for anyone buying an electric Renault car to purchase an Essent charging point near their home or their work. If the customer so wishes, besides this eBox, Essent supplies energy under the Windkracht 220 label, Green Electricity generated using Dutch wind turbines. Essent is also installing a total of 160 charging stations at 22 Renault dealers in the Netherlands and at Renault’s head office in Schiphol-Rijk. Essent intends to enter into more of these alliances with different car brands in 2012.

9.4 Essent and Green gas
Green gas is biogas that has been upgraded to the same quality as natural gas. Bacteria produce biogas from organic material, at landfills, at water treatment plants and in industrial and agricultural fermentation plants. Essent sells Green gas to businesses and consumers.

Substantial growth for Green gas
Essent expects a substantial growth in Green gas. It is CO₂-neutral, and so helps in the realisation of a range of different sustainability goals. That is one of the reasons why the government is offering incentives for Green gas under the SDE+ subsidy scheme. The demand for Green gas is also growing.

Essent: market leader for Green gas
In 2011, the Dutch market for Green gas comprised 40 million cubic metres of Green gas.
Projections show that this volume will increase from 300 million cubic metres in 2014 to 2 billion cubic metres in 2020: approximately five percent of the total gas market. Essent currently leads the market for Green gas. Our ambition is to retain that leading position. As such, we are currently working on various Green gas projects.

- **Green gas for Connexxion**
  In 2009, Essent started selling Green gas to transport company Connexxion, which uses it to power city buses at various locations in the Netherlands. This Green gas originates from the Schoteroog landfill near Haarlem and from the adjacent water treatment plant.

- **Biogas ring main in Friesland**
  Essent is working together with other parties to construct a twelve-kilometre biogas ring main in the northeast part of Friesland Province. Farms will be hooked up to the ring, and will feed in biogas from manure fermentation systems. Essent will upgrade the biogas to the same quality as natural gas, thereby turning it in to “Green gas”.

- **Biogas XL projects**
  Under the Green Deals, Essent has been working on two Biogas XL projects since 2011.

- **Biogas XL projects**
  Essent sells Green gas to Gasunie, the largest gas company in the Netherlands.

- **Introduction of Green gas for road traffic**
  Many buses already run on Green gas all over the Netherlands. However, we also wish to encourage the use of Green gas as fuel for cars. In 2011, the government decided to discontinue the incentives for Green gas as fuel for vehicles in the form of subsidies and tax breaks.

- **Green gas for sustainable toilet paper**
  Paper factory Van Houtum BV in Swalmen uses 100 percent Green gas from Essent to produce the world’s first Cradle-to-Cradle toilet paper.
Dutch Green gas Foundation
In 2011, Essent was one of the eight initiators of the Dutch Green gas Foundation (Groen Gas Nederland), an independent, nationally operating organisation that seeks to combine all expertise and experience relating to Green gas. Its goals are:

- to accelerate developments in the market for Green gas;
- to ensure that the production of Green gas grows by a factor of 10 during the 2011-2013 period;
- to offer incentives for new projects;
- to serve as a knowledge centre.

9.5 Award for sustainable new district Polderwijk in Zeewolde
In September 2011, the Polderwijk district of Zeewolde (Flevoland Province) received the Award of Excellence from the International District Energy Association (IDEA). Polderwijk is a fully sustainable new district. This was the first time that a Dutch project won this international climate competition.

Zeewolde’s Polderwijk district and Essent
The energy concept of Polderwijk is unique. Dairy farm Van Beek transports crude biogas from a manure fermentation system on its land to a combined heat and power station in the Polderwijk district, along a five-kilometre pipeline. Essent Local Energy Solutions transports the heat released by the generation of Green Electricity to the approximately one thousand homes in Polderwijk, with one cow providing enough heat for seven homes.

Remarkable performances of the renewable energy supply
The innovative concept and the remarkable alliance between the municipal authorities, Essent and the dairy farm were not the only grounds on which the Award of Excellence was presented to Polderwijk. The performance levels of the renewable energy supply for Polderwijk are also remarkably good. The results for 2009 and 2010 were as follows.

- In 2010, 7.5 million kWh of renewable electricity was generated near the district.
- The green heat from the biogas meant that almost 800,000 m³ less natural gas was used.
- The electric efficiency of the combined heat and power station running on biogas was 41 percent. This is slightly better than the average for Dutch power stations.
- The total energy efficiency was 90 percent during the winter and on average almost 80 percent over the year as a whole.

With these performances, Polderwijk proves that generating heat and electricity at decentralised locations using biogas works well in practice. The 2011 Award of Excellence was based on the results for 2010. The results for 2011 will be announced in 2012.

Sustainable municipality
Thanks to the farmers’ biogas systems and wind turbines, Zeewolde is one of the first municipalities in the Netherlands whose production of renewable energy exceeds the energy used by its households and businesses.
9.6 Cradle-to-Cradle
The idea behind Cradle-to-Cradle is ‘that all materials used, after their lifetime in a used product, must be capable of being used in another product, without loss of quality and without producing useless residues’. But what part does energy play in this respect? That element is still missing from the C2C concept.

Use of Cradle-to-Cradle in the energy supply chain
C2C applications are possible at various points in the energy supply chain. In 2011, Essent focused primarily on the possibilities in the area of generating energy. For many years, Essent has been a pioneer in this part of the chain, in using biomass for generating electricity and heat. With the biomass-fired power station in Cuijk, Essent had one of the first 100% biomass-fired power stations in Europe.

Biomass-fired power station in Cuijk
We were forced to shut down our biomass-fired power station in Cuijk in 2011 when the subsidies were discontinued. However, in 2011 the power station underwent a new start as a testing location for Essent’s biobased-economy project. In a biobased economy, multiple industries extract as many raw materials as possible from biomass, based on what is commonly called the cascading principle. The raw materials remaining are used as a source of energy for generating electricity. This helps to minimise waste flows and CO₂ emissions. In 2011, we tested various raw materials as possible sources of energy for generating electricity in the biomass-fired power station in Cuijk.

Cradle-to-Cradle and the biobased economy
The Cradle-to-Cradle principle ties in well with the principles of the biobased economy and the use of the biomass-fired power station in Cuijk. We are currently examining the extent to which these two processes can be linked.

9.7 Energy Expert: the online platform for energy professionals
In 2011, Essent introduced Energy Expert (EnergieExpert): an online community for people working in, with or for the energy sector. The website (www.energieexpert.nl) contains blogs of energy experts.

Three themes
Energy Expert centres on three themes.

- The energy mix
- Energy management
- Sustainable mobility

Dialogue with stakeholders
Essent seeks out a dialogue with its stakeholders. That is why the community explicitly also allows the views of experts from outside Essent. They can post blogs and join in discussions about various trending topics. Energy Expert has 22 regular in-house bloggers and 14 bloggers from outside our organisation. The website attracts approximately 4,000 visitors a month.
10. A healthy and safe working environment

Developments in Health, safety & environment in 2011.

10.1 Health, Safety & Environment: the policy

At Essent, the line managers of the various business units and service units are responsible for implementing HSE policy. They are assisted in this process by a corporate HSE Department to facilitate, motivate and monitor the implementation of the policy and serve as a sounding board. This department reports directly to the Executive Board. Once every month, all HSE managers meet to discuss incidents, accidents, achievements and best practices. They also work together to define the goals for the new year and assess the results for the current year. They also initiate joint HSE activities.

Successful HSE policy

Essent’s HSE policy is successful. Factors that contribute to our success are:

- visible HSE leadership by line managers at every level on the work floor;
- awareness among workers;
- the responsibility that workers themselves take;
- to measure is to know: the results of the policy and its implementation are continually monitored;
- the exchange of best practices within Essent and within RWE.

10.2 Developments in 2011

Essent does everything in its power to ensure that its employees have a healthy and safe working environment. HSE saw many developments during 2011. Some of those developments are summarised below.

HSE at the construction site of the Eemshaven power station

Early in 2011, four serious accidents occurred at the construction site of the Eemshaven power station, involving employees of subcontractors. This may never happen again. Essent now explicitly monitors the progress of HSE improvements onsite. In consultation with RWE, the contractors adjusted the HSE policy and the HSE structure has been made clearer. That is very much a necessity at a construction site where
10. A healthy and safe working environment

A healthy and safe working environment

Around 2,500 people work every day. The new HSE policy has proved a success: the added focus on HSE has led to improved results.

Renewal of certificates for power stations
As an energy company, we are part of the society in which we operate. As such, our power stations must of course be compliant with statutory environmental, safety and quality standards. All our power stations also operate under a certified management system for quality, safety and the environment. All the power stations were inspected for compliance with that system in 2011. The result was that all our power stations have been certified according to ISO 9001 (quality), ISO 14001 (the environment) and OHSAS 18001 (working conditions and safety) for the coming three years. HSE management systems were also introduced, certified and continued, including the relevant training.

2011 Essent/RWE HSE Award for RWE Technology
On Wednesday 14 December 2011, the annual HSE Awards were presented in ’s-Hertogenbosch, the Netherlands. The Essent/RWE HSE Award is an internal prize for the best initiative leading to health, safety or environmental improvements within the organisation. In 2011, the Award went to RWE Technology for its HSE approach during the construction of the Claus C unit in Maasbracht. According to the jury, RWE Technology put in an extraordinary performance in 2011 in the area of safety. Claus C was a gigantic construction project involving large numbers of external parties that was nevertheless carried out with barely any serious incidents or accidents. In peak hours over 1,400 workers were active on the construction site.

Essent/RWE Contractor Safety Award for Köster
At the same award ceremony, German firm Köster GmbH received the Essent/RWE Contractor Safety Award, the HSE Award for external parties. Köster is carrying out the civil engineering work at RWE’s construction project in Eemshaven. The jury report explained that: ‘Köster GmbH works in close cooperation with
government authorities, has meticulous safety instructions, avoids communication difficulties by arranging language training and continually works to improve safety. Their approach serves as an example for other contractors and for the RWE organisation at Eemshaven itself.

Other HSE activities during 2011
- Organisation of contact sessions with contractors
- Organisation of ‘giving up smoking’ courses
- Company-wide implementation of an alarm centre for HSE incidents and unwanted situations
- Pilots in the areas of company yoga; optimisation of the work/life balance
- A company fitness programme
- Intensified HSE walks (inspection rounds) and talks (meetings) by line managers among operational workers
- Campaign to end the use of mobile telephones while driving
- Awareness campaign for the @nders werken programme: drawing attention to furniture, light incidence, etcetera
11. Sound employership

Different areas of attention contribute to sound employership.

11.1 @nders werken: Essent’s new approach to work

In 2011, we continued to roll out @nders werken: Essent’s new approach to work. The introduction of this programme makes Essent more attractive for both women and men. The new approach to work helps employees achieve a good work/life balance. The principle on which @nders werken is based is that supervisors manage their workers to achieve output rather than presence or visibility. This affords employees a greater degree of flexibility in choosing their workplace and in deciding to carry out some of their work at home.

Increased productivity

Having started in 2010, we continued the rollout of the @nders werken programme in 2011. As matters now stand, 3,200 employees of Essent have the option of working according to the guidelines of @nders werken. As in the pilot year 2010, we saw in 2011 that @nders werken helps achieve greater productivity. The commuting mileage is also less, which is an achievement in terms of improved safety and reduced CO₂ emissions.

Reduction in work floor area

Another important aspect of @nders werken is that the number of Essent locations in the Netherlands has been reduced. Besides the cost aspect, this considerably reduces CO₂ emissions on the work floor. We realised a reduction of 21,400 square metres in Essent’s total work floor area in 2011. This was achieved in part because of the @nders werken programme and the closure of several locations: Arnhem, Helmond, Hoofddorp, Heerenveen, the old Roermond office and Honselaarsdijk. In the town centre of Roermond, we moved to new office premises designed entirely according to the @nders werken principles. It is the turn of the head office on Willemsplein in ‘s-Hertogenbosch, the Netherlands, in 2012. Essent will vacate approximately half the total office space and let it to third parties.

Assessment of @nders werken

We assessed @nders werken in 2011. The principal conclusion was that most of our employees are pleased with the new approach.
to work and are sufficiently familiar with what it involves. Of the total workforce, 70% said that they have in fact started working differently (‘anders’, in Dutch).

11.2 Diversity
Essent seeks to be an attractive employer for current and future employees. We give shape to this desire by pursuing a strategic diversity policy. Diversity is important to us: we wish our workforce to reflect the society in which we operate. That is why Essent works to establish a culture in which differences in age, sex, ethnic background, religion and sexual orientation are appreciated and in which people feel respected, connected and engaged.

Ratio of men to women
The ratio of men to women is an area of particular focus at Essent. In 2011, that ratio was 66 percent to 34 percent. We hope to bring more balance to that ratio during the coming years.

More women on the Executive Board and the Supervisory Board
A law was passed in the Netherlands in 2011 governing women in top-level management positions of enterprises with more than 250 employees. Pursuant to that law, starting in 2016 at least thirty percent of the seats on the Executive Board and the Supervisory Board must be held by women. According to the 2011 Female Board Index, the average number of women in such positions in Dutch enterprises is currently around 9 percent. In 2011, women made up 25 percent of our Executive Board. No women were on the Supervisory Board.

Talent to the Top
Essent has been pursuing a policy to put more women in top-level management positions for some time, for example with the ‘Talent to the Top’ programme. Essent’s target is to have women fill a quarter of the manager positions in the three highest management layers by 2013. At present, that figure is 18 percent. The number of women in executive positions also needs to increase to:

- 20 percent in 2012;
- 23 percent in 2015;
- 26 percent in 2018.

11.3 The Essent Employee Survey
A high degree of engagement on the part of its employees is very important to Essent. That is why we conduct an Essent Employee Survey (under the name of Essent Medewerkers Onderzoek, or ‘EMO’) every year to discover the views of our employees. In 2011, we sent out five thousand questionnaires for the EMO, of which 85 percent were completed and returned. This is the highest return rate in the history of the EMO. On the whole, the results were slightly less positive than in 2010. The most important outcome of the EMO was that the score for engagement dropped from 78 percent in 2010 to 72 percent. This stemmed largely from the process of transformation and downsizing that our organisation is currently experiencing. Naturally it is our intention to reverse that drop: a high level of employee engagement is a defining characteristic of the best companies.

Other scores positive
The other scores in the EMO were positive: in our employees’ eyes, we outperformed our
competition in the area of local leadership. Communications with immediate supervisors also showed an improvement. Employees also expressed more satisfaction with IT support. In 2012, we will map out the EMO improvements for Essent as a whole, and more specifically per cluster. Those actions will start in 2012.

Scores above the Towers Watson standard
Most of the scores in the 2011 EMO were well above the Towers Watson Dutch National Standard, which compares the results of surveys conducted at Dutch companies.

11.4 Complaints and whistleblower procedures
Any employee who has a complaint may contact one of Essent’s seven confidential staff counsellors. Complaints are handled by a complaints committee.

Number of reports
The confidential staff counsellors received 28 reports in 2011. Most of those reports resulted in a form of mediation or were settled. One report became an official complaint. This made the total number of complaints filed with the complaints committee in 2011 one. The complaint was declared to be founded, after which the managing board of the division concerned was advised.
12. Customer satisfaction

Essent measures customer satisfaction on a yearly basis (see CR Dashboard). Other activities also contributed to that.

12.1 2011 customer satisfaction study Groningen University

In 2011, the University of Groningen did research into customer satisfaction. The Customer Performance Index measured the customer performances of a hundred businesses in the Netherlands. The higher the customer score was, the more turnover the business had, the study revealed. The University of Groningen hands out the Customer Performance Awards based on that study. Essent came 35th in this customer satisfaction study; Essent’s position in 2010 was only 46th.

Winners of the Customer Performance Awards
The businesses are divided into seven categories and twenty subcategories. Essent came third in the ‘energy company’ category, after Shell and Delta.

12.2 Essent on social media

Essent is on all important social media. This allows us to keep our current and future customers informed about Essent, as well as giving us an opportunity to hear what they want to say to us. Essent’s social media policy won the company various prizes in 2011.

Social Media Hero
Essent has been on YouTube, Twitter, Facebook, LinkedIn, Hyves and its own community, Energy Expert (EnergieExpert), since September 2010. Our presence on social media was first recognised in April 2011, when advertising journal Adformatie awarded Essent the title of Social Media Hero for energy companies.

Essent fourth in the Social Media Monitor
In 2011, Essent came out of nowhere to seize the fourth spot in the top one hundred of businesses in the annual Social Media Monitor (www.socialmediamonitor.nl), an independent study into how social media are used by the hundred businesses that advertise most in the Netherlands. The study gave particular attention to the brands’ structural presence in social media. Vodafone, HEMA and Tele2 top the list. The other energy companies have to be satisfied with spots
outside the top twenty: Nuon came 22nd, Eneco came 34th and NLEnergie came 49th.

Follow Essent on social media
- Essent on Facebook: http://www.facebook.com/essent (Essent recorded its 5,000th fan among Facebook users in December 2011)
- Essent on Twitter:
  - @Essent (http://www.twitter.com/essent, we welcomed our 1,000th follower in October 2011)
  - @Essentnieuws: http://www.twitter.com/essentnieuws
  - @werkenbijessent: http://www.twitter.com/werkenbijessent
  - @Essentservice: http://www.twitter.com/essentservice
- Essent on Hyves: http://essent-energie.hyves.nl/
- Essent on YouTube: http://www.youtube.com/essentnl
- Essent on LinkedIn: http://www.linkedin.com/company/essent
- Essent on Flickr: http://www.flickr.com/photos/essentnl/
13. Human rights

Initiatives of Essent which contribute to human rights worldwide.

13.1 The Dutch coal dialogue

Essent is participant in the Dutch coal dialogue. This is a consultation between major consumers of coal, such as energy companies and steel industries, mining companies, unions and NGOs.

How the dialogue started

The dialogue was set up following reports in the media about coal mining in South Africa and Columbia, and concerns about those reports in the Dutch House of Representatives. The first phase of the coal dialogue was started in August 2010, under the guidance of former State Secretary Frank Heemskerk. His work was completed in February 2011 when he published a report entitled Dutch Coal Dialogue: working on understanding and contributing to improvements.

The Dutch coal dialogue: two phases

The Dutch coal dialogue consists of two phases. The first phase served to launch the process to achieve greater transparency in the Dutch coal supply chain. In the second phase, we will examine possible improvements.

- First phase: exchanging knowledge and information

The principal activity during the first phase of the Dutch coal dialogue was an exchange of knowledge and information. Thanks to the confidential nature of the discussions, the participants could be open and clear about their concerns and the future challenges. In the first phase, the participating organisations acquired an understanding of the dynamics of the coal supply chain and identified potential improvements. The participants also agreed that the coal dialogue needed follow-up.

- Second phase: mapping out possible improvements

The second phase of the Dutch coal dialogue started in July 2011, and was chaired by Jan Ernst de Groot, a former member of the Executive Committee of KLM. The goal in the second phase is to map out the possibilities
for improvement. An important factor in that connection is how to improve verification processes in existing procurement and CR policies and how to improve conditions in the mines where necessary. Possible issues have been identified and an audit pilot is being set up. Measures are also being taken to achieve greater transparency in the coal supply chain.

Better Coal
During the fourth quarter of 2011, a European coal dialogue was also launched, under the name ‘Better Coal’. This independent non-profit organisation came about in response to the need for a more internationally-oriented approach to a responsible coal supply chain, and was inspired by the Dutch coal dialogue. Participants in Better Coal include major European energy companies such as RWE, Electrabel/GDF-Suez, E.on and Vattenfall.

Examples of how human rights policy is implemented
The following are some examples of how Essent has implemented its human rights policy.

- We have developed new principles for Socially Responsible Procurement (SRP), explicitly designating human rights as an important aspect.
- HR devote attention to complaints procedures, to protect the rights of our employees.
- The Dutch coal dialogue explicitly addresses human rights in the value chain.
- While building the Eemshaven power station, Essent has taken several important steps towards optimising working conditions.

13.2 Human rights implementation programme
Essent launched its human rights implementation programme in 2011. That programme mapped out areas of our organisation that required more attention for human rights. We used the results to define a series of measures that should be given priority in order to reduce those risks in the future. Essent also feels that it is important to share experiences and best practices with other organisations. For example, in 2011 Essent again spoke at the Conference on Responsible Business Conduct in a Global Context that was organised by employers’ organisation VNO-NCW.

13.3 Essent actively promoting human rights with the ‘Ruggie Report’
Essent’s human rights policy is based on the principles set out in the RWE Code of Conduct and John Ruggie’s UN report entitled ‘Protect, Respect and Remedy: A Framework for Business and Human Rights’. The Ruggie Report puts forward three recommendations: protect, respect and remedy where human rights are violated.

Business and Human Rights Initiative
John Ruggie’s report convinced Essent to help set up the Business and Human Rights Initiative in 2010. We did this together with nine other multinational companies that are affiliated with the Dutch Chapter of the UN Global Compact. Participants in the project use assessments to determine whether their business is ‘Ruggie-proof’. Essent commissioned such an assessment
in 2010. The results indicated that Essent is making good progress. Essent’s top management level shows a great deal of engagement in matters concerning human rights. In 2011, we started a study to determine how to generate more engagement with this issue among other management levels and workers, and how to hone our procedures.

**Human rights: best practices**

Businesses that have joined the Business and Human Rights Initiative developed a series of best practices in 2010 to put the Ruggie Report into practice. Those best practices have been collected and are described in a report that was presented in New York in 2010, at the tenth anniversary celebrations of the UN Global Compact. Essent is proud to contribute to the Initiative. It makes us a pioneer in the field of human rights in the Dutch energy sector.
14. Social projects

14.1 Companius
One of Essent’s nine spearheads is corporate citizenship. We give shape to that role in the form of our volunteer programme, Companius. This programme, an initiative of RWE, started in 2007 and already included 8,000 German colleagues. In March 2011, Essent also started this volunteer programme. Companius helps Essent employees to carry out volunteer work. That help can take the shape of a monetary contribution of up to 500 euros for the charity for which the employee works and/or half a day’s leave per year. Large numbers of Essent employees already contributed to the programme in 2011. The following are a small sample of the activities.

- Fundraising through a 700-kilometre trek by mountain bike for Duchenne Heroes
- Volunteer work in the Maaspoort district in ’s-Hertogenbosch
- Clothes collection in Roermond
- Restoration work at Reinier van Arkel in Vught
- Volunteer work for Sinterklaas Bestaat
- Organisation of the Street Parade to commemorate the 150th anniversary of Royal brass band Aloysiana in Landgraaf
- Realisation of thirty AEDs (automated external defibrillators) in a new residential district of Tilburg
- Financing of a laptop for the Haarlemmermeer Food Bank

14.2 Fish-friendly turbine in the hydro-electric power station in Linnen
In 2011, Essent overhauled its hydro plant in Linnen (Province of Limburg). During the year, we were asked by Nijhuis Pompen whether we were interested in installing a fish-friendly turbine in the power station, to replace one of the four regular turbines. A similar fish-friendly Nijhuis pump won the Aquatech Innovation Award in 2011.

Decision on the fish-friendly turbine to be made in 2012
Essent is currently working together with Nijhuis Pompen to investigate the possibilities for carrying out a demonstration project. We will decide on this matter some time in 2012.
15. Scope of this CR Report

This CR Report provides information about Essent N.V.’s CR activities and results for the 2011 calendar year.

Some of the operating activities discussed in this CR Report were previously part of Essent, but were transferred to RWE Innogy in 2010. The activities in question are:

- Essent’s Dutch wind activities (transferred to RWE Innogy Benelux);
- the procurement of fuels by Essent Trading, which is now part of RWE Supply & Trading.

The policy pursued by Essent in 2011 is based on the nine CR spearheads defined in 2007. To further clarify the CR policy and to better tie in with RWE’s CR policy, quantified goals were defined for the spearheads in 2010. These spearheads and goals are summarised in a Dashboard included in the CR Report. In 2011, Essent’s Executive Board assessed the progress towards realising each of those goals for the first time.

GRI

Essent uses the Global Reporting Initiative (GRI) G3 reporting guidelines for its responsibility reporting. The GRI Boundary Protocol served as the point of departure for determining what information to include and for defining the scope of the CR Report, based on the principle of reporting the most important values for an energy company. A complete list of all GRI indicators and accompanying data has also been published in this CR report.

Inclusion of information

The CR Report reflects the social policy and the principal developments for the 2011 calendar year. The topics were selected based on the importance of developments for stakeholders, relevance, currentness and continuity compared with activities commenced in prior reporting years and information reported previously. Information is included primarily on the basis of Essent’s position as an energy producer and seller of energy-related products and services. A presentation of the renewable energy production, principal emissions, investments in operating assets and the questions related to those matters...
in 2011 forms the essence of the CR Report. The CR Report also includes workforce information about our diversity and safety policies. As Essent no longer publishes a separate annual financial report, the CR Report also includes some key financial data.

Scope and consolidation
Within RWE AG, Essent N.V. is responsible for the activities in the Benelux. The scope of this report is all Essent companies and majority holdings of Essent N.V. in 2011.

However, there are some extensions to this scope.

- Important information about the wind activities of RWE Innogy Benelux (formerly Essent Wind Nederland and no longer part of Essent N.V.’s activities in the Benelux) – installed capacity, production data and property development – has been included for reasons of continuity compared with the past and relevance to our sustainability goals, and because those activities are part of RWE’s overall activities within our sphere of operation (the Benelux).
- Essent has a number of joint ventures and minority interests. The production and emission data for those joint ventures and minority interests are included but identifiable as such. Data is included proportionate to Essent’s ownership share. This data provides information about Essent’s indirect contribution to the production of renewable energy and emissions.
- Safety is of particular importance to Essent. We therefore include information not only about Essent itself, but also about contracted third parties and external workers.

- The key financial data has been taken from the 2011 consolidated financial statements of Essent N.V., based on the applicable principles for financial consolidation.

Comparison with prior years
Following its acquisition by RWE in 2009, Essent changed the basis of its reports to match the principles used by RWE. The comparative figures for prior years were not adjusted, however. In addition, various organisational changes were made in 2009, in which several divisions were sold off. As a consequence, the figures reported for the period before 2009 cannot in all instances be compared with the corresponding values reported for 2009, 2010 and 2011. The information in question concerns the emissions reported, renewable energy production, workforce information and financial data. For this reason, figures from before 2009 are not published in this report. However, that data is still available on Essent’s website. The tables and graphs in question are accompanied by explanatory notes.

Sources of the information
The information used by Essent in the CR Report has been derived from a number of sources, using regular reporting systems and management information, and reports compiled specifically for this CR Report. The structure of the report has been discussed with the Executive Board and higher management levels of Essent and RWE, and with external stakeholders. The CR Report also includes information from the various stakeholder dialogues conducted during 2011. Essent was both an initiator and a participant in stakeholder dialogues initiated by third parties.
**Online publication**

The CR Report 2011 is published as a separate website. No printed version is available; however, users have the option of downloading the CR Report 2011 in PDF format and printing it. A summary of the main items is also available. Additional information and background information about Essent and its CR policy is also available on Essent’s website.

**External assurance**

With this CR Report, Essent seeks to provide a true and fair reflection of its social efforts and impact. That is why proper assurance regarding the quantitative information is important to us. Essent is part of RWE AG, which has had an assurance report compiled for the quantitative data of the entire RWE AG Group, including Essent. For this reason Essent has not included a separate assurance report in its CR Report 2011.
Glossary

W  watt
Wh  watt hour
k  kilo = 1,000 (kV = kilovolt)
kWh  kilo watt hour (kW = kilowatt)
m  mega = 1,000 kilo
g  giga = 1,000 mega
fte  fulltime equivalents
CO₂  carbon dioxide
SO₂  sulphur dioxide
NOₓ  nitrogen oxides
hse  health safety & environment
dart  days away restricted or transferred
ltif  lost time injury frequency
trcf  total recordable case frequency
ngo  non gouvernemental organisation
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