



**SIEMENS**

---



Environmental Portfolio  
Report 2011

[www.siemens.com/environmentalportfolio](http://www.siemens.com/environmentalportfolio)

[www.siemens.com](http://www.siemens.com)

# Table of contents

---

1	Siemens Environmental Portfolio 2011	2	1.1	Siemens Environmental Portfolio – introduction
		2	1.2	Environmental Portfolio results 2011

---

2	Reporting principles	4	2.1	Environmental Portfolio Guideline
		4	2.2	Scope of reporting
		5	2.3	Governance – processes and definitions
		6	2.4	Criteria for inclusion of elements in the Environmental Portfolio
		7	2.5	Determining the reference solution – baseline methods
		8	2.6	Emission factors for calculating the annual reduction of carbon dioxide emissions
		9	2.7	Reporting estimates

---

3	Independent Assurance Report	10		Independent Assurance Report on Siemens' Environmental Portfolio Report 2011
---	---------------------------------	----	--	--

---

# 1 Siemens Environmental Portfolio 2011

## 1.1 Siemens Environmental Portfolio – introduction

The Siemens Environmental Portfolio is part of Siemens response to global challenges such as climate change, scarcity of natural resources and environmental pollution. The Environmental Portfolio consists of products, systems, solutions and services (Environmental Portfolio elements) that meet one of our selection criteria which are energy efficiency, renewable energy or environmental technologies (refer to chapter 2.4). These elements reduce impacts on the environment and emissions of carbon dioxide and other greenhouse gases (defined together in the following as carbon dioxide emissions) responsible for climate change. The reduction of impact is measured by comparison with reference solutions (baselines).

With our Environmental Portfolio we intend, among other things, to help our customers to reduce their

carbon dioxide footprint, cut their energy costs and improve their profitability through an increase in their productivity. In terms of environmental protection, our target for 2011 was to help our customers reduce their accumulated annual carbon dioxide emissions by 300 million tons.

In addition to its environmental benefits, our Environmental Portfolio enables us to compete successfully in attractive markets and generate profitable growth. In fiscal 2010, we have set ourselves a revenue target for the Environmental Portfolio within the “One Siemens” framework – to exceed €40 billion in revenue from the Environmental Portfolio by the end of fiscal 2014. We continue to strive for that goal, although due to the announced planned public offering of OSRAM AG, it will be more challenging to achieve.

To learn more about the Siemens Environmental Portfolio please visit: [www.siemens.com/environmentalportfolio](http://www.siemens.com/environmentalportfolio)

## 1.2 Environmental Portfolio results 2011

### Key performance indicators

	Year ended September 30,	
	2011	2010 <sup>1</sup>
Revenue generated by the Siemens Environmental Portfolio (continuing operations, in billions of €)	29.9	27.4
Annual customer reductions of carbon dioxide emissions generated by elements from the Siemens Environmental Portfolio newly installed in the reporting year (continuing and discontinued operations, in millions of tons; including an amount of 9 million tons and 15 million tons related to OSRAM at the end of fiscal 2011 and 2010, respectively)	49	56
Accumulated annual customer reductions of carbon dioxide emissions generated by elements from the Siemens Environmental Portfolio (continuing and discontinued operations, in millions of tons; including an accumulated amount of 68 million tons and 59 million tons related to OSRAM at the end of fiscal 2011 and 2010, respectively)	317	269

<sup>1</sup> In fiscal year 2011, we added new Environmental Portfolio elements to the Environmental Portfolio, for which proof of fulfillment of the qualification criteria was previously not available (€4.1 billion revenue) and we also excluded Environmental Portfolio elements, that did not fulfill our qualification criteria (€0.7 billion revenue). Thus, the 2010 revenue and accumulated annual customer reduction of carbon dioxide emissions presented in this report differ from those presented in last year's report.

---

The Environmental Portfolio elements with the main contribution to the accumulated annual reductions of carbon dioxide emissions at our customers are combined cycle power plants (CCPP), modernization and upgrade of power plants, power generation from wind power and high-voltage direct current (HVDC) power transmission.

Including revenue from newly developed and additionally qualified Environmental Portfolio elements and excluding revenue from elements that no longer fulfill our qualification criteria, revenue from continuing operations relating to the Environmental Portfolio in the current year amounted to €29.9 billion and exceeded the comparable revenue of €27.4 billion in fiscal year 2010. This means that in fiscal 2011 our Environmental Portfolio already accounted for 41% of our revenue from continuing operations. In addition, OSRAM, which is presented in discontinued operations, reported revenue relating to Environmental Portfolio elements of €3.7 billion in fiscal 2011, compared to €3.3 billion in fiscal 2010.

Furthermore, with our Siemens Environmental Portfolio elements including those from OSRAM installed in fiscal year 2011, we helped our customers reduce their emissions by another 49 million tons of carbon dioxide. With the total of our Siemens Environmental Portfolio elements including those from OSRAM that were installed at customer locations since the beginning of fiscal 2002 and remain in use today, we achieved our goal and reduced accumulated annual customer carbon dioxide emissions by 317 million tons by the end of fiscal 2011.

# 2 Reporting principles

## 2.1 Environmental Portfolio Guideline

As there are currently no accepted international standards addressing the identification and reporting of so-called “green products”, we report the revenue from our Environmental Portfolio and the accumulated annual customer reductions of carbon dioxide emissions generated by it in accordance with internal regulations defined in our Environmental Portfolio Guideline.

This Guideline sets out criteria and processes for the qualification of elements for the Environmental Portfolio, defines roles and responsibilities as well as processes to account for annual customer reduction of carbon dioxide emissions and refers to financial reporting guidelines for recognition of revenue. It is based on the Reporting Principles set forth in “A Corporate Accounting and Reporting Standard – Revised Edition” and “GHG Protocol for Project Accounting” issued by the Greenhouse Gas Protocol Initiative. Those principles are relevance, completeness, consistency, transparency, accuracy and conservativeness. Revenue generated by the Environmental Portfolio is recognized in accordance with revenue recognition policies as described in Note 2 to the Consolidated Financial Statements in the Annual Report of the Siemens Group (“Siemens”) as of September 30, 2011.

## 2.2 Scope of reporting

To date, the Environmental Portfolio related key performance indicators are revenue and customer reductions of carbon dioxide emissions generated by elements from the Siemens Environmental Portfolio.

Carbon dioxide emission reductions at our customers are calculated based on the comparison of the Environmental Portfolio element (e.g. a combined cycle power plant and the related carbon dioxide emissions per kilowatt-hour) with a reference solution (e.g. a global average grid factor for power production). Based on technical parameters (e.g. the installed capacity in gigawatt in the reporting year or load hours) the annual reduction of carbon dioxide in the reporting year is calculated. For all Environmental Portfolio elements sold in a reporting year, the annual reductions are summed up to calculate the total annual carbon dioxide emissions reductions at our customers at the end of that year.

Our Environmental Portfolio elements are typically long-lasting products (e.g. motors) or infrastructure elements (power-plants, trains) that contribute to carbon dioxide emission reduction not only in the reporting year but for many years. Therefore, we additionally calculate the accumulated annual customer reductions of carbon dioxide emissions. The accumulated annual emission reductions are calculated as customer reductions of carbon dioxide emissions generated by Environmental Portfolio elements installed in the current reporting period (see above) plus those elements installed since the beginning of fiscal 2002 that are still in use at the customer. If elements installed in previous reporting periods are no longer in use, their previous annual emission reductions are no longer considered in the calculation of the accumulated annual customer reductions of carbon dioxide emissions in the respective reporting period.

For the Environmental Portfolio elements installed in a given reporting period, we consider the reductions of carbon dioxide emissions for the entire reporting period, independent of the actual date of installation during the year of first time recognition.

---

The key performance indicators reported are based on activities during the Siemens fiscal year beginning October 1, 2010 and ending September 30, 2011, including the comparative period for the fiscal year 2010.

Similar to the Siemens Consolidated Financial Statements, this Environmental Portfolio Report 2011 presents the operations of Siemens AG and its subsidiaries. Revenue and annual customer reduction of carbon dioxide emissions generated from associated companies and other investments are not included in the Environmental Portfolio Report 2011.

## 2.3 Governance – processes and definitions

The qualification of our Environmental Portfolio elements as well as the respective reporting is based on clearly defined processes and criteria.

In principle, products, systems, solutions and services of Siemens AG and its subsidiaries may qualify for the Environmental Portfolio. The entire Siemens business portfolio is reviewed on an annual basis to ensure the appropriate qualification of Environmental Portfolio elements based on the criteria described hereafter. This covers the inclusion of newly developed elements as well as the integration of additionally qualified elements where evidence of fulfillment of the qualification criteria was not available in prior reporting periods. For additionally qualified Environmental Portfolio elements, we report their prior-year revenue and prior-year contribution to the accumulated annual customer reduction of carbon dioxide emissions on a comparable basis. Elements that no longer fulfill our qualification criteria are excluded from our Environmental Portfolio, prior periods are not adjusted.

Prior to inclusion in the Environmental Portfolio, potential new Environmental Portfolio elements have to undergo a multilevel internal evaluation process which includes reviews in the respective Siemens Divisions as well as a review in the Corporate Sustainability department.

Within this process, Siemens verifies the completeness of documentation supporting the fulfillment of the qualification criteria. Furthermore, Siemens considers whether or not significant so-called adverse effects exist. Adverse effects describe the situation that a potential Environmental Portfolio element, despite fulfilling the qualification criteria, might cause considerably higher environmental effects elsewhere in the element's lifecycle. If material adverse effects exist, the element is not included in the Environmental Portfolio.

If the revenue related to an Environmental Portfolio element cannot be accurately separated from our total revenue, the respective revenue will not be accounted for and reported due to the principle of conservativeness.

The Siemens Sustainability Board chaired by Siemens Managing Board member and Chief Sustainability Officer Barbara Kux annually acknowledges changes in the composition of the Environmental Portfolio. Another task of the Sustainability Board is to discuss potential concerns of stakeholders with regard to the inclusion or deletion of certain technologies in the Environmental Portfolio.

---

## 2.4 Criteria for inclusion of elements in the Environmental Portfolio

An Environmental Portfolio element can be a product, a system, a solution or a service as defined above.

If all products, systems, solutions or services of a Siemens' organizational unit meet one of the selection criteria, this unit may be considered as an Environmental Portfolio element as a whole.

Furthermore, a core component of a system or solution may qualify as an Environmental Portfolio element, if the component provided by Siemens is key to enabling environmental benefits resulting from the system's or solution's overall application. This means that the environmental functionality of the overall system or solution cannot be achieved without the component provided by Siemens. Examples of core components qualifying as elements of the Siemens Environmental Portfolio are gear boxes for wind turbines or thyristor valves for High-Voltage Direct Current (HVDC) power transmission systems.

Service types are differentiated between "product-related service" and "value-add service". In cases in which a Siemens product, system or solution qualifies as an Environmental Portfolio element, the revenue, and if applicable, the annual customer reduction of carbon dioxide emissions of the "product-related service" shall generally be accounted for and reported on in line with the related Environmental Portfolio element. In cases of "value-add services" the revenue and, if applicable, the annual customer reduction of carbon dioxide emissions shall be accounted for and reported on only if the service qualifies as an Environmental Portfolio element by meeting one of the selection criteria as defined below.

To qualify for inclusion in the Environmental Portfolio, an element must meet one of the following selection criteria. Products, systems, solutions and services with planned application in military use or nuclear power are not included in the Environmental Portfolio.

### I Energy efficiency

The criteria for energy efficiency is an improvement in energy efficiency of 20% or more during the customer use phase compared to the applicable baseline, or a reduction of at least 100,000 metric tons of carbon dioxide equivalents per reporting period in the customer use phase compared to the applicable baseline. If an energy efficiency increase can only be reasonably defined as reduction of dissipation losses (e.g. as defined by the International Electrotechnical Commission (IEC) standards for energy efficiency classification of motors), a 20% reduction of dissipation loss would also qualify products for our Environmental Portfolio.

Examples of products and systems meeting the above mentioned energy efficiency criteria are combined cycle power plants, intelligent building technology systems (both reduce carbon dioxide emissions of at least 100,000 metric tons per reporting period) or premium efficiency motors (20% dissipation loss improvement).

### II Renewable energy

This criterion covers technologies in the field of renewable energy sources or smart grid applications<sup>1</sup> and their respective core components.

<sup>1</sup> According to the National Institute of Standards and Technology (NIST) – Smart Grid Interoperability Standards Project (USA), the term smart grid, "refers to a modernization of the electricity delivery systems so it monitors, protects and automatically optimizes the operation of its interconnected elements –from the central and distributed generation through the high-voltage transmission network and the distribution system, to industrial users and building automation systems, to energy storage installations and to end-use consumers and their thermostats, electric vehicles, appliances and other household devices."

---

The scope of the renewable energy criterion is power generation and heat generation from e.g. wind power (onshore and offshore), concentrated solar power, photovoltaic, tidal power, wave power, hydroelectricity, geothermal power or biomass.

Examples of respective Environmental Portfolio elements are wind turbines and solar power plants as well as core components such as solar inverters.

### III Environmental technologies

This criterion is related to water and wastewater treatment, air pollution control, waste reduction, recycling, e-car infrastructure and its core components. Additionally, a criterion for the Healthcare Sector is an environmental impact reduction in terms of noise, radiation or total weight of at least 25% compared to the baseline. Water and wastewater treatment relate to products, systems, solutions and services that are used for industrial or municipal water and wastewater treatment and its related infrastructure. Air pollution control relate to products, systems, solutions and services that are used to reduce or avoid air pollution which is caused by introducing chemicals, particulate matter or biological materials into the atmosphere. Recycling relates to products, systems, solutions and services that provide technologies to refurbish or recycle products or systems and refurbishment of capital goods as a professional service. E-car relates to the main components of an e-car itself (drive solution, hybrid technology, storage) or e-car infrastructure which is mainly related to charging solutions and other intelligence solutions (hardware or software) outside the e-car.

Examples for Environmental Portfolio elements fulfilling the criterion of environmental technologies are membrane filter systems, advanced burner technologies or emission reduction systems for metals sintering.

## 2.5 Determining the reference solution – baseline methods

Energy efficiency, annual customer reduction of carbon dioxide and environmental impact are all assessed by a comparison with a reference solution (baseline). There are three different options for the reference solution: before-after comparison, comparison with a reference technology or comparison with the installed base. The final decision as to which baseline is used is taken by the respective Division within Siemens based on the following options:

### Before-and-after comparison

A before-and-after comparison refers to the difference between an initial situation at the customer and the situation after installation of a Siemens product, system, solution or service. A before-and-after comparison implies the presence of a preexisting product, system, solution or service at the customer whose characteristics are improved or substituted by the employment of a Siemens product, system, solution or service. This comparison may be applied, for example, to cases when a Siemens product, system, solution or service modernizes a power plant or optimizes the energy consumption of a building.

### Direct comparison with a reference technology

Direct comparison with a reference technology refers to the difference between the Siemens product, system, solution or service and either an appropriate single other technology or a predecessor. Direct comparison with a reference technology implies the existence of one alternative or predecessor product, system, solution or service in the market which is employed for the same or a similar purpose. This comparison may be applied, for

example, by using low loss high-voltage direct current (HVDC) power transmission in comparison to conventional alternating current power transmission.

### Comparison with an installed base

Comparison with an installed base refers to the difference between the Siemens product, system, solution or service and an average of several installations employed for the same or a similar purpose. Comparison with an installed base implies the existence of global or regional average data on several installed products, systems, solutions or services employed for the same or a similar purpose. This comparison may be applied, for example, to combined cycle power plants (CCPP) by drawing a comparison with the average global greenhouse gas emissions factor for electricity generation.

When calculating emission reductions compared to the baseline, we consider either direct savings (e.g. by power plants or efficient motors) or the indirect effects that occur when different products in a system interact and create emission reductions (e.g. components for building automation). If Siemens only delivers core components but not the entire system, annual customer reduction of carbon dioxide emissions will only be calculated for these parts.

The baselines are reviewed annually and, if necessary adjusted, such as when statistical data on the installed base is updated because of technical innovations or regulatory changes.

The calculation of the reduction of carbon dioxide emissions is based on a specific comparison for every relevant Environmental Portfolio element with a baseline. For this calculation, we focus on those elements that have a material impact on the overall carbon dioxide emissions reduction.

## 2.6 Emission factors for calculating the annual reduction of carbon dioxide emissions

For some emission reduction calculations, the baseline reference for the installed base is determined using known global emission factors such as those for power production. The baselines used for our calculations are mainly based on data from the International Energy Agency (IEA) for gross power production and for grid losses, on data from the Intergovernmental Panel on Climate Change (IPCC) for fuel based emission factors, and our own assessments of power production efficiency.

Relevant emission factors applied in 2011 are:

### Emission factors for CO<sub>2</sub> abatement calculation

Category	Emission factor	Basis for comparison of Environmental Portfolio elements (g CO <sub>2</sub> /kWh)
Global power generation all primary energy carriers	585 g/kWh	Power generation
Global power generation fossil energy carriers	867 g/kWh	Power generation except Renewables
Utilization of electricity (including transmission losses)	640 g/kWh	All types of utilization of electricity apart from trains
Utilization of railway power supply (including transmission losses)	620 g/kWh	Utilization of electricity for trains

Source: IEA (IEA Electricity Information 2010)<sup>1</sup>, own calculations

<sup>1</sup> Emission factors were updated to IEA Electricity Information 2010 (prior year: IEA Electricity Information 2007).

---

For consistency reasons, we generally apply global emission factors for calculating emission reductions unless specific conditions of a solution require application of local emission factors. For the calculation of annual customer reductions of carbon dioxide emissions e.g. for wind turbines, we apply the emission factor 867g/Wh of global fossil power production as the baseline.

Generally, our approach includes all greenhouse gases covered by the Kyoto-Protocol. However, for power production and electrical applications, we consider the only relevant greenhouse gas to be carbon dioxide. In case other greenhouse gases occur in technical applications, we consider them in our calculations.

For some Environmental Portfolio elements, we do not know the detailed parameters of use at our customers. Therefore, we apply internal and external expert estimates for these, following the principle of conservatism.

## 2.7 Reporting estimates

To date, there is no applicable international standard that applies across companies for qualifying products, systems, solutions and services for environmental and climate protection, or for compiling and calculating the respective revenue and the quantity of reduced carbon dioxide emissions attributable to such products, systems, solutions and services.

Thus, the inclusion of elements in the Environmental Portfolio is based on criteria, methodologies and assumptions that other companies and other stakeholders may view differently. Factors that may cause differences, among others, are: choice of applicable baseline methodology, application of global emission factors that may be different from local conditions, use patterns at customers that may be different from standard use patterns used for carbon dioxide emissions reduction calculations, assessment of the life span of the Environmental Portfolio elements, internal assessments of our own power production efficiency factors, share of a core component and expert estimates if no other data is available.

Accordingly, revenue from our Environmental Portfolio and the reduction of our customers' annual carbon dioxide emissions may not be comparable with similar information reported by other companies. Furthermore, we subject revenue from our Environmental Portfolio and the reduction of our customers' annual carbon dioxide emissions to internal documentation and review requirements which are less sophisticated than those applicable to our financial information. We may change our policies for recognizing revenue from our Environmental Portfolio and the reduction of our customers' annual carbon dioxide emissions in the future without previous notice.

# 3 Independent Assurance Report on Siemens' Environmental Portfolio Report 2011

To: Siemens AG, Berlin and Munich.

## Our Engagement

We have been engaged to perform a limited assurance engagement on the section *Siemens Environmental Portfolio 2011* of the Environmental Portfolio Report 2011 for the fiscal year from 1 October 2010 to 30 September 2011 (hereinafter: the Environmental Portfolio Report 2011) prepared by Siemens Aktiengesellschaft, Berlin and Munich.

## Limitations of our engagement

Our engagement did not include the targets set for "Revenue of elements from the Siemens Environmental Portfolio" and "Accumulated annual reductions of carbon dioxide emissions generated by elements from the Siemens Environmental Portfolio" (page 2).

## Reporting Criteria

We assessed the section *Siemens Environmental Portfolio 2011* against the reporting principles including the underlying reporting criteria as outlined in the related section *Reporting Principles* of the Environmental Portfolio Report 2011 (page 4–9), referred to as *Reporting Principles* in the following. These *Reporting Principles* are based on the reporting principles set forth in "A Corporate Accounting and Reporting Standard – Revised Edition" and "GHG Protocol for Project Accounting" issued by the Greenhouse-Gas-Protocol-Initiative. We believe that the *Reporting Principles* are suitable for our assurance engagement.

## The management's responsibility

Siemens AG management is responsible for the compilation of section *Siemens Environmental Portfolio 2011* of the Environmental Portfolio Report 2011 in accordance with the *Reporting Principles*.

This responsibility includes primarily

- > the design, implementation and maintenance of systems, processes and internal controls for the compilation of the Environmental Portfolio 2011 and for the preparation of an Environmental Portfolio Report 2011 that is free from material misstatements whether due to fraud or error
- > the definition and implementation of appropriate guidelines that include the *Reporting Principles* as outlined in the related section of the Environmental Portfolio Report 2011
- > the use of appropriate methods for gathering source data to prepare the Environmental Portfolio in accordance with the *Reporting Principles* and
- > the use of assumptions and estimates of individual data which are reasonable in the circumstances.

## Our responsibility

Our responsibility is to express a limited assurance conclusion on section *Siemens Environmental Portfolio 2011* of the Environmental Portfolio Report 2011 based on our work performed.

We conducted our limited assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000, *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*. This standard requires that we plan and perform the assurance engagement to obtain limited assurance about whether the section *Siemens Environmental Portfolio 2011* of the Environmental Portfolio Report 2011 is free from material misstatement. In a limited assurance engagement the evidence gathering procedures are more limited than in a reasonable assurance engagement and therefore less assurance is obtained than in a reasonable assurance engagement.

---

We performed the engagement in accordance with the independence requirements of the IFAC Code of Ethics for Professional Accountants.

### Summary of work performed

We primarily inquired of Siemens' personnel and performed analytical procedures applied to the quantitative data reported in section *Siemens Environmental Portfolio 2011* of the Environmental Portfolio Report 2011.

Within the scope of our work we performed the following procedures:

- > Obtain an understanding of the procedures for determining the qualification of elements for the Environmental Portfolio, including those procedures for determining the baselines
- > Inquiries of personnel of selected Divisions in the Industry, Energy and Healthcare Sector as well as the corporate departments assigned with the compilation of the Environmental Portfolio 2011 and the preparation of the quantitative data reported in section *Siemens Environmental Portfolio 2011* of the Environmental Portfolio Report 2011 to obtain an understanding of the processes and controls for gathering, aggregating, analyzing and reporting the selected quantitative data on a sample basis
- > Assessment of the quantitative data reported in section *Siemens Environmental Portfolio 2011* of the Environmental Portfolio Report 2011 on a sample basis by
  - > Inspection of documents
  - > Understanding the single steps of calculation
  - > Trace input data to the calculation of the selected quantitative data to underlying sales and product statistics, accounting data and other supporting documents.

- > Assessment of the qualitative disclosures and statements in the section *Siemens Environmental Portfolio 2011* of the Environmental Portfolio Report 2011.

### Our conclusion

Based on our procedures performed to obtain a limited assurance, nothing has come to our attention that causes us to believe that the section *Siemens Environmental Portfolio 2011* of the Environmental Portfolio Report 2011 has not been prepared, in all material respects, in accordance with the defined *Reporting Principles*.

Munich, 23 November 2011

Ernst & Young GmbH  
Wirtschaftsprüfungsgesellschaft



Nolden  
Wirtschaftsprüfer  
(German Public Auditor)



Richter  
Wirtschaftsprüferin  
(German Public Auditor)

---

**Further information on the contents of this report  
is available from:**

Address Siemens AG  
Wittelsbacherplatz 2  
80333 Munich  
Germany

**Corporate Sustainability**

Ralf Pfitzner  
Michael Lakota

email: [sustainability@siemens.com](mailto:sustainability@siemens.com)  
[www.siemens.com/environmentalportfolio](http://www.siemens.com/environmentalportfolio)  
[www.siemens.com/sustainability](http://www.siemens.com/sustainability)

**Copyright Notice**

Designations used in this document may be trademarks,  
the use of which by third parties for their own purposes  
could violate the rights of the trademark owners.

**Layout**

häfelinger + wagner design GmbH

© 2011 by Siemens AG, Berlin and Munich