

## Risks and Opportunities

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### 1. Regulatory Risks: (CDP6 1(a)(i))

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#### 1.1. Is your company exposed to regulatory risks related to climate change?

Eni's monitoring activity on risks and opportunities related to climate change, performed in the last 12 months, confirms the scenario described in CDP6, the main adjustment being the tuning to future trends in energy demand.

As an integrated energy company operating in 70 countries in the oil & gas, electricity generation and sale, petrochemical, oilfield services construction and engineering business, eni is exposed to risks related to climate change. In particular, eni actively manages regulatory risks by monitoring and by performing lobbying activities at European and international level.

One regulatory link to climate change is the European Emissions Trading Scheme (ETS) - Directive (2003/87/EC). Currently, eni is one of the main Italian and European players (25.9 M EUAs assigned in 2008), with its 56 installations in Italy and 4 abroad under the ET scheme in the Exploration & Production, Refining, Natural Gas Transportation, Natural Gas Storage, Power Generation and Petrochemicals activities. Eni's CO<sub>2</sub> emissions under the ETS represented 40% of eni's total in 2008. In Italy alone, eni received 13% of the national emissions' cap. Eni estimates that it will need about 6 million EUA to ETS compliance for the whole current compliance period (2008-12).

Moreover, Europe is determined to achieve the global leadership in tackling climate change through the so called "20 20 20 by 2020" policy (Energy Policy for Europe - EPE) approved in December 2008. The EU-27 GHG reduction target (-20% by 2020 from 1990 levels) is made up of various targets for the ET sectors (-21% by 2020 from 2005) and non-ET sectors (-10% by 2020 from 2005). As the European target may be increased in the case of a Post-Kyoto agreement (up to -30% by 2020) eni must also actively follow the development of the international regime.

The EPE will affect eni's medium and long term carbon management strategy. Eni will increase its commitment in energy saving and efficiency projects in its plants (combustion, refining, turbocompressor, etc) as well as in projects of Carbon Capture and Storage. Moreover, eni will also have to develop a buying strategy of the ETS allowances required for the compliance. The mandatory target on biofuel will directly impact the refining production strategy.

The uncertainties associated with the permitted use of carbon credits (CERs and ERUs) by ET and non-ET operators represent a concrete threat to eni's investments to curb carbon emissions.

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## **2. Physical Risks: (CDP6 1(a)(ii))**

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### **2.1. Is your company exposed to physical risks from climate change?**

Eni operates in areas at high risk of climate-related damage such as China, Australia and the Gulf of Mexico. However, eni's production in these areas represents only 5% of the total production (1,797,000 barrels) of the company in 2008.

The risk of weather events and changing weather patterns is factored in by Development Project Managers throughout the project lifecycle. For example, in production operation, the risks of extreme weather events are reduced via quickly releasable Floating Production, Storage and Offloading (FPSO) vessels. Furthermore, eni has stipulated contracts with external consultants for the continuous monitoring of weather conditions in order to be ready for immediate responses to risky situations.

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## **3. Other Risks: (CDP6 1(a)(iii))**

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### **3.1. Is your company exposed to other risks as a result of climate change?**

According to World Energy Outlook 2008 (WEO 2008) long term reference scenario (up to 2030), primary energy demand will grow from 11,730 million tep to 17,010 million tep, with fossil fuels still satisfying 80% of the demand.

The political will to pursue a GHG reduction/stabilization target, mainly supported by industrialized economies and Europe in particular, will have to be balanced with the objective of reducing energy dependence, that is one of the main issues for energy-intensive countries (North America and OECD) and for those with high economic growth (India and China). This last objective is in conflict with the environmental one, as it could cause an increasing use of the more polluting national energy sources (e.g. coal in China).

Therefore, even a more stringent environmental legislation will not substantially affect the use of traditional fossil fuels and will not change the producing structure of industrialized countries. Oil will remain the most used fuel, while natural gas will represent the fossil source with the highest growth.

However, at least in industrialized countries, stricter environmental legislation will limit the increase in global energy demand, mainly through energy efficiency measures which could be considered as "the fifth fuel", after coal, gas, oil and uranium.

Renewable sources will continue to contribute only marginally to global energy requirements. Only breakthrough technologies and/or legislative constraints will be able to guarantee a greater market perspectives to these sources.

This scenario represents our view of the general long term risks affecting eni energy activities as result of climate change.

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## **4. Regulatory Opportunities: (CDP6 1(b)(i))**

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### **4.1. Do regulatory requirements on climate change present opportunities for your company?**

As climate change is now high on the international agenda, for business, tackling climate change is not just a necessity but also a huge opportunity for implementing green businesses, developing new clean technologies and exporting sustainable development to developing countries.

For example, investing within the producing countries in order to capture and use associated gas, as in the case of eni, both brings sustainable development to these countries (e.g. producing electricity) and reduces the gas flaring which has negative impacts on the environment.

Even considering the Post-2012 uncertainties associated with the use of carbon credits (CERs/ERUs) allowed to European operators, eni is actively implementing green opportunities within its existing operations.

Eni is concentrating its effort to curb GHG emissions on a significant investing program that includes gas flaring down in Algeria, Congo, Libya and Tunisia (€ 1.26 billion in 2009-2012), energy saving projects and the realization of efficiency gas thermoelectric plants.

Eni is also investing in R&D projects to develop advanced technologies for monitoring fugitive emissions.

Eni actively participates in the "Methane to Markets - M2M" international partnership. The results of its research aimed at testing innovative techniques for the management, control and recovery of natural gas leakages were presented in November 2007 (Beijing) and in May 2008 (Rome) within the framework of this initiative. On May 2008, eni hosted the M2M oil & gas sub-committee members at *Research Centre of Monterotondo*, the event was supported by Italian Ministry for the Environment, Land and Sea. During the day, eni held many presentations to show its expertise and its efforts in methane capture/use and exchange projects. A technology demonstration and an informative laboratory tour were carried out.

With regard to a post-2012 perspective, eni is considering the opportunities offered by the Carbon Capture & Storage (CCS) as a means to give a sustainable future to fossil fuels. Eni is implementing feasibility studies for CCS and start-up of an experimental project.

Also in the light of the EU Directive regarding the geological storage of carbon dioxide that is part of the Energy and Climate Package approved on 17 December 2008, eni is focused on backing - through its expertise in the field - both the Italian and European regulators in implementing a support framework to remove obstacles to the full development of CCS technology.

On February 2008, eni signed a letter of intent with Enel, Italy's largest power company and Europe's second-largest utility for installed capacity, to develop a joint feasibility study on the capture, transport and sequestration of carbon dioxide. While eni has the ability to sequester carbon dioxide in geological sites like depleted hydrocarbon deposits and deep saline aquifers, it is Enel that has the technology to capture the carbon. If the planned feasibility study is successful, eni and Enel will jointly develop a "National Plan" draft for the capture, transport and sequestration of carbon dioxide to be submitted to the government and to Italian and European institutions.

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## **5. Physical Opportunities: (CDP6 1(b)(ii))**

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### **5.1. Do physical changes resulting from climate change present opportunities for your company?**

Paradoxically, even if physical changes from climate change represent, primarily, a risk for the oil and gas industry (for instance, damaging fundamental infrastructures situated in critical areas), on the other hand, it is evident that some extreme events could force up oil & gas prices (e.g. Hurricane Katrina in 2005), and therefore increase oil producers' revenues.

However, despite these occasional and temporary positive effects, eni considers - as stated by the Stern Review - that the medium and long term cost of inaction on climate change is much higher than that of action.

Understanding climate change regional impacts is still in the early stages, but areas thought to be at very high risk include polar region, the Middle East, and Africa. This can have significant implications on energy supply, major societal dislocation, and consequent environmental, economic, and security consequences worldwide. Eni, which was one of the first companies to recognise and invest in relations with the producing countries, has identified opportunities for a new model of cooperation in order to support the countries at high climate risk in tackling the related consequences. Eni is offering proven and tangible benefits as the creation of opportunities for social and economic development in the countries in which it operates.

Moreover, protecting the environment calls for strong and coherent action to mitigate the risks of climate change. Eni has the opportunity to enhance its partnership with accredited research institute in order to build a less carbon intensive world.

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## 6. Other Opportunities: (CDP6 1(b)(iii))

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### 6.1. Does climate change present other opportunities for your company?

In relation to climate change, eni's current business model and strategy open up significant business opportunities.

According to the majority of energy scenarios, the trend in global energy demand will continue to grow in the mid/long-term, although the expected growth rate will vary depending on how the financial crisis evolves. However, in all the available scenarios, fossil fuels are not expected to lose their significant role in the global energy mix, although opinions differ somewhat as to how much of this mix will be represented by alternative and renewable sources. As late as 2020, it is probable that more than 80% of the world's primary energy consumption will be met by oil, coal and natural gas. In particular, natural gas will represent the fossil source with the highest growth.

Of all hydrocarbons, natural gas represents the product with the lowest degree of polluting emissions and the lowest amount of carbon. Currently, almost one quarter of primary energy requirements in Europe are met by natural gas. Therefore, for those companies operating in the sector of natural gas, there are great opportunities of both reducing CO<sub>2</sub> emissions and increasing business activity.

Eni is the leader in the European gas market thanks to its unique competitive position granted by a large and diversified gas supply portfolio, made up of long-term supply contracts and equity gas, direct access to a vast infrastructure system, long-term relationships with key producing countries, and market knowledge.

These assets provide Eni with a solid platform for organic growth in the European market. Eni will achieve these significant growth enhancing synergies from the recent acquisition of Distrigas that will help drive gains in market share in Eni's target markets achieving gas sales of 124 bcm by 2012 at an average growth rate of 7% a year of international sales.

Integration with upstream operations provides the Group with the ability to monetize its equity gas reserves and to pursue joint opportunities in the gas market and in particular in LNG operations.

Eni will also leverage on Distrigas acquisition to grow international LNG sales, reaching total sales of about 17 billion cubic meters by 2012 and increasing its presence outside Europe, in particular in the US market.

In addition, a large installed power generation capacity and the expected increase in volumes sold up to 36.3 TWh by 2012 will enable Eni to extract further value from gas, diversifying its commercial outlets.

Leveraging on a strong presence in all phases of the gas value chain (supply, transport, distribution, marketing and LNG operations), Eni's Gas & Power division represents a key figure in order to give stability to Eni's returns and cash generation.

Eni is also studying new possible technological options for gas transportation: high pressure pipeline transport (TAP), transport in compressed form (CNG), in-collar transformation into other energy vectors such as electric power and hydrogen, and conversion into liquid products (GTL). In particular, the TAP technology could represent a solution to connect markets and production areas located at more than 3,000 km from each other, transporting gas volumes in the order of 20-30 billion cubic meters per year. Within the LNG sector, the company plans to be able to sustain a liquefaction capacity of almost 20 billion cubic meters and a regasification capacity of more than 23 billion cubic meters by 2015. The primary liquefaction projects will be implemented in Nigeria, Egypt, Libya and Angola.

In the next few years, the priorities in European and US energy policies will also be promoting more responsible consumption styles, improving energy efficiency and spreading the use of renewable sources. Eni's strategy is consistent with this target. In fact, besides its effort to improve continuously the efficiency of its core business, eni has also chosen to invest in research into solar energy and biofuels along with the sustainable use of other available resources. All these activities are conducted into a program named "Along With Petroleum" (AWP) with a budget of € 102 million in the period 2009-2012.

The AWP projects have the goal of overcoming the technological obstacles to the development of renewable sources with regards to the use of solar energy and biofuels production – identified by eni as those with the greatest degree of future potential - at the same time achieving superior results in the combined use of fossil and renewable sources in Countries where eni operates. Among these projects, one that is particularly worthy of mention, for breadth of objectives and programme duration, is the strategic alliance with the Massachusetts Institute of Technology (MIT) of Boston, Mass. The core part of the agreement includes the "Solar Frontiers Research Program" for the development of advanced solar technologies, in which eni will invest 25 million dollars over five years. On the other hand, research and development activities on the use of biomasses are conducted mainly at the Novara Research Centre for Non-conventional Energies, and are supported by an extensive network of Universities, international research centres and automotive companies.

In the biofuel field eni's activities are devoted to the production of high-performance biofuels as well as to the development of technologies for the production of second-generation biofuels, able to convert all the biomass into energy products. Lastly, eni is developing a carbon dioxide biofixation and biomass production process based on the use of micro-organisms. Eni also participates in the development of analysis models for second generation bio-ethanol production systems as part of the EU's NILE project (New Improved Lignocellulosic Ethanol).

To enhance its effectiveness and efficiency in technological innovation, eni is developing a system of strategic alliances with Universities, Centres and primary companies engaged in research in the energy sector - or in related areas - of internationally recognized excellence and equipped with a unitary structure for external relations. In 2008, eni signed an important research partnership with the Massachusetts Institute of Technology of Boston, a five-year alliance that includes a total financial commitment of US\$ 50 million (of which US\$ 25 million for the above mentioned "Solar Frontiers Research Program"). Master agreements signed in the same year with the Polytechnics of Milan and Turin will constitute the framework for numerous collaborations, ongoing or about to be set up with these Universities.

In the appropriate conditions, the geological confinement of carbon dioxide (CO<sub>2</sub>) may also contribute significantly to the reduction of its emissions in the air which could, in the future, represent a business opportunity for eni. To this end, in October 2008, eni signed a strategic cooperation agreement with Enel for the joint development of CCS technologies aimed at accelerating the implementation of the entire technology package required for the capture, transfer and confinement of carbon dioxide. This project will allow eni to develop expertise along the entire technological process for CO<sub>2</sub> capture,

transport and storage; this expertise can then be applied to large-scale demonstrative projects strongly encouraged by the European Commission. Concomitantly with the signing of the strategic agreement, eni, Enel and the Italian Ministry for the Environment signed a Protocol of Understanding for the testing and widespread application of CO<sub>2</sub> capture technique and for the promotion of renewable energy sources.

## Greenhouse Gas (GHG) Emissions Accounting, Emissions Intensity, Energy and Trading

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### 7. Reporting Year: (CDP6 Q2(a)(ii))

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7.1. Please state the start date and end date of the year for which you are reporting GHG emissions.

Eni reports GHG emissions for the period 2005-2008.

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### 8. Reporting Boundary: (CDP6 Q2(a)(i))

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8.1. Please indicate the category that describes the company, entities, or group for which Scope 1 and Scope 2 GHG emissions are reported.

- Companies over which financial control is exercised – per consolidated audited financial statements;
- Companies over which operational control is exercised;

The criterion that defines the reference dominion for environmental data is not the same as that used for financial consolidation. According to this latter approach, the environmental data associated with a plant represent eni's share of economic interest in the specific plant, whilst the former is based on operational control. In line with this approach, we reported:

- full environmental data from eni consolidated (fully and proportionally) companies;
- full environmental data from eni affiliated companies/joint venture in exploration & production division where eni is operator.

Where Eni discloses data and information deriving from the activity of the line by line or proportional consolidated companies, all those JVs with National Oil Companies would not be considered, although they produce the most relevant environmental impact. Given this exclusion, our environmental figures would be underestimated and our responsibility would not be in line with the accounting principles of clearness, comparability, completeness and with the accountability position undertaken by Eni.

- Companies in which equity share is held;
- Other (please provide details).

8.2. Please state whether any parts of your business or sources of GHG emissions are excluded from your reporting boundary.

Please refer to 8.1.

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### 9. Methodology: (CDP6 Q2(a)(iii))

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9.1. Please describe the process used by your company to calculate Scope 1 and Scope 2 GHG emissions including the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 GHG emissions.

Since 2004, eni has adopted a GHG Protocol for the monitoring and reporting of GHG emissions worldwide. This protocol is in line with both EU Emissions Trading requirements, international standards and industry best practices, currently represented by the World Business Council for Sustainable Development (WBCSD) / World Resources Institute (WRI) “*GHG Protocol Initiative*” and the American Petroleum Industry (API) “*Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Oil and Gas Industry*”.

Other applied calculation methodology references are:

- Gas Research Institute and US Environmental Protection Agency (GRI), *software and reports*;
- Intergovernmental Panel on Climate Change (IPCC), *Guidelines for National Greenhouse Gas Inventories*;
- US Environmental Protection Agency (EPA), *Protocol for Equipment Leak Emission Estimates, EPA Tanks software*;
- E&P Forum, *Methods for Estimating Atmospheric Emissions from E&P Operations*.

Please also provide:

9.2 Details of any assumptions made.

9.3. The names of and links to any calculation tools used.

Since 2005, every EU ETS eni installation has used a corporate web-based database; this tool was certified by DNV during the ET annual verification process. Furthermore, the accounting and reporting boundary has been extended to remaining business activities relevant in terms of CO<sub>2</sub> emissions (i.e. complete gas transmission and distribution system, engineering and construction activities).

*OpsGHG* is the software name; the system has been selected for the *GHG* emissions management from the individual facility level to the global enterprise level.

Link: <http://www.esp-net.com/Products/opsiEnvironmentalisupTMsup/opsiGHGisupTMsup/tabid/200/Default.aspx>).

9.4. The global warming potentials you have applied and their origin.

In order to calculate the CO<sub>2</sub> equivalent, the GWPs are:

CO<sub>2</sub> GWP: 1

CH<sub>4</sub> GWP: 21

Reference: [http://unfccc.int/ghg\\_data/items/3825.php](http://unfccc.int/ghg_data/items/3825.php).

9.5. The emission factors you have applied and their origin.

The multiple applied emission factors (EFs) are derived from many sources and refer to different estimation tiers. For instance, in combustion/flaring process the most accurate approach used for CO<sub>2</sub> is obtained from the EF from the fuel composition data.

In general, when no fuel composition data is available for the CO<sub>2</sub> and CH<sub>4</sub> calculation, equipment/source/operation tabular EFs are taken from literature referring to the above mentioned GHG Protocols (see question 9.1).

In some cases, CH<sub>4</sub> fugitive emissions are measured directly at the leaking component level, creating specific plant EFs.

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**10. Scope 1 Direct GHG Emissions: (CDP6 Q2(b)(i))**

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Please provide:

10.1. Total gross global Scope 1 GHG emissions in metric tonnes of CO<sub>2</sub>-e

Metric ktons CO <sub>2</sub> e	2005	2006	2007	2008
<b>Total global emissions</b>	61,848	60,719	66,843	62,428

Please break down your total gross global Scope 1 emissions by:

10.2. Country or region

In the following table eni exploration & production division scope 1 emissions are shared between the different geographic areas:

Geographic Area	2008 100% operated
	ktons CO <sub>2</sub> e
Africa	27,229
Europe	1,586
America	597
Asia/Australasia	1,620
Russia	2,171
<b>Total</b>	<b>33,204</b>

Where it will facilitate a better understanding of your business, please also break down your total global Scope 1 emissions by:

10.3. Business division

Metric ktons CO <sub>2</sub> e	2005	2006	2007	2008
<b>exploration &amp; production<sup>(*)</sup></b>	32,959	31,373	35,918	34,051

<b>gas &amp; power</b>	13,663	14,591	15,284	14,200
<b>refining &amp; marketing</b>	8,115	7,911	8,538	7,739
<b>petrochemicals</b>	4,039	4,073	5,646	4,902
<b>engineering &amp; construction</b>	945	1,069	1,238	1,343
<b>corporate and financial companies</b>	283	104	93	95
<b>others</b>	1,844	1,598	127	99

(\*) data include performances of exploration & production division, stogit and tecnomare.

and/or

#### 10.4. Facility

*OpsGHG* was implemented in order to account the GHG data for the whole Eni's operating activities. The number of facilities implemented in 2008 is about 190. The system has been set up with 2 different levels of detail: in general, 6 out of the 8 business units (petrochemical, gas transmission system, power generation, gas geological storage sectors) account the GHG data into the system for every single production facility; as of now, exploration & production and refining & marketing divisions account the GHG data at site level for EU ET facilities, while for the other worldwide operating activities the system is implemented at different aggregated level, for example at "oil & gas production field" level which can include many different platforms or facilities.

In 2008, 81 sites (43% of the total) inserted their GHG data into the database. In 2008 the most of the Eni's users in Europe adopted the software, as well a worldwide training *roll out* is planned for the other Eni Subsidiaries for the next years.

#### 10.5. Please break down your total global Scope 1 GHG emissions in metric tonnes of the gas and metric tonnes of CO<sub>2</sub>-e by GHG type.

<b>Metric ktons CO<sub>2</sub>e</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>CO<sub>2</sub> from combustion and process</b>	35,940	37,430	39,170	37,800
<b>CO<sub>2</sub> equivalent from methane (including from process and fugitive emissions, and excluding flaring and venting)</b>	5,040	5,210	5,530	5,660
<b>CO<sub>2</sub> equivalent from</b>	18,690	15,610	19,920	16,540

<b>flaring</b>				
<b>CO<sub>2</sub> equivalent from venting</b>	2,170	2,460	2,220	2,430

10.6. If you have not provided any information about Scope 1 emissions in response to the questions above, please explain your reasons and describe any plans you have for collecting Scope 1 GHG emissions information in future.

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## 11. Scope 2 Indirect GHG Emissions: (CDP6 Q2(b)(i))

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Please provide:

### 11.1. Total gross global Scope 2 GHG emissions in metric tonnes of CO<sub>2</sub>-e

In 2008, we estimate 3.77 million tCO<sub>2</sub>e of Scope 2 emissions. According to eni's GHG Protocol, Scope 2 indirect emissions reporting includes all imported energy (electricity and heat) distinguishing between the import of energy from other eni installations and third parties. Our estimate only includes indirect emissions from purchased energy from third parties.

<b>Metric tons CO<sub>2</sub>e</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>Scope 2</b>	3,551,909	3,751,059	4,065,555	3,772,812

Please break down your total gross global Scope 2 emissions by:

### 11.2. Country or region

With reference to the UE-27 territory, total Scope 2 GHG emissions of the 60 eni installations participating in the EU ETS were 1.46 million tCO<sub>2</sub>e in year 2008.

This data was derived from the official corporate web-based database *opsGHG* (ref. answer 9.3).

Where it will facilitate a better understanding of your business, please also break down your total global Scope 2 emissions by:

### 11.3. Business division

2008 Scope 2 emissions from EU ETS installation (ref. answer 11.2) are split between the eni operated business sectors in the following way:

<b>Business sectors</b>	<b>ton CO<sub>2</sub>e</b>
exploration & production	19,568
gas & power	150,778
refining & marketing	439,552

petrochemicals	678,472
corporate	9,650
others	159,612
<b>TOTAL</b>	<b>1,457,631</b>

and/or

#### 11.4. Facility

Please refer to answer 10.4.

11.5. If you have not provided any information about Scope 2 emissions in response to the questions above, please explain your reasons and describe any plans you have for collecting Scope 2 GHG emissions information in future.

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## 12. Contractual Arrangements Supporting Particular Types of Electricity Generation: (CDP6 Q2(b)(i) – Guidance)

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12.1. If you consider that the grid average factor used to report Scope 2 emissions in question 11 above does not reflect the contractual arrangements you have with electricity suppliers, (for example, because you purchase electricity using a zero or low carbon electricity tariff), you may calculate and report a contractual Scope 2 figure in response to this question, showing the origin of the alternative emission factors and information about the tariff.

A significant part of eni's purchased electricity takes place in Italy so we have considered the Italian electric grid emission factors reported in the adopted GHG Protocol (ref. question 9). In fact, eni's worldwide purchased electricity is negligible compared to the total.

12.2. If you retire any certificates (eg: Renewable Energy Certificates) associated with zero or low carbon electricity, please provide details.

For each operator (producer or importer of electricity from not renewable sources), Italian law requires that a mandatory percentage of energy comes from renewable sources, in new plants, to be entered into the national electricity system, with reference to the electricity which was entered in the previous year by the same operator, net of cogeneration and – obviously – of renewable energy. The obligation is to be met with green certificates, each of which is equivalent to 1 MWh. Compliance is verified in the following year, with the supply of the certificates and their cancellation.

More details can be found on [www.gse.it](http://www.gse.it).

Since eni is involved in power generation and trading, it is obliged to fulfil this legislation. Most of eni's power generation is in fact from cogeneration plant and most of its import has a guarantee of origin from renewable sources.

The following table shows the amount of green certificates which were supplied for cancellation in the years 2008 and 2009 (obligations born in 2006 and 2007, respectively), by eni S.p.A., enipower S.p.A (eni's power generation company) and its subsidiaries SEF S.p.A. and enipower Mantova S.p.A.

<b>Company Title</b>	<b>2008</b>	<b>2009</b>
eni S.p.A.	1,500	1,982
enipower S.p.A.	161,600	194,603
SEF S.p.A.	4,650	7,742
enipower Mantova S.p.A.	67,650	-
<b>TOTAL</b>	<b>235,400</b>	<b>204,327</b>

Some details regarding exemptions can be found in the following tables, for each of the companies.

**eni S.p.A.**

<b>Year</b>	<b>Electricity generation (MWh)</b>	<b>Exempted Generated Electricity (MWh)</b>	<b>Imported Electricity (MWh)</b>	<b>Exempted Import (MWh)</b>	<b>Export (MWh)</b>	<b>Annulled Green Certificates</b>
2009	1,044,931	892,772	1,502,234	1,414,677	87,557	1,982
2008	1,015,010	865,850	-	-	-	1,500

**enipower S.p.A.**

<b>Year</b>	<b>Electricity generation (MWh)</b>	<b>Exempted Generated Electricity (MWh)</b>	<b>Imported Electricity (MWh)</b>	<b>Exempted Import (MWh)</b>	<b>Export (MWh)</b>	<b>Annulled Green Certificates</b>
2009	20,668,680	15,422,738	-	-	24,800	194,603
2008	19,213,420	13,910,200	1,270,530	997,120	177,760	161,600

**SEF S.p.A.**

<b>Year</b>	<b>Electricity generation</b>	<b>Exempted Generated Electricity</b>	<b>Imported Electricity</b>	<b>Exempted Import</b>	<b>Export (MWh)</b>	<b>Annulled Green</b>
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	(MWh)	(MWh)	(MWh)	(MWh)		Certificates
2009	310,352	6,622	-	-	-	7,742
2008	260,970	8,690	-	-	-	4,650

**enipower Mantova S.p.A.**

Year	Electricity generation (MWh)	Exempted Generated Electricity (MWh)	Imported Electricity (MWh)	Exempted Import (MWh)	Export (MWh)	Annulled Green Certificates
2008	5,058,740	2,740,020	-	-	-	67,650

Exemption for part of the generated electricity is mostly due to its origin from combined heat and power plants, while exemption related to electricity import is due to the certified origin from renewable source, provided by guarantees of origin.

eni also provided RECs (Renewable Energy Certificates) for some customers. In 2009 it has bought and delivered to them 28,000 RECs. These certificates are a voluntary tool, as opposed to Green Certificates, which are compulsory. More details can be found on [www.gse.it](http://www.gse.it)

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**13. Scope 3 Other Indirect GHG Emissions: (CDP6 Q2(c))**

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For each of the following categories, please:

- Describe the main sources of emissions,

According to WBCSD/WRI GHG protocol, the reporting of Scope 3 emissions is optional, therefore eni has decided to exclude Scope 3 emissions from its GHG Accounting and Reporting Protocol, except for outsourced/contracted core activities (Suppliers), such as drilling operations. The related emissions are treated by distinguishing between eni Outsourced/Contracted Core Activities (developed by Saipem, eni's oilfield services and engineering company) and third Party Outsourced/Contracted Core Activities.

In accordance with the WBCSD/WRI GHG Protocol Initiative, eni usually estimates the GHG emissions of its customers (see bullet point below), who are the largest Scope 3 emission-producing activities connected to eni's business.

- Report emissions in [metric tonnes of CO<sub>2</sub>-e](#),

GHG emissions of eni's customers in 2008: 318 million tCO<sub>2</sub>

GHG emissions of eni's customers in 2007 (CDP6): 303 million tCO<sub>2</sub>

GHG emissions of eni's customers in 2006 (CDP5): 307 million tCO<sub>2</sub>

- State the [methodology](#), [assumptions](#), [calculation tools](#), [databases](#), [emission factors](#) (including sources) and [global warming potentials](#) (including sources) you have used for calculating emissions.

2008 “Customer” GHG emissions were estimated by multiplying the amount of oil products (50.68 million toe) and natural gas (69.04 million toe) sold to customers, by the respective emission factors. The average emission factor was 2,66 tCO<sub>2</sub>/toe, closer to that of natural gas than to oil due to eni’s preferential development of a low carbon intensity fuel like natural gas.

For the amount of product sold in 2008, please consult the eni Fact Book 2008 (downloadable from [www.eni.it](http://www.eni.it)). The estimates of CO<sub>2</sub> assume the complete combustion of products sold.

### **Promoting responsible behaviours:**

Combating climate change is an objective which requires a global commitment and concerns companies, public organizations and citizens. Eni is not only an important player in developing sustainable energy strategies in Italy and in the world but also performs its role by proposing itself as a catalyst for a new energy culture, capable of triggering a process for spreading responsible behaviours that operate autonomously and gain momentum. Even in this case relationships are of primary importance as they allow for the creation of alliances with other Companies and public and private institutions in order to reach common objectives.

Eni’s 30PERCENTO social communication campaign - inaugurated in May 2007 and of multiyear duration - has confirmed Eni’s capacity to implement a fundamental role in promoting responsible principles and behaviours, not only within the traditional realm of corporate operations but also with respect to citizens.

Eni 30PERCENTO campaign is based on 24 simple energy saving suggestions for customers based on an Eni study on the energy consumption trends of a typical Italian family of 4. By following Eni’s suggestions, a family could save up to € 1,600 a year without significantly altering its lifestyle.

The results attained after one year from the launching date of the Eni “30Percento” campaign are extremely favourable. For more details, Sustainability Report 2008, page 17.

### **13.1. Employee business travel**

Eni’s Information Communication Technology contribution to its climate change mitigation strategy is attested by several projects, both on going and completed, aimed at energetic efficiency improvement and related CO<sub>2</sub> emissions reduction.

### **GREEN DATA CENTER**

The biggest future Eni IT project is building a new green data centre.

A data centre is a system which turns electricity into reckoning and heat, and the best parameter to value its consumption is PUE (*Power Usage Effectiveness*).

In a conventional Data Centre, PUE is about 3.3 (every 1 W of energy spent, 3.3 are used in cooling and accessories) while standard for green DC is about 1.4, and Eni’s target is PUE equal to 1.2.

To ensure this result, the project will be realized using the latest and most effective technologies:

- Eni's new DC will be built near an Eni electric plant, supplying primary feeding, and this will allow savings from lower energy cost and waste (due to the energy plant's proximity).
- being close to a refinery will also allow use of the same stratum water as cooling water which the refinery has to pull out of the ground.

Technical data:

- size: 4,000 m<sup>2</sup> area to consolidate the Eni's processing poly
- power: 30 Mw at regime (10Mw/m<sup>2</sup> average consumption)
- efficiency: green, that is PUE < 1.4 (aiming at PUE ~ 1.2)
- reliability: Tier IV and more

The estimated emissions reduction deriving from the "Green Data Center" project, operating from 2012, is in the range of 300,000 tCO<sub>2</sub>e/year.

## **GREEN COMPUTING**

In 2007 Eni promoted the intel servers' consolidation through their virtualization, based on VMware technology.

The replacement of the physical servers with virtual machines does not affect performance, but ensures efficiency in power consumption.

The merger of 1,000 virtual servers on 50 physical servers with a consolidation target of 20:1 was achieved in late 2008. The estimated emissions reduction deriving from the "*Virtualization - intel servers consolidation*" project is in the range of 1,100 tCO<sub>2</sub>e/year.

Before the project, the emissions were, approximately, 1,400 tCO<sub>2</sub>e/year.

An additional category of virtualization is the Unix server consolidation, which aims at gathering 400 virtual servers on 26 physical servers. The project is half completed: final completion is expected by August 2009. The estimated emissions reduction deriving from the "*Virtualization - unix servers consolidation*" project is in the range of 1,810 tCO<sub>2</sub>e/year. Current emissions are about 2,300 tCO<sub>2</sub>e/year.

## **VIDEOCONFERENCING SYSTEMS**

Fixed videoconferencing systems in meeting rooms and portable systems for smaller employee groups have been available in all Eni headquarters since October 2005.

Videocall integrated with the voip phone system is available for an increasing number of users at Eni headquarters.

About 250 videoconferences take place every day between Eni locations which means about 60,000 videocalls a year and thus a saving of some 60,000 short-range plane trips, for an estimated emissions reduction of approximately 8,000 tCO<sub>2</sub>e/year.

CO<sub>2</sub> conversion factor: 0.55 Kg\*kW/h national average

CO<sub>2</sub> conversion factor: 0.18 Kg\*kW/h methane plant (Target Eni Green DC)

### 13.2. [External distribution/logistics](#)

### 13.3. [Use/disposal](#) of company's products and services

*For auto manufacture and auto component companies – please refer to the additional questions for these sectors before completing question 13.3.*

### 13.4. Company [supply chain](#)

### 13.5. Other

13.6. If you have not provided information about one or more of the categories of Scope 3 GHG emissions in response to the questions above, please explain your reasons and describe any plans you have for collecting Scope 3 indirect emissions information in future.

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## 14. Emissions Avoided Through use of Goods and Services: (New for CDP 2009)

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14.1. If your goods and/or services enable GHG emissions to be avoided by a third party, please provide details including the estimated [avoided emissions](#), the anticipated timescale over which the emissions are avoided and the [methodology](#), assumptions, [emission factors](#) (including sources), and [global warming potentials](#) (including sources) used for your estimations.

Eni's gas & power division provides technical support to customers, helping them to set up solutions to increase their energy efficiency. This activity also allows eni to obtain white certificates. A white certificate is a tradable title, certifying the saving of 1 toe, which is given by the Italian Energy Authority (more details on [www.autorita.energia.it](http://www.autorita.energia.it) ).

There are three different kinds of certificate available:

- type I: electricity savings (in terms of primary energy);
- type II: natural gas savings;
- type III: other fuels savings.

The evaluation of the number of certificates that may be attributed is made following general or specific rules approved by the Energy Authority, comparing the energy performance to the market standard for the involved application, resulting in a prudent estimation of the saving. The standard duration of a project is generally set at a 5-year period during which savings may be certified, even if its effects can last beyond.

The following table shows the number of white certificates which were obtained by eni's gas & power division in 2008. We provide also an estimation of the CO<sub>2</sub> saving.

Type	Kind of saving	Certified energy saving (toe)	Emission factor (tCO <sub>2</sub> /toe)	CO <sub>2</sub> saving (tCO <sub>2</sub> )
I	Electricity	80	3.11	249

II	Natural gas	2,809	2.35	6,601
III	Other fuels	28,645	3.07	87,940

The projects were able to provide a saving of 31,534 toe, avoiding 94,790 tCO<sub>2</sub>.

The reference for the emission factors of fuels is given by the IPCC Report (other fuels were considered as oil), while for the electricity the emission factor was calculated dividing 0.581 (average emission factor of the thermoelectric power generation in Italy, published by Terna - the Italian TSO - as you can see on <http://www.terna.it/LinkClick.aspx?fileticket=N69MNBtIj9M%3d&tabid=811>) by the 0.187 toe/MWh, which was set by the Energy Authority as a parameter for the calculation of the saving of primary energy related to an electricity saving (Resolution EEN/3/2008; the Italian text and a short description in English it can be found on <http://www.autorita.energia.it/inglese/enlex/08.htm> ).

Società Italiana Per Il Gas, also known as Italgas, the distribution service operator owned by eni, is an obliged subject and has to deliver an amount of white certificates to the Energy Authority, proportional to its share of energy distributed in the previous year. The obligation for year 2008 (compliance in 2009) was 245.067 certificates (including the subsidiary Siciliana Gas, see also Resolution EEN/1/2008, <http://www.autorita.energia.it/inglese/enlex/08.htm>) and was accomplished with 200.067 certificates type I e 45.000 certificates type II.

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## 15. Carbon Dioxide Emissions from Biologically Sequestered Carbon: (New for CDP 2009)

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*An example would be carbon dioxide from burning biomass/biofuels.*

15.1. Please provide the total global carbon dioxide emissions in metric tonnes CO<sub>2</sub> from biologically sequestered carbon.

In general, eni does not emit carbon dioxide from the combustion of biologically sequestered carbon.

Eni's refining & marketing division is not involved in biofuel production, but it trades significant amounts of biofuels, which are generally blended with fossil gasoline and diesel, to be sold to the end-users of the fuels.

The following tables show the amounts of biofuels which were sold in the last 5 years and of blended fuels, whose reduction can be observed in 2008 because of the sale of two subsidiaries (agip espana and agip portogallo), despite the increase in traded biofuels.

Biofuels	2004	2005	2006	2007	2008
Biodiesel (Millions cubic meters)	0.09	0.11	0.18	0.20	0.35
Biogasoline (Millions cubic meters)	0.06	0.09	0.04	0.03	0.31

Blended fuels	2004	2005	2006	2007	2008
Millions tons	12.1	12.5	12.3	12.4	9.9

Moreover, eni's research and development activities are devoted to the production of high-performance biofuels, such as biodiesel obtained from bio-oil hydrogenation and isomerization, with a higher cetane number than traditional diesel oil; another objective of our research activities is to develop technologies for the production of second-generation biofuels, able to convert all the biomass into energy products.

Lastly, eni is developing a carbon dioxide biofixation and biomass production process based on the use of microorganisms. Tests are well underway at the Gela refinery on a process that uses microalgae for the biological fixation of the carbon dioxide generated by the refinery's power plant, the purification of civil or industrial waste water, and the production of biomass to be converted into biodiesel through a proprietary process. Eni also participates in the development of analysis models for second generation bio-ethanol production systems as part of the EU's NILE project (*New Improved Lignocellulosic Ethanol*).

Other research efforts are directed at finding solutions to specific problems of the environments where it operates: one example of this is the feasibility study for the production of renewable energy using an infesting plant found in the Niger Delta. Research and development activities on the use of biomasses are conducted mainly at the Novara Research Centre for Non-conventional Energies, and are supported by an extensive network of Universities, international research centres, and automotive companies (e.g. CHRISGAS, CNR-ITAE Messina, LEAP Consortium, MIT, Polytechnic of Milan, University of Bari, University of Bologna, University of Milan).

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## 16. Emissions Intensity: (CDP6 Q3(b))

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16.1. Please supply a financial emissions intensity measurement for the reporting year for your combined Scope 1 and 2 emissions, including a description of the measurement,

As financial emissions intensity, we decided to use the GHG Scope 1 and Scope 2 emissions per euro of company turnover (net sales from operations).

Eni's net sales from operations for 2008 were € 108,148 million (ref. eni Annual Report 2008, page 6), up € 20,892 million from 2007, or 23.9%, primarily reflecting higher realizations on oil, products and natural gas in dollar terms and higher natural gas sales volumes due to the acquisition of Distrigas. These positives were partially offset by the impact of the appreciation of the euro versus the dollar (up 7.3%).

### 16.1.1. The units, and

- Nominator of the KPI: net sales from operations;
- Denominator of the KPI: sum of the worldwide Scope 1 and Scope 2 emissions reported in question 10.1 and 11.1.

### 16.1.2. The resulting figure.

€ 1,634 per ton of CO<sub>2</sub> directly or indirectly emitted.

16.2. Please supply an [activity related intensity measurement](#) for the reporting year for your combined Scope 1 and 2 emissions, including a description of the measurement,

According to eni's "GHG Accounting and Reporting Protocol" each eni division and company identifies its specific Key Performance Indicators (KPI), in relation to those metrics that are deemed most relevant to their business for measuring performance against eni's climate change strategy:

- Exploration & Production KPI,
- Power Generation's KPI,
- Refining's KPI.

16.2.1. The units, and

- Exploration & Production KPI, expressed in terms of tCO<sub>2</sub> equivalent per ktoe of oil & gas net production,
- Power Generation's KPI, expressed in terms of gCO<sub>2</sub> equivalent per kWh<sub>e+g</sub> produced,
- Refining's KPI, expressed in terms of tCO<sub>2</sub> equivalent per equivalent distillation capacity.

16.2.2. The resulting figure.

SECTOR	UNIT	KPI 2005	KPI 2006	KPI 2007	KPI 2008
Exploration & Production	tCO <sub>2</sub> e/ktoe oil/gas net production	285	254	287*	268
Power Generation	gCO <sub>2</sub> e/kWhe	393	386	391	401
Refining	tCO <sub>2</sub> equivalent / Equivalent distillation capacity	n.a.	1,244*	1,287*	1,275

\* Changed values in comparison to the CDP6 publication.

Increasing energy efficiency is a priority for eni, and all of the company's operational sectors are involved to this effort. Please consider the following for the explanation of trends:

- Power Generation: CO<sub>2</sub> emissions figure for the most thermal electric kilowatt-hour produced by the thermoelectric sector is approximately one-third less than the average Italian figure. Eni's investment plan for maintaining emissions to the level reached entails completing the company's industrial plan with the construction of the last of the 13 planned combined-cycle plants. In 2008, two power units began operating at the Ferrara power plant.
- Refining: following the significant reductions attained in the first years of 2000, emission indices of the oil refinement stayed at excellent levels due to the implemented interventions.

- exploration & production: the e&p sector reported a peak in emissions in 2007 due to the additional emissions created by new assets acquired during the year. These emissions were almost completely eliminated in 2008 (the 2007 data, without the new acquisitions, was equal to 270 ton CO<sub>2</sub>eq/tep).

The GHG emissions are derived from the GHG eni Database and from production data included in the “2007 Consolidated Balance Sheet”.

Please also refers to: [http://www.eni.it/en\\_IT/sustainability/sustainability\\_swf.page](http://www.eni.it/en_IT/sustainability/sustainability_swf.page)

## 17. Emissions History: (CDP6 Q2(f))

17.1. Do emissions for the reporting year vary significantly compared to previous years?

Yes

If so, please explain why, and:

17.1.1. Estimate the percentage by which emissions vary compared with the previous reporting year.

GHG emissions decreased by around 7% mainly due to 17% decrease in gas flaring in the Exploration & Production sector.

Metric ktons CO <sub>2</sub> e	2005	2006	2007	2008
<b>Total global emissions</b>	61,848	60,719	66,843	62,428
<i>Of which:</i> <b>CO<sub>2</sub> equivalent from flaring</b>	18,690	15,610	19,920	16,540

## 18. External Verification/Assurance: (CDP6 Q2(d))

18.1. Has any of the information reported in response to questions 10 – 15 been externally verified/assured in whole or in part?

Yes. Please refer to answer 18.2.

If so, please:

18.2. State the scope/boundary of emissions included within the verification/assurance exercise.

Scope 1 emission data are reported within eni’s Sustainability Report 2008, which was audited by PricewaterhouseCoopers, while the CO<sub>2</sub> emissions falling under the EU ETS, which represented about 40% of the 2008 total, are additionally verified annually by Det Norske Veritas (DNV).

These verification processes are managed at corporate level by means of supply contracts signed after calls for tenders.

Regarding the ETS auditing, there is also a central management of the activities that allows a synergistic issues' resolution. A relevant non-conformities reduction was obtained: from 69% of certificates with remarks in 2005 to 16% in 2008.

### 18.3. State what level of assurance, (eg: reasonable or limited) has been given.

The EU ETS CO<sub>2</sub> emission data Monitoring and Reporting (M&R) follow the European and Italian Guidelines that regulate all uncertainties included in the M&R process and fix the maximum allowed % error for activity data and for emission factors measures. The regulation also covers the calibration procedure of instrumentation. The external verification entity has to check the respect of the overall uncertainty threshold.

### 18.4. Provide a copy of the verification/assurance statement.

- For Scope 1 GHG emission verification, please refer to “*Certificate of Compliance*” in eni’s Sustainability Report 2008 (page 84-85).
- For ETS CO<sub>2</sub> emission verification, please refer to an attached example of the “*attestato di verifica*” issued by DNV to a refinery. The DNV provides a certificate for each verified installation.

### 18.5. Specify the standard against which the information has been verified/assured.

- Scope 1 GHG emissions verification was carried out following the International Standard on Assurance Engagements 3000 (ISAE3000).
- EU ETS CO<sub>2</sub> emissions have been verified against the European ET Directive 2003/87/CE, the relevant EU Decision C(2004) 130, and the respective Italian accomplishment regulation DEC/RAS/854/05.

### 18.6. If not, please state whether you have plans for GHG emissions accounting information to be externally verified/assured in future.

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## 19. Data Accuracy: (CDP6 Q2(e) – New wording for CDP 2009)

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### 19.1. What are the main sources of uncertainty in your data gathering, handling and calculations e.g.: data gaps, assumptions, extrapolation, metering/measurement inaccuracies etc?

Since 2005, the management of GHG emissions has been improved. Each Divisions/BU is equipped with a database in order to account for and report GHG emissions according to eni’s GHG Protocol in order to ensure the completeness, accuracy, transparency and consistency of GHG accounting according to certification requirements. In 2005, the database was adopted by all eni plants located in Europe with interests in EU ETS. In 2007, the tool was implemented worldwide, and user-training courses are ongoing.

In general, GHG calculations are based on fuel consumption and relevant fuel composition data, so the main uncertainly source is connected with these measures and the associated calibration and maintenance activities.

For EU ETS installations the allowed uncertainty is fixed by the regulation and annually assured by an external verification (please refer to answer n. 18.3). In case of failure of the measurement devices, the site must notify immediately the Competent Authority and the time of metering inaccuracies has to be reduced to the minimum level. Referring to the quality fuel composition data, the site has to assure a consistent sampling frequency: this value is obtained through statistical analysis of the composition data trend carried out for a reference year. The oxidation factors, applied to the combustion process calculation, are fixed at eni level, and the related values are:

- 0.995 for gas fuel combustion;
- 0.99 for liquid fuel combustion;
- 0.98 for flaring.

19.2. How do these uncertainties affect the accuracy of the reported data in percentage terms or an estimated standard deviation?

Please refer to 19.3.2.

19.3. Does your company report GHG emissions under any mandatory or voluntary scheme (other than CDP) that requires an accuracy assessment?

Yes, 60 sites fall under the EU ETS Scheme that requires an accurate verification of the annual CO<sub>2</sub> emissions (please refer to the answer 19.1).

If so, please provide:

19.3.1. The name of the scheme.

EU Emissions Trading Scheme (Directive 2003/87/CE).

The European Monitoring and Reporting Guidelines, that define the M&R requirements, are:

- First period 2005-2007, European Decision C(2004)130 def., 01/29/2004;
- Second period 2008-2012, European Decision 2007/589/CE, 07/18/2007.

19.3.2. The accuracy assessment for GHG emissions reported under that scheme for the last report delivered.

The accuracy assessments of the above mentioned European eni installation were carried out at site level; this information is reported in every site monitoring procedure and in the external verification analysis issued by the verifier to the site and the Competent Authority.

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## 20. Energy and Fuel Requirements and Costs: (New for CDP 2009)

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Please provide the following information for the reporting year:

### Cost of purchased energy

20.1. The total cost of electricity, heat, steam and cooling purchased by your company.

20.1.1. Please break down the costs by individual energy type.

We do not currently collect data regarding the cost of electricity, heat and steam. However, we collect the related physical amounts purchased from third parties external to eni business units.

<b>Energy consumption</b>	<b>Unit of analysis</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
Purchased electricity	MWh	7,523,000	7,949,000	8,619,000	8,003,000
Purchased thermal energy (heat, steam)	MWh	902,000	836,000	808,000	622,000

### **Cost of purchased fuel**

20.2. The total cost of fuel purchased by your company for [mobile and stationary combustion](#).

Please refer to 20.1

20.2.1. Please break down the costs by individual [fuel type](#).

Please refer to 20.1

### **Energy and fuel inputs**

#### **Purchased energy input**

20.3 Your company's total consumption of purchased energy in MWh.

100%

#### **Purchased and self produced fuel input**

20.4. Your company's total consumption in MWh of fuels for stationary combustion only. This includes purchased fuels, as well as biomass and self-produced fuels where relevant.

Below is eni's net energy consumption for the financial year 2008 that we collect expressed in millions of toe:

<b>Fuel</b>	<b>Million of toe</b>
Natural Gas	9.14
Plant gas and refinery gas	2.87
BTZ fuel oil	0.73
Diesel	0.81
ATZ fuel oil	0.32
Pet Coke	0.46
FOK	0.11

GPL	0.01
Distilled petrol	0.03
Other fuels	0.28
Purchased Electricity and Heat (without energy trading)	2.13
<b>Total gross primary energy consumption</b>	<b>16.87</b>

The large amount of natural gas in the fuel mix consumption is a result of an intense and progressive fuel switch to low carbon intensity fuels that distinguishes eni activities especially in the electricity generation and E&P sectors.

20.4.1. Please break down the total consumption of fuels reported in answer to question 20.4 by individual fuel type in MWh.

### Energy output

20.5. What is the total amount of energy generated in MWh from the fuels reported in question 20.4?

As for enipower, the eni company involved in electricity production, in 2008 it produced 23.70 TWh of electric energy (with a fuels consumption which amounted to 4.31 million toe).

Eni's KPI represented by CO<sub>2</sub> emissions on thermal electric kilowatt-hour produced is approximately one-third less than the average Italian one. Eni's investment plan for maintaining emissions to the level reached entails completing the company's industrial plan with the construction of the last of the 13 planned combined-cycle plants. In 2008, two power units began operating at the Ferrara power plant. Eni plans to maintain the performance index below 390 gCO<sub>2</sub>/Kwheq in the period 2009-2012.

20.6. What is the total amount in MWh of renewable energy, excluding biomass, that is self-generated by your company?

Specific initiatives relating to renewable energy are currently under way in some eni business units. For further details please see the eni Sustainability Report 2008.

### Energy exports

20.7. What percentage of the energy reported in response to question 20.5 is exported/sold by your company to the grid or to third parties?

In 2008 enipower sold 23.38 TWh of electric energy.

20.8. What percentage of the renewable energy reported in response to question 20.6 is exported/sold by your company to the grid or to third parties?

Please refer above to question 20.6

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## 21. EU Emissions Trading Scheme: (CDP6 Q2(g)(i) – New wording for CDP 2009)

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21.1. Does your company operate or have ownership of facilities covered by the EU Emissions Trading Scheme (EU ETS)?

Yes

If not, please proceed to question 22.

If yes, please give details of:

21.2. The allowances allocated for free for each year of Phase II for facilities which you operate or own. (Even if you do not wholly own facilities, please give the full number of allowances).

<b>Business sectors</b>	<b>2008 EUA</b>	<b>2009 EUA</b>	<b>2010 EUA</b>	<b>2011 EUA</b>	<b>2012 EUA</b>
exploration & production	1,367,949	1,364,735	1,360,986	1,357,772	1,354,023
gas & power	11,611,513	11,560,269	11,256,425	11,104,814	10,970,571
refining & marketing	6,657,421	6,657,421	6,657,421	6,657,421	6,657,421
Petrochemicals	6,007,931	5,770,435	5,770,435	5,770,435	5,770,435
Corporate	109,330	109,330	109,330	109,330	109,330
Others	139,428	139,428	96,372	96,372	96,372
<b>TOTAL</b>	<b>25,893,572</b>	<b>25,601,618</b>	<b>25,350,969</b>	<b>25,096,144</b>	<b>24,958,152</b>

\* Allowances of years 2009 to 2012 refer only to the existing installations.

21.3. The total allowances purchased through national auctioning processes for the period 1 January 2008 to 31 December 2008 for facilities that you operate or own. (Even if you do not wholly own facilities, please give the total allowances purchased through auctions by the facilities for this period).

No. Until now we have not purchased allowances through a national auctioning process. Eni participates in the European Emissions Trading system with 60 plants, including 56 in Italy and 4 abroad. Even if Article 10 of the 2003/87/EC Directive foresees that “for the five-year period beginning 1 January 2008, Member States shall allocate at least 90% of the allowances free”, so leaving the room for a maximum 10% of auctioning, the Italian National Allocation Plan for 2008-2012 does not foresee any share of allowances assigned through auctioning.

21.4. The total CO2 emissions for 1 January 2008 to 31 December 2008 for facilities which you operate or own. (Even if you do not wholly own facilities, please give the total emissions for this period.)

<b>Business sectors</b>	<b>2008 tCO<sub>2</sub></b>
exploration & production	1,159,617
gas & power	11,343,153
refining & marketing	7,778,637
Petrochemicals	4,865,777
Corporate	94,603
Other	71,149
<b>TOTAL</b>	<b>25,312,936</b>

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## **22. Emissions Trading: (CDP6 Q2(g)(ii) – New wording for CDP 2009)**

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22.1. Please provide details of any emissions trading schemes, other than the EU ETS, in which your company already participates or is likely to participate within the next two years.

At the moment, eni participates only in the EU ETS. In the case of non EU-ETS assets, eni monitors the development of the other carbon markets, eventually performing a risk assessment of the possible carbon taxes and emissions' limits.

22.2. What is your overall strategy for complying with any schemes in which you are required or have elected to participate, including the EU ETS?

In order to comply with and manage the Emissions Trading Scheme, it was necessary to develop a group-wide organization at single site level up to the business units and finally consolidated at the corporate level. The Emissions Trading scheme is coordinated by the Corporate Health, Safety and Operational Environment Dept. (HSOE) that draws up a centralized transaction plan for trading allowances among eni's installations in order to achieve optimal use of the credits and minimize external transactions. On a quarterly basis, eni corporate HSE function coordinates the Greenhouse Gas Management Team composed of the business lines HSE managers and Financial Department representatives. The Team is responsible for the yearly approval of the Transaction Plan. The Financial Department is in charge of implementing the EUA trading in line with the approved Transaction Plan.

In addition to participating in the European Emission Trading system, eni is developing, in its industrial activities worldwide, a portfolio of reduction projects based on the Kyoto flexible mechanisms (Clean Development Mechanism and Joint Implementation). As such, eni is leveraging on its widespread presence in developing countries to export environmentally-friendly technology and obtain corresponding emissions reduction certificates which will be more and more useful for its European installations. Flaring down projects in developing countries form part of this strategy. Please see more details on flaring down projects in answer 23.8.

Eni considers carbon as a fundamental factor for assessing investments in order to include the cost of eventual reduction measures at the very beginning of investment decision process.

In the medium to long term, in the light of a much more severe EU Emissions Trading II Phase (2008-2012) and the New Energy Policy for Europe (EPE, 20% minimum reduction in greenhouse gases by 2020 compared to 1990), eni estimates the carbon price for the period 2008-2020 within its Reference Scenario, which provides the business lines with an outlook for all the energy-related strategic variables. Specifically, the forecasts of the equilibrium carbon prices are determined on a regular basis through a market model based on European Emissions Trading and Kyoto framework fundamentals (EUA and CER/ERU supply/demand, economic growth, electricity generation capacity, weather, political sentiment, etc.).

From an operative point of view, in the case of assets subject to EU-ETS, eni performs an investment analysis which also considers the carbon price.

As already stated above, in a medium term perspective (EPE, 2020), eni is also evaluating the potential risk of carbon leakage for some of its activities (e.g. petrochemicals, refining, oil & gas upstream) - a fundamental issue for European competitiveness - which is currently under consideration by the European Commission within the Review of the Emissions Trading Scheme Directive (2003/87/EC).

### 22.3. Have you purchased any project-based carbon credits?

No

If so, please indicate whether the credits are to meet one or more of the following commitments:

- Primarily for compliance purposes,
- Primarily for voluntary offsetting of your own emissions,
- Other (please describe).

Please also:

22.4 Provide details including the type of unit, volume and vintage purchased and the standard/scheme against which the credits have been verified, issued and retired (where applicable).

### 22.5. Have you been involved in the origination of project-based carbon credits?

Yes

If so:

22.6. Please provide details including:

- Your role in the project(s),

CDM Project "Recovery of associated gas that would otherwise be flared at Kwale oil-gas processing plant, Nigeria" (UNFCCC web reference: <http://cdm.unfccc.int/Projects/DB/DNV-CUK1155130395.3/view>), registered by the United Nations in November 2006.

Eni's role: the project was proposed by NAOC, a subsidiary of eni S.p.A. exploration and production division in Nigeria and the operator, with an equity share equal to 20%, of the Joint Venture (JV) with

Nigeria National Petroleum Company (equity share: 60%) and Phillips Oil Company Nigeria Ltd (equity share: 20%).

- The locations and technologies involved,

Location: Nigeria

Technologies: please refer to section A.4.3. of the Project Design Document (PDD).

- The standard/scheme under which the projects are being/have been developed,

Utilized methodology: AM0009 ver. 2 - Recovery and utilization of gas from oil wells that would otherwise be flared

- Whether emissions reductions have been validated or verified,

- The annual volumes of generated/projected carbon credits,

Amount of projected reductions: 1,496,934 metric tonnes CO<sub>2</sub> equivalent per annum

- Retirement method if used for own compliance or offsetting.

22.7. Are you involved in the trading of allowances under the EU ETS and/or project-based carbon credits as a separate business activity, or in direct support of a business activity such as investment fund management or the provision of offsetting services?

No

If so:

22.8. Please provide details of the role performed.

Eni is not involved in the trading of CO<sub>2</sub> certificates as a separate business activity (ref. question 22.2 above); on the contrary, its target is to comply with EU ETS by acquiring project-based carbon credits (CERs-ERUs) and allowances (EUAs) on the Emissions Trading market and, in the medium term, by originating CERs/ERUs through the implementation of CDM and JI projects.

## Performance

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### 23. Reduction Plans: (CDP6 Q3(a))

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23.1. Does your company have a GHG emissions and/or energy reduction plan in place?

Yes

If not:

23.2. Please explain why.

### Goal setting

23.3. Do you have an emissions and/or energy reduction target(s)?

Emissions: reduction of gas flaring emissions

Energy: energy savings programs in refining and petrochemical sectors

23.4 What is the baseline year for the target(s)?

Emissions: baseline year 2007

Energy: baseline year 2008

23.5. What is the emissions and/or energy reduction target(s)?

Emissions: 70% reduction of gas flaring emissions

Energy: eni's energy saving plans aim at avoiding the consumption of:

- about 127 ktep/year in the refining sector;
- about 70 ktep/year in the petrochemical sector.

23.6. What are the sources or activities to which the target(s) applies?

Emissions: oil & gas upstream activities.

Energy: the main activities involved are in the refining and petrochemical sectors, even if increasing energy efficiency is a priority for eni in general, involving all operational activities in this effort.

23.7. Over what period/timescale does the target(s) extend?

Emissions: target year 2012.

Energy: target year 2012.

### GHG emissions and energy reduction activities

### 23.8. What activities are you undertaking or planning to undertake to reduce your emissions/energy use?

Emissions: initiatives aimed at reducing gas flaring are in Tunisia, Libya, Congo, Algeria, Nigeria and Italy:

- Tunisia: "Gas du Sud" Project

Associated gas flaring reduction project through the increase of gas supplied to the National gas transmission system STEG. The associated gas is produced in the Adam and Djebel Grouz fields. The project was completed in 2008.
- Libya: *Bouri* field associated gas reuse

The *Bouri* field is placed in the Libyan offshore, 120 km far from Tripoli. At the moment the associated gas is completely flared. The first phase of the project has the objective to separate the gas from the relevant CO<sub>2</sub> content and to send the purified gas to on-shore Mellitah site in order to export the gas to European market by *Greenstream* pipeline. In the second project phase the separated acid gas (CO<sub>2</sub> + H<sub>2</sub>S) will be re-injected, and the sulphur content (SO<sub>2</sub>) of the flared gas will be reduced.
- Congo: Power Generation from associated gas production

The "Centrale Electrique de Djeno" re-powering (initially a single 25 MWe gas turbine) consists of a second simple cycle gas turbine installation, this new GT started-up on december 2008. By the end of 2009 the start-up of a new combined cycle thermo-power plant is scheduled, this "Centrale Electrique du Congo" of 450 MWe will be placed in Djeno near the existent "Centrale Electrique de Djeno". Both the power plants will be fed with M'Boundi field associated gas production. For this purpose a new associated gas gathering system is commissioned from M'Boundi to Djeno. The project has a social value as well as environmental one because of the increase in power production in the Country.
- Algeria: Zero flaring in 2012

The BRN oil centre receives the associated gas from different production fields (ROM, ZEA, ZEK e REC, BRN, BRSW). The gas is pumped from the fields to the Centre by a multi-phase pumping system in order to re-inject the gas. By the end of 2009 pumping system development is foreseen. Since 2012, the gas will be treated in a new plant (in ROM field) and sent from ROM to BRN through a dedicated mono-phase pipeline.
- Nigeria: Flaring down projects

Nigeria flaring down program continues with the several NAOC (Nigerian Agip Oil Company) projects implementation: construction and upgrade of pipeline gas network, compression stations, gas treatment plants and gas injection facilities. The target is the reduction to 5% the ratio between gas flaring and gas production, in order to maximize the associated gas recovery to collect towards the LNG (*Liquefied Natural Gas*) Terminals - Bonny and Brass.
- Italy: flaring/venting reduction initiatives:
  - Compressors sealing gas recovery at Barbara T1-2 platforms;
  - Flaring reduction in Pineto gas treatment plant;
  - Abatement of associated gas flaring in the Cerro Falcone wells.

Energy: initiatives are numerous and diversified, since they involve interventions on high-complexity plans. Some examples are: energy recoveries, air pre-heating, re-rotorings.

## Goal evaluation

23.9. What benchmarks or key performance indicators do you use to assess progress against the emissions/energy reduction goals you have set?

Emissions: implementation progress of the flaring down projects and path of the correspondent flaring emissions.

Energy: the reference is given by the specific plant consumption before the intervention; this approach allows comparing years with different production levels.

## Goal achievement

23.10. What emissions reductions, energy savings and associated cost savings have been achieved to date as a result of the plan and/or the activities described above? Please state the methodology and data sources you have used for calculating these reductions and savings.

Emissions: GHG emissions from gas flaring in the exploration & production sector decreased by 17% between 2007 and 2008 (ref. question 17 above).

Metric ktons CO <sub>2</sub> e	2005	2006	2007	2008
CO <sub>2</sub> equivalent from flaring	18,690	15,610	19,920	16,540

Energy: in 2008 the achieved energy saving in the refining sector was about 30 ktep (equivalent to about 90 ktCO<sub>2</sub> of avoided emissions). Please refer to answer 23.9 for the related evaluation methodology.

23.11. What investment has been required to achieve the emissions reductions and energy savings targets or to carry out the activities listed in response to question 23.8 above and over what period was that investment made?

Emissions: forecast investment of € 1.26 billion in the 2009-2012 period for flaring down projects in Algeria, Congo, Libya and Tunisia. It must be emphasized that the time schedules and completion dates of the the flaring down projects are largely dependent on local security, logistics and budget approval by NOCs partners in the projects.

Energy: investment expenditure on energy efficiency is confidential.

## Goal planning and investment

23.12. What investment will be required to achieve the future targets set out in your reduction plan or to carry out the activities listed in response to question 23.8 above and over what period do you expect payback of that investment?

Emissions: please refer to 23.11.

23.13. Please estimate your company's future Scope 1 and Scope 2 emissions for the next five years for each of the main territories or regions in which you operate or provide a qualitative explanation for expected changes that could impact future GHG emissions.

Emissions' projections are given up to 2012, because up to now eni has disclosed 2009-2012 Strategic Plan:

Million tonnes CO <sub>2</sub> e	2009	2010	2011	2012
GHG emissions (scope 1)	69.3	64.2	57.1	56.7

\* These figures assume no changes in the present consolidation area.

23.14. Please estimate your company's future energy use for the next five years for each of the main territories or regions in which you operate or provide a qualitative explanation for expected changes that could impact future GHG emissions.

Not available

23.15. Please explain the methodology used for your estimations and any assumptions made.

Data are collected by the Business Units and then sent to eni HSE department, which consolidates the total figures. Estimations take into account both an internal and external reference scenario.

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## 24. Planning: (CDP6 Q3(c))

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24.1. How do you factor the cost of future emissions into capital expenditures and what impact have those estimated costs had on your investment decisions?

In the medium to long term, in the light of a more severe EU Emissions Trading II Phase (2008-2012) and the New Energy Policy for Europe (EPE, 20% minimum reduction in greenhouse gases by 2020 compared to 1990), eni considers carbon as a fundamental factor for assessing investments in order to promote those involving lower emissions.

Eni estimates the carbon price for the period 2008-2020 within its Reference Scenario, which provides the business lines with an outlook for all the energy-related strategic variables. Specifically, the forecasts of the equilibrium carbon prices are determined on a regular basis through a market model based on European Emissions Trading and Kyoto framework fundamentals (EUA and CER/ERU supply/demand, economic growth, electricity generation capacity, weather, political sentiment, etc.).

From an operative point of view, in the case of assets subject to EU-ETS, eni performs an investment analysis, which also considers the carbon price. In the case of non EU-ETS assets, eni performs a risk assessment of the possible carbon taxes and emissions' limits.

## Governance

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### 25. Responsibility: (CDP6 Q4(a))

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#### 25.1. Does a Board Committee or other executive body have overall responsibility for climate change?

Based on the recommendation of the Chief Executive Officer, Eni's Board of Directors [collegially] establishes. Company and Group strategies and objectives, including Sustainability policies [and climate change ones] (Report on Corporate Governance 2008, pag. 10, [http://www.eni.it/en\\_IT/attachments/azienda/corporate-governance/report-corporate-governance2008.pdf](http://www.eni.it/en_IT/attachments/azienda/corporate-governance/report-corporate-governance2008.pdf))

In addition, eni's Health, Safety and Operational Environment (HSOE) and Strategy and Development departments are responsible for the management of Climate Change issues and provide the Board of Directors with periodic updating of carbon management related matters.

The Greenhouse Gas Management Team, part of the HSOE department, is responsible for the yearly approval of the Transaction Plan and all the other climate change related activities (e.g. identifying possible reduction measures, coordinating audits, certification and training, benchmarking eni's GHG position against peers).

The Finance Department is in charge of implementing the EUA trading, as defined within the approved Transaction Plan.

If not:

25.2 Please state how overall responsibility for climate change is managed and indicate the highest level within your company with responsibility for climate change.

If so, please provide the following information:

25.3. Which Board Committee or executive body has overall responsibility for climate change?

Please refer to answer 25.1.

25.4. What is the mechanism by which the Board or other executive body reviews the company's progress and status regarding climate change?

Eni's Health, Safety and Operational Environment (HSOE) department and Strategy and Development department are responsible for the management of Climate Change issues and provide the Board of Directors with periodic updates of carbon management related matters.

The Greenhouse Gas Management Team, part of the HSOE department, is responsible for the yearly approval of the Transaction Plan and all the other climate change related activities (e.g. identifying possible reduction measures, coordinating audits, certification and training, benchmarking eni's GHG position against peers).

The Finance Department is in charge of implementing the EUA trading, as defined within the approved Transaction Plan.

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## 26. Individual Performance: (CDP6 Q4(b))

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26.1. Do you provide incentives for individual management of climate change issues including attainment of GHG targets?

Yes.

If so:

26.2. Are those incentives linked to monetary rewards?

Yes.

Objectives (e.g. definition and implementation of the wide carbon management strategy, successful lobbying activities of the relevant Italian and European authorities) given to managers include a performance indicator focused on sustainability issues as a whole, designed to measure the contribution of all managers and employees to sustainability goals specified for each business function. The sustainability indicator is worth 10% of the entire performance evaluation.

26.3. Who is entitled to benefit from those incentives?

Managers whose activities refer to climate change are rewarded for achieving their specific annual objectives.

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## 27. Communications: (CDP6 Q4(c))

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27.1. Do you publish information about the risks and opportunities presented to your company by climate change, details of your emissions and plans to reduce emissions?

Yes.

If so, please indicate which of the following apply and provide details and/or a link to the documents or a copy of the relevant excerpt:

27.2. The company's Annual Report or other mainstream filings.

The 2008 Annual Report contains an entire section dedicated to Sustainability: "*Commitment to sustainable development*", pages 131-148. Within this section, there is a focus on environmental issues and more specifically on climate change.

[http://www.eni.it/en\\_IT/attachments/publications/reports/reports-2009/AnnualReport2008.pdf](http://www.eni.it/en_IT/attachments/publications/reports/reports-2009/AnnualReport2008.pdf)

See also chapter "Implementation of the Kyoto Protocol" in the 2008 Annual Report on form 20 F

[http://www.eni.it/en\\_IT/attachments/publications/reports/reports-2009/AnnualReportOnForm20F2008.pdf](http://www.eni.it/en_IT/attachments/publications/reports/reports-2009/AnnualReportOnForm20F2008.pdf)

27.3. Voluntary communications (other than to CDP) such as Corporate Social Responsibility reporting.

The Sustainability Report 2008 provides a thorough analysis of climate change implications for eni:

[http://www.eni.it/en\\_IT/attachments/sostenibilita/allegati-sostenibilita/sustainability\\_report\\_2008.pdf](http://www.eni.it/en_IT/attachments/sostenibilita/allegati-sostenibilita/sustainability_report_2008.pdf)

Eni's website contains a detailed section dedicated to sustainability:

[http://www.eni.it/en\\_IT/sustainability/sustainability\\_swf.page](http://www.eni.it/en_IT/sustainability/sustainability_swf.page)

Moreover, the Investor Relations section on the website contains a "Socially Responsible" window from which the Sustainability Report and the answers to the CDP questionnaire are directly downloadable.

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## **28. Public Policy: (CDP6 Q4(d))**

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**28.1. Do you engage with policymakers on possible responses to climate change including taxation, regulation and carbon trading? If so, please provide details.**

Yes, we do.

The Corporate HSOE Department, together with the Public Affairs Communication Department, provides eni's industrial expertise, by collaborating with both the Italian Ministries of Environment and Industry and the European Commission for the definition of the climate change framework at European and Italian levels and the development of the related legislation (Emissions Trading, CCS, Renewables, etc.).

Eni's participation in the European and International policy-making process is also performed in conjunction with competitors or other industrial partners. This is also the case for its participation in National and European organizations that are direct interlocutors of the Regulatory Authorities. Confindustria (the Italian association of industrial producers), Assoelettrica (the Italian association of power producers), Unione Petrolifera (the Italian association of refiners), UNICE (The European employers confederation) and EUROPIA (the European government affairs organisation of the oil refining and marketing industry in the EU and EEA) are just some examples of these organizations.

Eni is also a partner of lobbying organizations or associations at European and International level such as IPIECA, IETA, GROCC, OGP, GGFR as well as a supporter of economic and scientific studies on the mitigation of and adaptation to climate change.

In April 2008, eni cooperated with the *International Energy Forum* Secretary (IEF) in the organization of the XI IEF where Ministry delegations and executives from the main international companies in the industry participated in order to identify energy strategies that would be globally shared and capable of meeting the challenges of gas supply security, global warming and growth in the current world's oil demand.

Eni, considering its relationship with the producer countries, stipulates agreements with local governments to define the initiatives aimed at the construction of infrastructures to promote local development according to the international guidelines on climate change. For example, on 19 May 2008, the company signed a Memorandum of Understanding in Congo with the national authorities for the addition of new initiatives integrating the core business within the non-conventional oil area and in

renewable energy, thereby entrusting eni with a technical cooperation role for the sustainable development of the Country.

In October 2008, the Chief Executives of eni and Enel, in the presence of the Italian Minister of the Environment, signed a strategic agreement to develop the technology for the capture, transport and sequestration of CO<sub>2</sub> and to implement the first Italian project in this area. Contextually, eni, Enel and the Minister of the Environment signed a memorandum of understanding (protocol of agreement) to control and spread the capture technologies of CO<sub>2</sub> and to promote the renewable sources.

Ref. Sustainability Report 2008 cap. 3, [http://www.eni.it/en\\_IT/attachments/sostenibilita/allegati-sostenibilita/sustainability\\_report\\_2008.pdf](http://www.eni.it/en_IT/attachments/sostenibilita/allegati-sostenibilita/sustainability_report_2008.pdf)