

Module: Introduction**Page: Introduction****CC0.1****Introduction**

Please give a general description and introduction to your organization.

The Novartis Mission:

We want to discover, develop and successfully market innovative products to prevent and cure diseases, to ease suffering and to enhance the quality of life. We also want to provide a shareholder return that reflects outstanding performance and to adequately reward those who invest ideas and work in our company.

The Novartis Healthcare Portfolio:

We believe our portfolio best meets the varied and often complex needs of patients and societies. Novartis is positioned to lead in innovation, partner with others and offer solutions to patients across a broad healthcare spectrum. In addition, a diverse portfolio reduces financial risk, bringing greater value to those who invest in our company. Our unique portfolio focuses on science-based healthcare sectors that are growing rapidly, reward innovation, and enhance the lives of patients.

Novartis is the only company with leading positions in each of these key areas:

- Pharmaceuticals: innovative patent-protected medicines
- Alcon: global leader in eye care with surgical, ophthalmology and consumer products
- Sandoz: affordable, high-quality generic medicines and biosimilars
- Consumer Health: self-medication products and treatments for animals
- Vaccines and Diagnostics: vaccines and diagnostic tools to protect against life-threatening diseases

Since Novartis was created in 1996 - when only 45% of net sales came from healthcare - the company has shifted focus to fast-growing areas of healthcare. Our strategy is to provide healthcare solutions that address the evolving needs of patients and societies worldwide.

Novartis People:

With more than 120 000 associates in 140 countries worldwide. Novartis associates share a vision of a better today and tomorrow for patients – a vision that drives our growth and success. The greatest job satisfaction for our associates is the knowledge that they improve the quality of life for patients with increasing precision and efficiency through breakthrough science and innovation. Our performance-oriented culture and responsible approach attract top experts in all areas – research and development, marketing and sales, finance and administration. Our talented associates have made us a global leader in healthcare. Novartis is committed to rewarding the people who invest ideas and work in our company.

Environmental and Social Sustainability:

Novartis believes that careful stewardship of natural resources, particularly tight control of greenhouse gas emissions and energy efficiency, is not only important for the Group but critical for society and future generations.

Social and environmental sustainability is an integral part of our strategy.

Novartis strives to make efficient use of natural resources and to minimize the environmental impacts of its activities and products over their entire life-cycle. Health, safety and environmental impacts are assessed to ensure that the benefits of new products, processes and technologies outweigh remaining risks.

CC0.2

Reporting Year

Please state the start and end date of the year for which you are reporting data.

The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.

We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.

Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed

Tue 01 Jan 2013 - Tue 31 Dec 2013

CC0.3

Country list configuration

Please select the countries for which you will be supplying data. This selection will be carried forward to assist you in completing your response.

Select country

United States of America

Germany

Switzerland

India

Italy

Slovenia

Select country
Austria
Ireland
United Kingdom
Turkey
Spain
China
Singapore
Rest of world

CC0.4

Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

USD(\$)

CC0.6

Modules

As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sectors, companies in the oil and gas industry, companies in the information technology and telecommunications sectors and companies in the food, beverage and tobacco sectors should complete supplementary questions in addition to the main questionnaire.

If you are in these sectors (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will not appear below but will automatically appear in the navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.

If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see <https://www.cdp.net/en-US/Programmes/Pages/More-questionnaires.aspx>.

Further Information

Module: Management

Page: CC1. Governance

CC1.1**Where is the highest level of direct responsibility for climate change within your organization?**

Individual/Sub-set of the Board or other committee appointed by the Board

CC1.1a**Please identify the position of the individual or name of the committee with this responsibility**

- Health, Safety Environment Steering Committee (HSE SteCom) chaired by the company CEO. The Novartis CEO, Joseph Jimenez, is the chairman of the Health, Safety & Environmental Steering Committee (HSE SteCom), which is responsible for authorizing and sponsoring the Energy & Climate strategy. Currently he has delegated this role to the Head of Human Resources, Jürgen Brokatzky-Geiger, who reports directly to the CEO and is a member of the Novartis Executive Committee. HSE SteCom meets three times per year and comprises members of the executive committees of all Novartis Divisions and the head Corporate Health Safety Environment and Business Continuity (CHSE&BC). The Energy and Climate Strategy is managed by the Novartis Group Global Head Environment & Energy within CHSE.
- Undivided Line Management Responsibility: All aspects of HSE at Novartis, including energy and climate, are the undivided responsibility of line management at the various organizational levels (site, country, Division, Group), who are supported by functional units with respective technical expertise.
- Functional Units on Energy and Climate: At Divisional level, Novartis has assigned global energy managers to manage the divisional energy and greenhouse gas (GHG) emission reduction programs. Decisions on divisional energy and climate strategies are included in the annual HSE Group-level Management Reviews with all Divisions, and are a regular agenda item of the HSE SteCom. At company and site levels, local energy manager functions and committees (depending on the size of the site) are assigned to manage local energy efficiency programs. Energy use and GHG emissions are part of the HSE management system, managed by a network of corporate, divisional and site HSE functions. Targets on energy efficiency improvements and climate strategies are included in the individual targets assigned to Health, Safety and Environment Officers (HSEOs), divisional and site-based energy managers and line managers at various levels of the organization. HSEOs, energy managers and line managers who have been assigned energy targets receive cash bonuses when these are achieved or exceeded. Furthermore, all employees, regardless of their functions, can submit innovative projects or ideas to improve energy efficiency and reduce GHG emissions to the Novartis Environment & Energy Award scheme (which will be held for the tenth time in 2013). The winners are judged by an independent panel of energy and environmental experts from universities, research institutes and NGOs under a range of criteria, including: effectiveness, duplicability, use of renewable energy, social and development benefits, payback time and improvements in environmental areas. Winners of the Environment & Energy Awards are rewarded with an all expenses paid trip to Switzerland and receive money for a celebration with their project team.

CC1.2**Do you provide incentives for the management of climate change issues, including the attainment of targets?**

Yes

CC1.2a

Please provide further details on the incentives provided for the management of climate change issues

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator
Business unit managers	Monetary reward	Divisional managers are rewarded for meeting division specific absolute reduction targets on total Scope1 and Scope2 GHG (in tons CO2e), CO2 emissions from vehicles fleet (in tons CO2) and energy savings targets (savings from energy projects in USD and GJ)
Other: Environment/sustainability managers	Monetary reward	Environmental managers are rewarded for meeting division specific absolute reduction targets on total Scope1 and Scope2 GHG (in tons CO2e), CO2 emissions from vehicles fleet (in tons CO2) and energy savings targets (savings from energy projects in USD and GJ)
Energy managers	Monetary reward	Energy managers are rewarded for meeting site specific absolute reduction targets on total Scope1 and Scope2 GHG (in tons CO2e), CO2 emissions from vehicles fleet (in tons CO2) and energy savings targets (savings from energy projects in USD and GJ)
All employees	Recognition (non-monetary)	Environment & Energy Awards program that rewards associates who develop energy saving, renewable energy projects or environmental projects such as water footprint, sustainable packaging or waste and emission reduction
Other: Country Managers	Monetary reward	Country managers are rewarded for reducing CO2 emissions from the vehicles fleet and energy efficiency of buildings

Further Information

Page: **CC2. Strategy**

CC2.1

Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

CC2.1a

Please provide further details on your risk management procedures with regard to climate change risks and opportunities

Frequency of monitoring	To whom are results reported	Geographical areas considered	How far into the future are risks considered?	Comment
Annually	Individual/Sub-set of the Board or committee appointed by the Board	All geographical areas in which we operate are considered.	> 6 years	Novartis manages risks proactively by implementing appropriate preventive and contingency measures. Risks include all climate change and environment-related potential risks and opportunities including natural disasters such as floods, drought, storms and earthquakes; health risks to people e.g. pandemic; safety such as fire and explosions; environmental risks such as water scarcity, spillage, soil contamination, water pollution; and risks related to business continuity e.g. as a consequence of above listed risks related to climate change and others.

CC2.1b

Please describe how your risk and opportunity identification processes are applied at both company and asset level

Risk/opportunity assessment at a company level:

The Novartis risk management process is designed to reduce the residual risk of an event – in terms of its likelihood of occurrence and the severity of its consequences – to an acceptable level for the company overall and for individual facilities. The two most important tools at Novartis for Health, Safety and Environment (HSE), including climate change and other environmental impacts, and related risk management are (1) risk portfolios developed at all sites and consolidated at divisional and group level; and (2) HSE audits. In addition, for business-related risks, a Business Continuity Management (BCM) process and a Novartis Emergency Management (NEM) process are implemented as integral parts of the Novartis risk management framework.

Risk/opportunity assessment at an asset level:

Individual risk portfolios are developed and described by each site by the local experts and consolidated for each Division and for the Company as a whole. A formalized follow-up procedure on the results of HSE audits is in place in each Division according to which corrective actions are implemented by the individual facility.

Frequency of monitoring:

The HSE and BCM risk portfolios are based on a bottom-up approach. Since 1997, Novartis sites develop local risk portfolios each year, covering all aspects of HSE, including climate change and other environmental aspects. These local risk portfolios are then consolidated at divisional level, and finally at Group level, into Corporate HSE and BCM risk portfolios also in an annual frequency. HSE audits also cover issues related to climate change and are conducted according to an annual HSE audit plan. The selection of sites to be audited each year depends on the respective risks expressed in the risk portfolio. Corporate and divisional HSE audit groups conduct the audits following the annually defined auditing program. All major sites are audited at least all five years.

CC2.1c**How do you prioritize the risks and opportunities identified?****Criteria to determine materiality/priorities:**

HSE and BC risk portfolios are based on a bottom-up approach, developed at each site and consolidated on divisional and group levels. Risks are expressed in terms of severity and probability and the risk evaluation and management process includes steps to evaluate measures for reducing both severity and probability and for increasing control levels for the most critical risks to the defined acceptance level. The 2013 HSE Risk Portfolio included 106 risks for which action plans have been developed and implemented from a total of over 800 reported risks. Implementation is controlled by HSE SteCom and at the Annual HSE Business Reviews with all divisions.

Reporting:

The consolidated Corporate Risk Portfolio is presented to and discussed with HSE Steering Committee (HSE SteCom) and the Risk Committee of the Board of Directors (BoD). Action plans for the remaining risks have been developed and are being implemented. Audit results are reported to HSE SteCom at each meeting and to the BoD Risk Committee.

CC2.1d

Please explain why you do not have a process in place for assessing and managing risks and opportunities from climate change, and whether you plan to introduce such a process in future

Main reason for not having a process	Do you plan to introduce a process?	Comment
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CC2.2**Is climate change integrated into your business strategy?**

Yes

CC2.2a

Please describe the process of how climate change is integrated into your business strategy and any outcomes of this process

The Novartis business strategy is to develop and further strengthen a diverse healthcare portfolio, including pharmaceuticals, eye care products, generic medications, consumer health products, and vaccines & diagnostic tools. It is our belief that this is the strongest portfolio for sustained success and to best cope with challenges and opportunities related to healthcare in developed and less developed economies, including additional challenges induced by climate change.

We believe that tropical diseases will become more prevalent when global temperatures rise and global climatic patterns continue to change. Novartis is working intensively on discovering and increasing the availability of medicines to treat these. Through the Novartis Institute for Tropical Diseases (NITD) in Singapore and the Novartis Vaccines Institute for Global Health (NVGH) in Siena, Novartis conducts research and development for treatments and vaccines solely focused on tropical infectious diseases that are currently not receiving adequate attention.

Furthermore, the Novartis Foundation for Sustainable Development (NFSD) plays a key role facilitating basic health programs and helping to develop innovative methods for improved medical care for the poorest people in developing countries.

Energy and climate is a focal point of managing environmental sustainability at Novartis operations worldwide. We have a dual strategy for reducing GHG emissions, primarily from energy and fuel usage. The primary focus is to improve energy efficiency in all our operations and to adopt renewable energy sources wherever it makes technical and economic sense. The second track is to undertake carbon offset projects to complement the internal initiatives to reduce our carbon impact.

i) Influencing processes:

Novartis management is guided by input from a variety of stakeholders in developing aspects of its business strategy, including response to climate change requirements. For example, the policy to set own GHG targets in accordance with the Kyoto protocol and other requirements originated from engagement in the UN Global Compact, based on the belief that governmental schemes can only be successful, if private sector companies actively contribute with targets for their own global operations. The internal communications/reporting processes that achieve this are: reporting of performance. The Corporate targets are approved by ECN, the decision of e.g. engagement in Carbon Offset projects by the CEO and the Chairman of the BoD.

ii) Influencing factors:

Increasing impacts from a changing climate, such as higher temperatures leading to sea level rise, more frequent and more severe weather events, and changing of precipitation patterns, leading to floods or longer drought periods, are highly interlinked in many parts of the world to underdevelopment and poverty. Fighting poverty and helping to develop the less developed in achieving healthier lives and higher levels of welfare by provision of medicine, by the improvement of health care systems and by providing business opportunities to the underprivileged are therefore key areas of Novartis business strategy and its energy and climate program. Our carbon offset projects are not only compensation of part of our own carbon footprint, but also as a contribution to economic development (with our sustainable forestry project in Argentina and the Jatropha project in Mali, West Africa) and to protection of bio-diversity (Afforestation of natural mixed forests in Sichuan, China).

iii) Short term strategy:

In the short term climate change aspects are influencing Novartis operations strategies by several factors:

- Largely different carbon intensities of energy supply between Novartis existing European operations (e.g. CH / AT) and new operations in China: Expansions into Russia and China partly over-compensate our GHG emissions in Europe. We therefore strongly focus on implementing energy efficiency methods in China: At our new research facility in Shanghai, we currently install a best-in-class tri-gen energy centre based on gas, to minimize the use of standard coal-based electricity from

the grid. In addition, the use of "carbon-free" landfill gas is being evaluated.

- Governmental subsidies to support renewable energy sources had helped us to install a 1MW photovoltaic array at one of our sites in California and were/will be a key factor for similar but smaller systems in e.g. the USA (New Jersey) and in Europe (Germany, Italy).

- Change from free allocation to auctioning emission trading allowances in the EU-ETS will become material cost factors at our European sites participating in the scheme in 2013 to 2020.

iv) Long term strategy:

Incorporation of new technologies: In the longer term not only operations factors related to energy efficiency, carbon intensity and pricing will be more relevant for Novartis and require the application of new technology in buildings, clean room air conditioning energy efficiency and application of renewable resources such as wind, solar and geo-thermal energy. Increases in severe effects of sea level rise, extreme weather effects, change in precipitation patterns and water scarcity will also influence the way Novartis selects new locations and how these will be protected against the effects of climate change. Sites in water scarce areas (e.g. our research centre in La Jolla, California) include water scarcity into the risk portfolio for their site and conducted water audits.

Changing core business focus: Indirect effects related to migration, political unrest and expected wider spread of tropical vector diseases such as malaria will influence Novartis business focus more strongly to tropical diseases and change the characteristics of Novartis businesses in these countries and regions where these diseases may spread. Novartis is already today among the leading pharmaceutical companies on tropical diseases such as malaria and dengue fever.

(v) Strategic advantage: With this Novartis is better prepared for diseases that could become critical in relation to climate change and has an advantage in market such as Africa.

(vi) Substantial business decision in the reporting year: Approval for a 4th carbon offset project; stronger business focus on Africa; enlargement of malaria initiative with aspects such as "SMS for Life" in Tanzania and Ghana.

CC2.2b

Please explain why climate change is not integrated into your business strategy

CC2.3

Do you engage in activities that could either directly or indirectly influence public policy on climate change through any of the following? (tick all that apply)

Trade associations

Other

CC2.3a

On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
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CC2.3b

Are you on the Board of any trade associations or provide funding beyond membership?

No

CC2.3c

Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
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CC2.3d

Do you publically disclose a list of all the research organizations that you fund?

CC2.3e

Do you fund any research organizations to produce or disseminate public work on climate change?

CC2.3f

Please describe the work and how it aligns with your own strategy on climate change

CC2.3g

Please provide details of the other engagement activities that you undertake

1) World Business Council for Sustainable Development (WBCSD):

(i) **Engagement process:** i. Method of engagement: Novartis primary method of engagement is being an active member of the WBCSD since its foundation in 1997, contributing to the work-streams of the WBCSD's focus areas and projects. ii. Topics of engagement: Novartis actively contributes to the work-streams on Energy and Climate, Energy Efficient Buildings, Water and Ecosystems Services and Development. Novartis experts regularly participate in WBCSD meetings and working group activities. iii. Nature of engagement: Novartis experts provide case studies and examples and strengthen WBCSD's work towards international negotiations on Climate Policy with feedback on proposals and own contributions. Before the formation of Novartis 1997, both predecessor companies Ciba Geigy and Sandoz were founding members of the WBCSD. Our rationale for participation is because WBCSD is a very active player in policy making on Climate Change, is bringing the business voice to the table of intergovernmental negotiations and is developing tools for companies to e.g. monitor and report GHG emissions and climate change disclosure, energy efficiency management and for company water performance.

(ii) **Actions advocating:** Novartis provides input to WBCSD with case histories and success stories. In 2008 and 2010 two case studies on how Novartis manages the energy efficiency of its global real estate portfolio were posted on the WBCSD webpage. In 2011 a second case study on the Novartis Energy Excellence Award scheme was developed together with WBCSD staff. In the course of the WBCSD's policy work, Novartis is advocating for clear and predictable governmental policies and national and international target setting to reduce GHG emissions as a follow up to the Kyoto Protocol. Already in the past, Novartis set its own internal GHG targets in accordance with the Kyoto Protocol and has committed to apply the flexible mechanisms for carbon offsetting related to the Kyoto Protocol. The perceived impacts of these actions are to influence other companies by setting a good example and to strengthen the voice of the WBCSD as a lobby group to influence the political agenda on climate change.

2) United Nations Global Compact (UN-GC):

(i) **Engagement Process:** i. Method of engagement: Novartis is a founding member of the UN-Global Compact. Klaus Leisinger, the former head of the Novartis Foundation for Sustainable Development, was an adviser to the UN Secretary General Kofi Annan for the scoping of actions and implementation of the UN Global Compact for many years; supporting the Secretary General both on substance and process of the compact. ii. Topic of engagement: Novartis is an active participant in working groups and reports to UN-GC on all aspects required, including on Energy and Climate. Representatives of Novartis are regularly participating in meetings of the UN-GC. iii. Nature of engagement: In 2011 Novartis was an active member and contributor to the UN-GCs in preparing the "Caring for Climate".

(ii) **Actions advocated:** Novartis has voluntarily adopted the targets and schemes of the Kyoto protocol for its global operations. Novartis is a Caring for Climate Signatory and active participant in the programs of this organization, initiated by the UN-GC. By adopting the Kyoto Protocol to its own global operations in 2004, Novartis has committed itself to the objectives of the protocol and demonstrated that the elements of the protocol (targets and tools such as the CDM) are realistic and practical and can be also used by other private sector organizations. This encourages endorsement of the protocol and actions on GHG emission mitigation by other companies. The perceived impacts of these actions are to strengthen the voice of the UN-GC in the political arena and thereby influence the respective agendas on climate change. Novartis also reports its performance according to the UN-GC requirements.

CC2.3h

What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Active members and participants in the WBCSD and UN-GC activities are members of either top management or corporate functional managers of the Company:
WBCSD: The CDO is council member to the WBCSD, the global head HSE&BC is liaison delegate to the WBCSD. Additional managers such as the Novartis Group Global Head Environment and Energy participate actively and contribute to work-goup activities.
UN-GC: The CEO is active members of the UN-GC organization and functional managers of our groups on HSE and Corporate Responsibility are actively involved in UN-GC related activities.

Novartis reporting and disclosure on sustainability and energy and climate are included in our corporate responsibility reporting, which is aligned with GRI, UN-GC requirements. Specific GRI and UN-GC reports can be found on Novartis.com.

CC2.3i

Please explain why you do not engage with policy makers

Further Information

Page: CC3. Targets and Initiatives

CC3.1

Did you have an emissions reduction target that was active (ongoing or reached completion) in the reporting year?

Absolute target

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment
Abs1	Other: Scope 1 Vehicle Emissions	100%	20%	2010	216249	2015	The target for scope 1 GHG emissions from vehicles was already achieved in 2013 with a total reduction of 22% since 2010. Reductions were achieved by the use of more fuel efficient vehicles through the introduction of hybrid gasoline-electric cars, increased use of diesel engines fitted with particulate filters, and other emission reduction options such as liquid natural gas or bio-fuels. Ongoing measures will allow us to further reduce these emissions in the coming years. The target has been approved by ECN.
Abs2	Scope 1+2	100%	15%	2008	1773108	2015	The target is to reduce combined Scope1 and Scope2 GHG emissions by 15% by 2015 and 20% by 2020, including carbon offsets, based on 2008 emissions. This target is split into 2% minimum to be achieved from internal emission reductions and the remaining from carbon offsets. The baseline of 1773kt is slightly corrected with respect to the actual 2008 emissions to include Alcon and Fougera acquisitions after 2008 in the baseline.

CC3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions	Target year	Comment
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CC3.1c

Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment
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CC3.1d

For all of your targets, please provide details on the progress made in the reporting year

ID	% complete (time)	% complete (emissions)	Comment
Abs1	60%	100%	The target to reduce GHG emissions from vehicles by 20% by 2015 based on the 2010 baseline was already achieved in 2013 with a 22% reduction recorded. This represents 110% of the target.
Abs2	71%	97%	GHG emission target for combined Scope1 and Scope2 GHG emissions has been set for the period 2010 - 2015 (15% reduction in absolute GHG emissions on the basis of 2008). In 2013, Novartis achieved a reduction of 14.5% (9.1% from internal saving projects, 5.4% from own carbon offset projects) based on the 2008 baseline. This represents 97% of the target.

CC3.1e

Please explain (i) why you do not have a target; and (ii) forecast how your emissions will change over the next five years

CC3.2

Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?

No

CC3.2a

Please provide details of how the use of your goods and/or services directly enable GHG emissions to be avoided by a third party

CC3.3

Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and implementation phases)

Yes

CC3.3a

Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	15	900
To be implemented*	3	600
Implementation commenced*	22	25500
Implemented*	44	32100
Not to be implemented		

CC3.3b

For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative, years	Comment
Behavioral change	Environment and Energy Awards (EEA) 2013: The Novartis Environment and Energy Awards 2013 (in 2012 for the first year with an expanded scope including environmental categories water, waste and packaging) entailed 130 projects (84 energy, 46 environmental projects) from across the Novartis global organization). 46% of the projects were already completed prior to	47000	11500000	78000000	1-3 years	10	Summary numbers of the Award scheme: 55% of projects with payback less than 2 years. Annual savings of the projects implemented at year end 2013 amounted to USD 11.5mil energy cost savings, 620TJ energy savings, 47000 tCO2 GHG emission reduction and 500000 m3 water savings. In addition, the projects contributed to a 15000 t reduction of primarily solvent waste,

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative, years	Comment
	submission and 55% had a payback of less than 2 years. Annual savings of the projects implemented at the end of 2013 amounted to USD 11.5mil energy cost savings, 620TJ energy savings, 47000 tCO2 GHG emission reduction and 500000 m3 water savings. In addition, the projects contributed to a 15000 t reduction of primarily solvent waste, which have a large Scope 3 GHG impact.						which have a large Scope 3 GHG impact.
Energy efficiency: Building fabric	Novartis has set voluntary energy standards for buildings and building equipment, including building fabric, such as insulation of facades, windows and roofs. All new investment projects must undertake a mandatory "Energy Challenge" process to ensure implementation of energy efficiency improvements, low exergy approaches and options for the use of renewable energy and low carbon energy. Office and laboratory buildings at new Novartis facilities in Basel and Rotkreuz, Switzerland, New Jersey and Boston, USA, Singapore and Shanghai, China and others are implementing best-in-class building fabrics. Building sustainability criteria have been defined and energy efficiency standards have been agreed with local authorities in Basel.				4-10 years	30	Savings and investment included in the above, but not separately specified
Energy	Voluntary energy efficiency				<1 year	5	Savings and investment included in

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative, years	Comment
efficiency: Building services	improvements with building services are managed closely at all Novartis facilities, including research and admin sites, by the Novartis network of energy managers. This is a mandatory function at all medium and large Novartis sites. Building services and building management systems are used to efficiently run energy use in buildings, depending on use schedules and seasonal/daily weather patterns. Energy audits and improvement project evaluations show the potential for 5% to 10% improvements with very little investment, as these often only require adaptations to set points and building management parameters.						the above, but not separately specified
Energy efficiency: Processes	HVAC is a key area for Novartis to optimize energy efficiency in operations that require controlled room conditions such as chemical, pharmaceutical, sterile or clinical operations and laboratories. About 60-90% of our energy consumption in such operations is in the control of clean room conditions (temperature, humidity, air change). We conduct energy audits and workshops to evaluate all optimization opportunities.				1-3 years	5	Savings and investment included in the above, but not separately specified
Low carbon energy purchase	Novartis coordinates multidivisional purchase initiatives in Europe and North America to purchase carbon free, low carbon or green electricity, in				1-3 years	5	Savings and investment included in the above, but not separately specified

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative, years	Comment
	view of reducing our Scope2 GHG emissions. These initiatives allowed us to reduce Scope 2 GHG emissions over last three to four years considerably.						
Low carbon energy installation	In 2012 Novartis installed an integrated anaerobic-aerobic wastewater treatment plant at its Sandoz anti-infectives facility in Rovereto, Italy. This plant treats mycelium sludge from fermentation, sludge from the conventional aerobic wastewater treatment and heavy loaded wastewater in anaerobic digesters to generate bio-gas that is used in the on-site combined heat and power unit. The unit produces 18.2TJ of renewable energy, which saves 1700tons CO2e of GHG emissions of the site each year. Novartis also installed two new solar panel arrays in East Hanover, New Jersey. Additional renewable energy installations include a 1MW solar PV array in California and smaller arrays in New Jersey, Italy, Spain, Germany and Switzerland (overall >2MW), a 175kW on-site small-scale hydroelectric generator in Austria and the use of bio-fuels in Germany (wood chips) and India (bagasse) for steam generation.				4-10 years	25	Savings and investment included in the above, but not separately specified
Transportation: fleet	Considerable reduction of Scope1 GHG emissions have been achieved in the Novartis vehicles fleet by using				1-3 years	5	savings and investment included in the above, but not separately specified

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative, years	Comment
	more fuel efficient vehicles through the introduction of hybrid gasoline-electric cars, increased use of diesel engines fitted with particle filters, and other emission reduction options such as liquid natural gas or bio-fuels. The German fleet organization has put in place an incentive system based on g/km GHG emissions of their fleet vehicles, which allows drivers to gain financial benefits from choosing lower emitting cars. Group purchasing and Corporate HSE jointly launched an initiative on "eco-efficient driving", knowing that conservative driving can additionally reduce fuel consumption by up to 5%.						

CC3.3c

What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Lower return on investment (ROI) specification	We allow a relaxed payback scheme (over the full lifetime of the asset) for energy projects and require that all relevant investment projects include an energy challenge.
Internal incentives/recognition programs	Since 2004, (overall over 10 years) Novartis has sponsored annual Energy Excellence Awards for innovative energy saving and emission reduction projects and achievements at its operations worldwide. The awards recognize outstanding performance in energy management.
Other	Compliance with own group-wide requirements/standards: In 2008, Novartis has issued internal energy and climate procedural requirements and standards for buildings and building/process equipment. The implementation of these standards are controlled by an audit program, with energy and GHG targets, a comprehensive reporting program and with a tight "Energy Challenge" process for all new investments.

CC3.3d

If you do not have any emissions reduction initiatives, please explain why not

Further Information

Page: **CC4. Communication**

CC4.1

Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s)

Publication	Page/Section reference	Attach the document
In mainstream financial reports (complete)	Novartis Annual Report: p62, 67, 72, 73	https://www.cdp.net/sites/2014/24/13524/Investor_CDP_2014/Shared_Documents/Attachments/CC4.1/novartis-annual-report-2013-en.pdf
In voluntary communications (complete)	Novartis HSE Performance Report 2013: p10-12, 14-17, 27	https://www.cdp.net/sites/2014/24/13524/Investor_CDP_2014/Shared_Documents/Attachments/CC4.1/hse-performance-report-2013.pdf
In voluntary communications (underway) – previous year attached	Novartis UN Global Compact Progress Update: p17-20	https://www.cdp.net/sites/2014/24/13524/Investor_CDP_2014/Shared_Documents/Attachments/CC4.1/Novartis_2012_UN_Global_Compact_Progress_Report.pdf
In voluntary communications (complete)	Novartis UN Global Compact Commitment: p55-56	https://www.cdp.net/sites/2014/24/13524/Investor_CDP_2014/Shared_Documents/Attachments/CC4.1/Novartis_UN_Global_Compact.pdf
In voluntary communications (underway) – previous year attached	Novartis GRI Report 2012: p48-51, 54-56	https://www.cdp.net/sites/2014/24/13524/Investor_CDP_2014/Shared_Documents/Attachments/CC4.1/Novartis_2012_GRI_Report.pdf
In voluntary communications (complete)	Novartis Energy & Climate Strategy	https://www.cdp.net/sites/2014/24/13524/Investor_CDP_2014/Shared_Documents/Attachments/CC4.1/Novartis_Energy_and_Climate.pdf
In voluntary communications (complete)	Managing Energy & Mitigating Climate Change (Information from Website)	https://www.cdp.net/sites/2014/24/13524/Investor_CDP_2014/Shared_Documents/Attachments/CC4.1/Managing_energy_and_mitigating_climate_change.pdf

Further Information

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

Have you identified any climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

- Risks driven by changes in regulation
- Risks driven by changes in physical climate parameters
- Risks driven by changes in other climate-related developments

CC5.1a

Please describe your risks driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Cap and trade schemes	EU-ETS: Novartis has 7 sites in the European Union that are part of the European Emissions Trading Scheme (EU-ETS). The total amount of allowances annually for the third Period (NAP III) is 134030 tons (year 2013). With an average price of currently Euro 5 this represents a value of app. Euro 670000. In 2013 these 7 Novartis sites	Increased operational cost	3 to 6 years	Direct	Very likely	Low-medium	The 2013 total gap of 15% is valued to Euro 115000 (USD 150000), which so far could be compensated with surplus from previous years. Over the entire Phase III total cost is not expected to grow over USD	Ongoing strong energy and GHG reduction programs across the organization are in place to work towards the global energy efficiency and GHG reduction targets	The EU-ETS sites and Corporate HSE have very little if any additional management cost to comply with EU-ETS. These are limited to some additional monitoring

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	were able to keep their GHG emissions managed under EU-ETS at a level of 155000 tonnes (0.5% lower than in 2012), but 15% above the amount of allowances received. The gap was compensated in 2013 with surplus from Phase II. Allowances will be further reduced during Phase III between 2014 and 2020, while our ongoing energy and GHG reduction program will also allow for further emission reductions over coming years. Additional regulatory risks identified that will increase the financial implications for Novartis are an expected re-increase in the allowance price and the potential introduction of emission trading schemes in other regions or countries (e.g. USA, Canada, Japan, Australia, China).						0.5mil per year.		and the verification costs, which are estimated to below USD 0.1mil p.a.
International agreements	With respect to regulatory schemes (such as the continued Kyoto protocol and potential future agreements), Novartis has taken a proactive approach towards existing legal schemes on	Increased operational cost	>6 years	Direct	Likely	Medium	Total energy costs were USD 450mil in 2013 and carbon costs were marginal. Energy prices did not increase	Ongoing strong energy and GHG reduction programs across the organization are in place to work towards	Energy projects over last 5 years had an average payback of less than 2-3 year.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	greenhouse gas (GHG) emissions as set forth in its Corporate Energy and Climate Strategy (adopted by the Executive Committee of Novartis in July 2005 and reconfirmed in October 2010 with new targets up to 2020 and in August 2013 with an additional carbon offset project). Novartis will also be impacted in more general terms, when prices of carbon will become more fully to be integrated into prices of goods and services, in particularly energy and water.						in recent years. Since the introduction of our energy program in 2008 we have reduced annual energy costs by USD 68mil through projects compared to a business as usual scenario. Future increases in energy prices and the implementation of carbon costs may have a stronger impact of estimated 10-20% of energy cost in the long-term, i.e. USD 45-90mil per year.	the global energy efficiency and GHG reduction targets	Management costs for the energy management programs were largely over-compensated by the savings achieved by the numerous projects, i.e. no additional costs.
Emission reporting obligations	Novartis could potentially be exposed to regulatory risks due to the growing importance of these schemes, even though climate change currently has limited direct impact on our industry sector (pharmaceuticals, consumer health, generics and vaccines), and does	Increased operational cost	3 to 6 years	Direct	About as likely as not	Low	Additional costs related to regulatory actions are not expected to be introduced in the near future or be implemented broadly. In the coming years it is expected that	Ongoing strong energy and GHG reduction programs across the organization are in place to work towards the global energy efficiency and	No additional management costs are expected as a result of this risk.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	not represent a major commercial risk.						such costs may be limited to a few countries and thus stay below USD 1mil per year.	GHG reduction targets	
Lack of regulation	We believe that a lack of clear international agreements and national legislation on climate change and respective targets may have a negative impact on our ability to plan measures to reduce climate change impact. Novartis has invested in long-term afforestation/reforestation carbon projects, has certified them with formal schemes such as CDM or VCS, and compensates part of its emissions with the offsets gained from these projects. Uncertainty in the application and use of these schemes creates disadvantages for our carbon offset projects and the value of credits developed.	Other: Loss of value of carbon offsets	>6 years	Direct	About as likely as not	Low	As Novartis developed its own carbon offsetting projects and designed them as a business case, the actual price of credits is not a key parameter in our approach. Additional economic, social and environmental values are created with these projects. We also do not intend to trade the credits. The effect of low credit prices is rather immaterial, related to the credibility and acceptance of the offset projects. Any financial	Novartis will continue its carbon offset projects, and add additional sustainability values (social, environmental, economic) into the projects. We are working towards making the carbon offset projects a business case with an economically positive outcome, which also will secure their continuation.	Management costs related to these projects are a marginal part of the total costs required to run the four carbon offset projects, which overall is <USD 0.3mil per year.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
							implication is not expected to exceed USD 1mil per year.		

CC5.1b

Please describe your risks that are driven by change in physical climate parameters

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Snow and ice	Melting of glaciers and related changes in water availability or temporary water scarcity: Novartis has several locations north and south of the Alps in Kundl, Austria, Menges and Lendava, Slovenia and Rovereto, Italy, with fermentation operations that depend on a regular availability of water for	Reduction/disruption in production capacity	>6 years	Direct	Unlikely	Medium-high	Replacing cooling water by mechanical chilling at any of the sites potentially impacted would result in additional energy costs of estimated 20% at these sites, resulting in higher electricity costs of up to USD 20mil per year. Replacement of equipment estimated at USD 50mil and payback of 4-5 years would	Energy Management is a key function at these sites and efficiency improvements and optimization measures are standard aspects of process and facility management.	Additional management costs for change of equipment and replacement if existing techniques would be an estimated USD 0.5mil over several years.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	process cooling. Water resources could become more expensive, or water may not be available for cooling anymore, or rivers could dry out at certain periods of the year.						also become necessary.		
Change in precipitation extremes and droughts	Flooding of operations: Novartis manufacturing operations located in critical areas, e.g. Elbe river plains in Barleben-Magdeburg, Germany, Iowa, Nebraska and Illinois in the US Mid-West, the Mumbai area in India and in the Shanghai area in China, could be flooded during severe weather events with respective damages and production	Reduction/disruption in production capacity	3 to 6 years	Direct	Very likely	Medium	Reinforcement of site infrastructure could amount to an estimated USD 2-5mil per site.	Actions related to flood protection are normal aspects of site engineering and facility management.	Site engineering might use 5-10% more resources over several years when such reinforcements would be implemented.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	interruptions. In order to avoid such events, higher costs will arise to keep such risks within acceptable limits.								
Sea level rise	Flooding of Novartis manufacturing operations at coastal locations: Novartis manufacturing operations in coastal locations, e.g. in Tuas, Singapore, Dhaka, Bangladesh, Navi Mumbai, India, Shanghai area, China or Long Island, USA could be flooded due to sea level rise. We expect higher costs of operation in such areas due to higher demand for protection of areas with high	Increased capital cost	>6 years	Direct	About as likely as not	Low-medium	Reinforcement of site infrastructure could amount to estimated USD 2-5mil per site.	Actions related to flood protection are normal aspects of site engineering and facility management.	Site engineering might use 5-10% more resources over several years when such reinforcements will be implemented.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	asset values from more frequent and repeated flooding events in such areas, resulting in higher capital and operational costs. Operations with smaller asset values or in poorer areas such as in Dhaka, Bangladesh will be required to move to other locations.								
Tropical cyclones (hurricanes and typhoons)	Damage to operations in critical areas: Tropical cyclones or tornadoes are extreme weather events that can cause significant damage and loss of assets at Novartis manufacturing and research operations. Such locations in East- and	Increased capital cost	1 to 3 years	Direct	Likely	Low	Reinforcement of site infrastructure could amount to estimated USD 2-5mil per site.	Actions related to flood protection are normal aspects of site engineering and facility management.	Site engineering might use 5-10% more resources over several years when such reinforcements will be implemented.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	South-East US (e.g. Duluth, Georgia; Holly Springs, North Carolina, Fort Worth, Texas) and in the Caribbean (Puerto Rico) will need higher protection to cope with such increased risk or will be required to move to other locations.								
Induced changes in natural resources	Availability of energy and water: Supply chain screening assessments of Novartis suppliers conducted in 2010 have shown that several types of material and resource supplies are highly sensitive to climate change effects. The supply of electricity, almost any type (hydro-electric	Reduction/disruption in production capacity	3 to 6 years	Indirect (Supply chain)	Very likely	Medium	Increase in energy and water costs in water scarce areas due to further increased water stress could amount to 20-30% of the site energy and water costs. For the top-10 water scarce sites, total electricity costs in 2013 were USD 30mil and total water costs are USD 10mil. An increase as	The management method applied to this risk is a proactive facility and resource procurement and energy/water management approach. Saving programs are being implemented at the top-10 water scarce sites already. Water footprint savings achieved in	Costs associated with running the water savings program are marginal, below USD 0.2mil per year for the entire global program.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>or thermal) to Novartis manufacturing and research operations highly depend on the availability of water. Novartis has identified all its sites located in water scarce areas (projection for 2025) and requires these sites (in e.g. Egypt, Northern Africa; San Diego, South California; Fort Worth, Texas; Mumbai and Dhaka, South Asia and Beijing, Northeast China; Batam, Indonesia) to include direct and indirect water scarcity into the risk portfolio for these sites. The ten top sites with respect to water footprint and water</p>						<p>estimated above would result in an addition USD8-12mil per year.</p>	<p>recent years are partly over 20%. Additional projects are being considered and implemented. The target on water footprint set for 2015 is - 10%.</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>scarcity were required to conduct a water saving program in 2013 including water audit, water flow chart, list of water savings projects and site-specific water savings target. For 2014 and 2015 water savings of about 10% are set as a reduction target at these 10 sites. 10 additional sites with high water footprint of high water scarcity are requested to also implement learnings on water savings made at the top-10 sites so far.</p>								
Induced changes in natural resources	<p>Availability of agro-materials for fermentation processes supplied for Novartis fermentation operations as global</p>	<p>Reduction/disruption in production capacity</p>	<p>>6 years</p>	<p>Indirect (Supply chain)</p>	<p>Likely</p>	<p>Low</p>	<p>Prices for agricultural commodities may increase by 20-30% over the next 10 years.</p>	<p>The unit has an active procurement program in place.</p>	<p>No additional management costs are expected for this aspect.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	commodities represents a risk as the price for such commodities is expected to rise with increasing effects of climate change, due to various climate factors.								

CC5.1c

Please describe your risks that are driven by changes in other climate-related developments

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated Financial Implications	Management method	Cost of management
Increasing humanitarian demands	Increased need and higher expectations to fight tropical diseases: Climate change will affect the spread of tropical diseases like malaria and dengue fever due to changing climate patterns to areas which are today sub-tropical or temperate (e.g. Mediterranean, northern parts of the US, China and areas	Increased capital cost	3 to 6 years	Direct	About as likely as not	Medium	In a unique collaboration with international organizations (e.g. WHO), Novartis has provided more than 250 million Coartem treatment courses to the public sector in Africa (e.g. Kenya and Tanzania) without profit since 2001. These treatments have helped to save	Novartis is very active in supporting the fight against malaria with its innovative combination medicine Coartem and new malaria drugs under development. In a unique collaboration with international organizations (e.g. WHO), Novartis has provided more	Management costs would equally increase by 10%.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated Financial Implications	Management method	Cost of management
	<p>of higher elevation in India and Africa). Novartis is very active in supporting the fight against malaria with its innovative combination medicine Coartem and new malaria drugs under development. In a unique collaboration with international organizations (e.g. WHO), Novartis has provided more than 250 million Coartem treatment courses to the public sector in Africa (e.g. Kenya and Tanzania) without profit since 2001. These treatments have helped to save approximately 550000 lives. If malaria spreads further as a result of climate change, Novartis will experience higher demand for medication and will continue help fighting malaria outside Africa.</p>						<p>approximately 550000 lives. The increased spread may results in an estimated 10% higher demand.</p>	<p>than 250 million Coartem treatment courses to the public sector in Africa (e.g. Kenya and Tanzania) without profit since 2001.</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated Financial Implications	Management method	Cost of management
Other drivers	<p>Biodiversity: Potential reduction in biodiversity caused by climate change may have long term impacts on Novartis' pharmaceutical business. A temperature rise of 1.5 to 2.5C above pre-industrial levels, which are expected by 2050 as a minimum, will lead to the extinction of 20-30% of known plant and animal species (IPCC 2007). With over 60% of all new anti-cancer and anti-infective agents (both important parts of Novartis drug portfolio) being derived from natural products or their derivatives, Novartis could suffer severely from the reduction of biodiversity over the next 30 to 50 years. Current Novartis products based on natural compounds include top-selling brands like Miracalcin, Neoral and Sandostatin, which together bring</p>	Inability to do business	>6 years	Direct	More likely than not	Medium	<p>Current Novartis products based on natural compounds include top-selling brands like Miracalcin, Neoral and Sandostatin, which together bring more than USD 2 billion in net sales. An estimation of potential costs related to this effect is very difficult and cannot be made at this point in time.</p>	<p>Novartis operates a Natural Products Unit (of app. 50 researchers) within its R&D Division, including bio-prospecting programs in Asia and Latin America.</p>	<p>The issue would be covered within the Natural Products Unit.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated Financial Implications	Management method	Cost of management
	more than USD 2 billion in net sales. The Novartis products Sennoside and Coartem are herbal medical products or contain natural compounds that are extracted from plants.								

CC5.1d

Please explain why you do not consider your company to be exposed to risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1e

Please explain why you do not consider your company to be exposed to risks driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1f

Please explain why you do not consider your company to be exposed to risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

[Further Information](#)

CC6.1

Have you identified any climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

- Opportunities driven by changes in regulation
- Opportunities driven by changes in physical climate parameters
- Opportunities driven by changes in other climate-related developments

CC6.1a

Please describe your opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
International agreements	Clear regulation resulting in high value of carbon offsets: An agreement on climate change targets at international negotiations in the coming years will help Novartis in setting its own GHG emission reduction targets that are more realistic than without such agreement. Today the targets set by Novartis of 20% GHG emissions reduction by 2020 could only be linked to targets of individual countries such as Switzerland or the EU. Without agreement, tools for carbon offsetting and carbon trading will also remain unclear or existing	Reduced operational costs	>6 years	Indirect (Supply chain)	About as likely as not	Medium	With an international agreement the carbon offset credits generated would achieve higher prices. The four Novartis carbon offset projects will generate about 6mil tons in 30 years. With a current credit price of USD5-10 (estimated	Novartis has already developed CDM projects in Argentina and China and is developing another one in Colombia. Novartis also conducts a carbon offset project in Mali, based on voluntary schemes (VCS and ISO). The projects are conducted	The management costs for the four offset projects overall are approximately USD 0.5mil per year.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>systems might even further deteriorate. This could reduce the value of established credits based on the current existing official or voluntary carbon offsetting schemes. Novartis has already developed CDM projects in Argentina and China and is developing another one in Colombia. Novartis also conducts a carbon offset project in Mali, based on voluntary schemes (VCS and ISO). The Novartis projects would gain credibility and acceptance with updated international agreements, and the carbon offset credits generated would achieve higher values.</p>						<p>for projects with sustainability benefits) the projects have a total long-term value of USD 30-60mil for the carbon credits alone. Assuming an increase of the price to USD 20, the total value could increase to USD 120mil.</p>	<p>and managed locally by forestry organizations and controlled by Novartis locally and centrally.</p>	
Cap and trade schemes	<p>EU-ETS: Possibility to sell surplus allowances related to increased energy efficiency and GHG emission reduction performance: Novartis might be able to reduce its GHG emissions at the sites included in the EU-ETS to levels that it will have surplus allowances and will be able to sell these to other companies.</p>	Reduced operational costs	3 to 6 years	Direct	Unlikely	Low	<p>Due to the fact that EU-ETS allowances have been reduced by 33% when moving from phase II to Phase III, the potential surplus is expected to be USD <0.1mil by</p>	<p>Ongoing strong energy and GHG reduction programs across the organization are in place to work towards the global energy efficiency and GHG reduction targets</p>	<p>The EU-ETS and Corporate have very little if any additional management cost to comply with EU-ETS. These are limited to some additional monitoring</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
							2020.		and the verification costs, which are estimated to below USD 0.1mil per year.
Voluntary agreements	<p>Voluntary use of Carbon Offset schemes: Novartis has initiated its own carbon offset projects in Argentina (CDM project: Reforestation of Grazing Lands in Santo Domingo, Argentina, registered by UN-FCCC by February 10, 2011), Mali (Mali Jatropha Initiative; a validated VCS/ISO project), China (Afforestation/Reforestation of Degraded land in Southwest Sichuan, China) and Colombia (Reforestation of grazing lands in Hacienda El Manantial, Puerto Lopez, Colombia). These projects will not only produce carbon offsets, that Novartis will be able to use for offsetting part of its GHG emissions, but also generate wider social (economic development and community development) and environmental (water shed management, biodiversity,</p>	Wider social benefits	>6 years	Direct	Likely	Medium	<p>The carbon offset projects in Argentina and Colombia are designed as business cases and will create economic returns at a later stage (estimated 20 years after start) . The benefits will be shared with the operating partners and can grow to USD 2-5mil per year for Novartis locally.</p>	<p>The projects are conducted and managed locally by forestry organizations and controlled by Novartis locally and centrally.</p>	<p>The management costs for the four offset projects overall are approximately USD 0.5mil per year.</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	agro-forestation) benefits. In addition, the projects in Argentina, Colombia and Mali are designed as a business case and are therefore intended to generate long-term economic benefits to Novartis, with a reasonable return of investments and establishment costs.								
Emission reporting obligations	Novartis reporting practices: Novartis is following a proactive reporting and disclosure style, including comprehensive and timely reporting of energy and climate aspects in its annual business report, on the website and in accordance to UN-Global Compact and GRI reporting requirements.	Other: Reputation	1 to 3 years	Direct	Very likely	Low	Positive financial outcome from proactive reporting and disclosure cannot be estimated.	In Novartis disclosure and reporting of non-financial information, including environmental data, are part of Corporate Responsibility (CR) management at Group Level.	Overall cost of CR reporting and disclosure is roughly assessed to be USD 2-5mil per year., including all internal resources needed to collect all the requested performance information from the global organization.

CC6.1b

Please describe the opportunities that are driven by changes in physical climate parameters

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in mean (average) temperature	Due to higher global temperature and increase of expected precipitation levels changes, Novartis expects that tropical vector diseases such as malaria, dengue fever and others will spread into more temperate zones. Thereby, larger percentage of the global population will be affected and will need treatment against these diseases. Novartis has malaria drugs in its portfolio and is working on the development of more effective malaria drugs and on drugs for dengue fever and other	Increased demand for existing products/services	>6 years	Direct	About as likely as not	Low-medium	In a unique collaboration with international organizations (e.g. WHO), Novartis has provided more than 250 million Coartem treatment courses to the public sector in Africa (e.g. Kenya and Tanzania) without profit since 2001. Profits from a gradual spread into more-developing areas will initially be marginal to low, but could become low to medium in the longer term.	Novartis is very active in supporting the fight against malaria with its innovative combination medicine Coartem and new malaria drugs under development. Should malaria and other vector diseases spread more broadly outside less-developed tropical countries, the business of providing medication for such diseases will be included in normal business processes.	Management costs would equally increase by 10%.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	neglected diseases in its Novartis Institute on Tropical Diseases in Singapore (NITD). Businesses selling these drugs will be more profitable if the diseases spread to more developed and richer countries.								

CC6.1c

Please describe the opportunities that are driven by changes in other climate-related developments

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Reputation	Among-the-leader profile in climate change management: The Novartis energy and climate management, and broader Health, Safety and Environmental (HSE) management objective is to be at the forefront together with leading peers. Novartis	Increased stock price (market valuation)	3 to 6 years	Direct	Very likely	Low	Positive financial outcome from proactive energy & climate and HSE programs cannot be estimated.	Novartis global CR and HSE programs are based on a network of experts on local, divisional and group level, including about 500 HSE experts worldwide. Many production facilities are certified to ISO14001,	Total costs for global HSE management covers salaries and programs of approximately 500 associates worldwide.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	has set ambitions targets on absolute GHG emissions reduction and is the only pharmaceutical company that has developed and implemented its own carbon offset projects.							ISO50001 and OSHAS18001 management system standards.	

CC6.1d

Please explain why you do not consider your company to be exposed to opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1e

Please explain why you do not consider your company to be exposed to opportunities driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1f

Please explain why you do not consider your company to be exposed to opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading

Page: CC7. Emissions Methodology

CC7.1

Please provide your base year and base year emissions (Scopes 1 and 2)

Base year	Scope 1 Base year emissions (metric tonnes CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)
Tue 01 Jan 2008 - Wed 31 Dec 2008	686844	1086264

CC7.2

Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

CC7.2a

If you have selected "Other" in CC7.2 please provide details of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

CC7.3

Please give the source for the global warming potentials you have used

Gas	Reference
CO2	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: CFC-11	IPCC Fourth Assessment Report (AR4 - 100 year)

Gas	Reference
Other: CFC-12	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: CFC-13	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: Halon-1211	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: Halon-1301	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: Halon-2402	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HCFC-123	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HCFC-22	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HFC-134	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: HFC-143a	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: Methane	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: Nitrous oxide	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: Sulphur hexafluoride	IPCC Fourth Assessment Report (AR4 - 100 year)

CC7.4

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data at the bottom of this page

Fuel/Material/Energy	Emission Factor	Unit	Reference
Natural gas	0.055	metric tonnes CO2e per GJ	International Energy Agency
Methane	0.056	metric tonnes CO2e per GJ	International Energy Agency
Propane	0.060	metric tonnes CO2e per GJ	International Energy Agency
Distillate fuel oil No 2	0.0737	metric tonnes CO2e per GJ	International Energy Agency
Distillate fuel oil No 5	0.077	metric tonnes CO2e per GJ	International Energy Agency
Diesel/Gas oil	0.0736	metric tonnes CO2e per GJ	International Energy Agency
Motor gasoline	0.0739	metric tonnes CO2e per GJ	International Energy Agency
Jet gasoline	0.0732	metric tonnes CO2e per GJ	International Energy Agency

Further Information

CC8.1

Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Operational control

CC8.2

Please provide your gross global Scope 1 emissions figures in metric tonnes CO₂e

643547

CC8.3

Please provide your gross global Scope 2 emissions figures in metric tonnes CO₂e

968172

CC8.4

Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

CC8.4a

Please provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure

Source	Relevance of Scope 1 emissions from this source	Relevance of Scope 2 emissions excluded from this source	Explain why the source is excluded
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CC8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope 1 emissions: Uncertainty range	Scope 1 emissions: Main sources of uncertainty	Scope 1 emissions: Please expand on the uncertainty in your data	Scope 2 emissions: Uncertainty range	Scope 2 emissions: Main sources of uncertainty	Scope 2 emissions: Please expand on the uncertainty in your data
Less than or equal to 2%	Metering/ Measurement Constraints	In 2006 Novartis implemented a comprehensive and sophisticated data reporting process and data management application that reduces uncertainty in our data to the bare minimum. In 2013, GHG emissions data was collected from 292 reporting units covering practically all Novartis operations world-wide. The data reporting process involves one dedicated person to enter data and a separate person to verify data at the site level. Automatic data plausibility checks are carried out by the Data Management System during data entry. Additional checks are undertaken at the Divisional and Corporate levels. The final data is then review by an independent assurance expert (PwC) before publication in the Novartis Annual Report. Please note that the data reported in this section of the CDP may differ slightly from the data presented in the Novartis Annual Report and Corporate Citizenship Website. The data presented in these publications is based on so-called 9+3 forecasts derived from 9 months of actual data and 3 months of estimated data. The data presented in the CDP is the actual data from the full 12 months of 2013. Potential minor inaccuracies could result from imprecise energy meter readings.	Less than or equal to 2%	Metering/ Measurement Constraints	In 2006 Novartis implemented a comprehensive and sophisticated data reporting process and data management application that reduces uncertainty in our data to the bare minimum. In 2013, GHG emissions data was collected from 292 reporting units covering practically all Novartis operations world-wide. The data reporting process involves one dedicated person to enter data and a separate person to verify data at the site level. Automatic data plausibility checks are carried out by the Data Management System during data entry. Additional checks are undertaken at the Divisional and Corporate levels. The final data is then review by an independent assurance expert (PwC) before publication in the Novartis Annual Report. Please note that the data reported in this section of the CDP may differ slightly from the data presented in the Novartis Annual Report and Corporate Citizenship Website. The data presented in these publications is based on so-called 9+3 forecasts derived from 9 months of actual data and 3 months of estimated data. The data presented in the CDP is the actual data from the full 12 months of 2013. Potential minor inaccuracies could result from imprecise energy meter readings.

CC8.6

Please indicate the verification/assurance status that applies to your reported Scope 1 emissions

Third party verification or assurance complete

CC8.6a

Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Limited assurance	https://www.cdp.net/sites/2014/24/13524/Investor CDP 2014/Shared Documents/Attachments/CC8.6a/Corporate Responsibility Section of Novartis AR 2013.pdf	Statement is shown on the last page of the Corporate Responsibility section of the 2013 Novartis Annual Report (p75)	ISAE3000	100

CC8.6b

Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emissions Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission
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CC8.7

Please indicate the verification/assurance status that applies to your reported Scope 2 emissions

Third party verification or assurance complete

CC8.7a

Please provide further details of the verification/assurance undertaken for your Scope 2 emissions, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of Scope 2 emissions verified (%)
Limited assurance	https://www.cdp.net/sites/2014/24/13524/Investor CDP 2014/Shared Documents/Attachments/CC8.7a/Corporate Responsibility Section of Novartis AR 2013.pdf	Statement is shown on the last page of the Corporate Responsibility section of the 2013 Novartis Annual Report (p75)	ISAE3000	100

CC8.8

Please identify if any data points other than emissions figures have been verified as part of the third party verification work undertaken

Additional data points verified	Comment
Year on year change in emissions (Scope 1)	As the data displayed in our Annual Report includes Scope 1 data from the previous year, this data is also verified during the assurance provision process. Annual Report page 73.
Year on year change in emissions (Scope 2)	As the data displayed in our Annual Report includes Scope 2 data from the previous year, this data is also verified during the assurance provision process. Annual Report page 73.
Year on year change in emissions (Scope 1 and 2)	As the data displayed in our Annual Report includes total Scope 1 and Scope 2 data from the previous four years, this data is also verified during the assurance provision process. Annual Report page 62.
Progress against emission reduction target	Progress against a selection of targets, including the total GHG emissions target, are displayed in the Corporate Responsibility section of the Novartis Annual. More detailed information is included in the section "Protecting the Environment". Progress against the emission reduction target is therefore also verified during the assurance provision process. Annual Report pages 67 and 72.
Emissions reduction activities	The content of the "Protecting the Environment" section of the Annual report provides more details on our specific GHG emission reduction activities during 2013 including details of a biogas power plant installed at one site, a new solar array at another site and a geothermal heating project at Novartis HQ. In addition, an update on our carbon offset projects is also provided. This text is also verified by PricewaterhouseCoopers during their assurance provision process. Annual Report page 72.

CC8.9

Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

CC8.9a

Please provide the emissions from biologically sequestered carbon relevant to your organization in metric tonnes CO2

Further Information

The limited assurance statement from PricewaterhouseCoopers is on the last page of the attached documents, which is the complete Corporate Responsibility section of the 2013 Novartis Annual Report. This is to show the scope of the limited assurance. The PwC statement alone is attached below.

Attachments

[https://www.cdp.net/sites/2014/24/13524/Investor CDP 2014/Shared Documents/Attachments/InvestorCDP2014/CC8.EmissionsData\(1Jan2013-31Dec2013\)/PwC_Limited_Assurance_2013_Novartis.pdf](https://www.cdp.net/sites/2014/24/13524/Investor%20CDP%202014/Shared%20Documents/Attachments/InvestorCDP2014/CC8.EmissionsData(1Jan2013-31Dec2013)/PwC_Limited_Assurance_2013_Novartis.pdf)

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2013 - 31 Dec 2013)

CC9.1

Do you have Scope 1 emissions sources in more than one country?

Yes

CC9.1a

Please break down your total gross global Scope 1 emissions by country/region

Country/Region	Scope 1 metric tonnes CO2e
United States of America	185657
Austria	75898
United Kingdom	52820
Germany	46691
Italy	37210
Slovenia	29659
Spain	23279
Switzerland	18183
Ireland	15940
Japan	14240
Rest of world	143970

CC9.2

Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

- By business division
- By GHG type
- By activity

CC9.2a

Please break down your total gross global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)
Pharmaceuticals	218967
Sandoz	214966
Alcon	108140
Vaccines & Diagnostics	48104
Consumer Health	26390
Novartis Research	18162
Novartis International	8818

CC9.2b

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

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
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CC9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 emissions (metric tonnes CO2e)
CO2	631403
HFCs	12145
SF6	0
N2O	0
CH4	0

CC9.2d

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

Activity	Scope 1 emissions (metric tonnes CO2e)
Manufacturing (onsite combustion & processes)	381386
Administration (onsite combustion & processes)	57652
R&D (onsite combustion & processes)	35776
Sales (vehicle emissions)	168733

CC9.2e

Please break down your total gross global Scope 1 emissions by legal structure

Legal structure	Scope 1 emissions (metric tonnes CO2e)
-----------------	--

Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2013 - 31 Dec 2013)

CC10.1

Do you have Scope 2 emissions sources in more than one country?

Yes

CC10.1a

Please break down your total gross global Scope 2 emissions and energy consumption by country/region

Country/Region	Scope 2 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted for CC8.3 (MWh)
United States of America	357391	714049	10672
India	79029	93021	0
Switzerland	78285	524653	90352
Germany	75035	432435	44995
Italy	62058	222262	24903
China	49803	116031	0
Slovenia	38457	197737	0
Spain	28883	75562	0
Singapore	24507	59719	0
Malaysia	24355	39629	0
Rest of world	150369	775368	90084

CC10.2

Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By business division
By activity

CC10.2a

Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2 emissions (metric tonnes CO2e)
Sandoz	298119
Alcon	268251
Pharmaceuticals	207443
Vaccines & Diagnostics	91649
Novartis Research	63525
Consumer Health	38937
Novartis International	248

CC10.2b

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

Facility	Scope 2 emissions (metric tonnes CO2e)
----------	--

CC10.2c

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

Activity	Scope 2 emissions (metric tonnes CO2e)
Manufacturing	720159
Administration	148389
R&D	99624

CC10.2d

Please break down your total gross global Scope 2 emissions by legal structure

Legal structure	Scope 2 emissions (metric tonnes CO2e)
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Further Information

Page: CC11. Energy

CC11.1

What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

CC11.2

Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year

Energy type	MWh
Fuel	2276955
Electricity	2520972
Heat	178038
Steam	551455
Cooling	0

CC11.3

Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Natural gas	2144268
Distillate fuel oil No 2	76066
Distillate fuel oil No 5	12984
Other: Waste - Fossil in Nature	43637
Other: Bagasse	27425
Wood or wood waste	12143
Other: Waste - Biological in Nature	2560

CC11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the Scope 2 figure reported in CC8.3

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comment
Supplier specific, backed by instruments	261006	The figure reported here is the total amount of energy purchased that is generated from renewable energy sources (photovoltaic, solar-thermal, geothermal, wind, biomass or small-scale hydroelectricity <300kW). Many of our sites, particularly in Europe and the US, have chosen to purchase "low carbon energy". In order to report energy purchased from renewable sources, our reporting guidance stipulates that sites should obtain a certificate issued by a third party guaranteeing the renewable energy content of the energy mix. Such certificates are provided by the energy suppliers. Nearly 6% of all energy purchased at Novartis is generated by renewable energy. This percentage increases to 40% when also considering large-scale hydroelectric power generation.

Further Information

CC12.1

How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?

Decreased

CC12.1a

Please identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year

Reason	Emissions value (percentage)	Direction of change	Comment
Emissions reduction activities	1.8	Decrease	Novartis reduced total GHG emissions by 1.8% between 2012 and 2013 due to a number of energy reduction projects, a shift towards less carbon intensive fuel sources (oil to gas), increased onsite generation of energy using renewable technologies and the increased purchasing of low carbon energy.
Divestment	0		Novartis did not divest any parts of the organization in 2013.
Acquisitions	0		Novartis did not acquire any major operations in 2013.
Mergers	0		Novartis did not merge with any other company in 2013.
Change in output	0		There was no sizable change in production output from Novartis in 2013.
Change in methodology	0		We did not change our methodologies for reporting GHG emissions or progress towards our GHG emission reduction targets in 2013.
Change in boundary	0		We did not change operational boundaries for our reporting GHG emissions in 2013.
Change in physical operating conditions	0		The physical operating conditions of our operations did not change in 2013.
Unidentified	0		No unidentified changes are noted in 2013.
Other	5.4	Decrease	5.4% of the 2013 CO2e emissions could be offset by carbon sequestered in our carbon offset projects in Argentina and Mali.

CC12.2

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.000028	metric tonnes CO2e	unit total revenue	4.0	Decrease	Novartis reduced total GHG emissions by 1.8% between 2012 and 2013 due to a number of energy reduction projects, a shift towards less carbon intensive fuel sources (oil to gas), increased onsite generation of energy using renewable technologies and the increased purchasing of low carbon energy. At the same time, sales increase by 2.2%.

CC12.3

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per full time equivalent (FTE) employee

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.000012	metric tonnes CO2e	FTE employee	6.5	Decrease	Novartis reduced total GHG emissions by 1.8% between 2012 and 2013 due to a number of energy reduction projects, a shift towards less carbon intensive fuel sources (oil to gas), increased onsite generation of energy using renewable technologies and the increased purchasing of low carbon energy. At the same time, the number of Novartis FTEs increased by 4.9%.

CC12.4

Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.000306	metric	square meter	5.0	Decrease	Novartis reduced total GHG emissions by 1.8% between 2012 and 2013 due to a

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
	tonnes CO2e				number of energy reduction projects, a shift towards less carbon intensive fuel sources (oil to gas), increased onsite generation of energy using renewable technologies and the increased purchasing of low carbon energy. At the same time, the square metres of floor area occupied by Novartis sites increased by 3.3%.

Further Information

Page: CC13. Emissions Trading

CC13.1

Do you participate in any emissions trading schemes?

Yes

CC13.1a

Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership
European Union ETS	Tue 01 Jan 2013 - Tue 31 Dec 2013	134030	10000	154319	Facilities we own and operate

CC13.1b

What is your strategy for complying with the schemes in which you participate or anticipate participating?

Novartis is in full compliance with EU-ETS requirements. It is the strategy to minimize emissions from these sites in order to remain within the amount of allowances being allocated.

The strategy includes coordination between the seven sites being involved with regular contacts and information exchange. A corporate trading strategy was developed, which determines conditions for internal trading. As long as total shortage is below certain limits, sites are free to sell or buy allowances if needed.

Experience in Phase I and II has shown that sites were able to reduce their emissions considerably more than expected, when we regularly achieved a surplus. The allowances for Phase III are now 33% lower compared to Phase II. This is a strong motivator to continue our strong GHG emission reduction program.

In addition, Novartis's strategy is to voluntarily offset part of its global total Scope 1 and Scope 2 GHG emissions with own originated carbon offset projects (forestry and agriculture). The offsets generated by these projects will be annually monitored and accounted every year to compensate part of Novartis global total GHG emissions. Credits received under the CDM or VCS schemes are voluntarily retired after issuance.

CC13.2

Has your organization originated any project-based carbon credits or purchased any within the reporting period?

Yes

CC13.2a

Please provide details on the project-based carbon credits originated or purchased by your organization in the reporting period

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits cancelled	Purpose, e.g. compliance
Credit Origination	Forests	CDM project: Reforestation of Grazing Lands in Santo Domingo, Argentina, registered by UN-FCCC by February 10, 2011. 100188 ICER credits issued in 2013 for the period May 2007 to Oct 2012. These credits were retired at UN-FCCC as they had been accounted to offset part of the 2012 Novartis global GHG emissions.	CDM (Clean Development Mechanism)	100188		Yes	Voluntary Offsetting
Credit Origination	Agriculture	Mali Jatropha Initiative; a validated VCS/ISO project; staged project; credits issued in 2012 and 2013	VCS (Voluntary Carbon)	4241		Yes	Voluntary Offsetting

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits cancelled	Purpose, e.g. compliance
			Standard)				
Credit Origination	Forests	CDM Project: Afforestation/Reforestation on Degraded Land in Southwest Sichuan, China, registered by UN-FCCC by February 2013	CDM (Clean Development Mechanism)	0		Not relevant	Voluntary Offsetting
Credit Origination	Forests	CDM Project: Reforestation of grazing lands Hacienda El Manantial in Puerto Lopez, Colombia, submitted to UN-FCCC under Prior Consideration	CDM (Clean Development Mechanism)	0		Not relevant	Voluntary Offsetting

[Further Information](#)

Page: CC14. Scope 3 Emissions

CC14.1

[Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions](#)

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using primary data	Explanation
Purchased goods and services	Relevant, calculated	1020000	The amount of Scope3 GHG emissions for purchased goods and services reported here is an estimation based on the volume of spend with the top 6922 suppliers to Novartis (representing USD 8,7bn of spend) linked with average emission intensities by industry sector. The figure was estimated for the year 2010 in a supply chain screening project conducted by the consulting company TruCost, based in London. TruCost has developed a database with carbon	50.00%	This study was undertaken in 2011 and has not been repeated.

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using primary data	Explanation
			impact from a large number of companies in various sectors and applies average impacts (e.g. carbon) to the companies in each of these sectors per unit of sales. The impact of the expenditure with Novartis is determined by multiplication of impact per sale times expenditure with Novartis. The TruCost analysis covered 1081 top Novartis suppliers in this period, representing 90% of Novartis' global purchase expenditure with the 6922 top suppliers included in the study; impacts analyzed were carbon, water and waste. Amounts were extrapolated to 100% expenditure from the 90% included in the study. Scope2 GHG emissions from utility suppliers, included in the supply chain screening as part of the overall supply chain impact, were subtracted from the above total, due to the fact that Novartis determines and reports Scope2 GHG emissions directly, in accordance with the GHG Protocol. The study described above has not been repeated since 2011, however, further work on more accurately quantifying Scope 3 GHG emissions from the supply chain will be undertaken in the future.		
Capital goods	Relevant, calculated	180000	This data is estimated on the basis of the gross floor area of administration and manufacturing buildings operated by Novartis (accurate primary data) and assumptions for GHG emission factors associated with these buildings and their contents.	50.00%	This study was undertaken in 2010 and has not been repeated.
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Not relevant, explanation provided				There are no other fuel and energy related activities apart from perhaps the transportation of fuel, however, the GHG emissions would not be material for Novartis operations.
Upstream transportation and distribution	Not relevant, explanation provided				Considering the Scope 3 emissions from downstream transportation, it is assumed that these emissions are not relevant.
Waste generated in	Relevant,	100000	This is a calculation based on the various types and amounts	100%	A procedure was installed to

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using primary data	Explanation
operations	calculated		of waste (accurate primary data) and respective assumptions for GHG emission factors from each of these waste types.		calculate GHG emissions from reported waste data, based on emission factors determined for each waste category and disposal path.
Business travel	Relevant, calculated	284720	Data obtained from Hogg Robinson Group (HRG), the travel agency responsible for booking over 95% of Novartis business travel for 2013 worldwide. Data was calculated from miles traveled in different flight distances (intercontinental, international, domestic) and booking classes for each individual country, added to a total. It covers all flight travel for Novartis employees plus service providers on their trips for Novartis. Calculations are based on emissions factors used by DEFRA.	95.00%	This data is provided quarterly by Hogg Robinson Group.
Employee commuting	Relevant, calculated	144000	Novartis calculated this data on the basis of the regional distribution of employees (accurate primary data) and respective assumptions for GHG emission factors for private and public transport in each region.	50.00%	This study was undertaken in 2010 and has not been repeated.
Upstream leased assets	Not relevant, explanation provided				Novartis does not maintain many upstream leased assets and any GHG emissions associated with these assets would not be material.
Downstream transportation and distribution	Not relevant, calculated	57000	This calculation is based on the following assumptions derived from regional production types and volumes (accurate primary data): 1) All products are transported over 500 km by train or 40 t lorry (50% each) 2) All products are transported by small lorries on the last 25 km 3) Products delivered to internal and external destinations are treated equally 4) 10% of all products are transported by ship for 5000 km 5) 3% of all products are transported by airplane for 5000 km	50.00%	Compared to the total Scope 1, 2 & 3 emissions from Novartis, these emissions are not considered relevant.
Processing of sold products	Not relevant, explanation provided				Novartis goods are not processed further after they are sold.

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using primary data	Explanation
Use of sold products	Relevant, calculated	112984	The use of Novartis products does not generally result in GHG emissions, with the exception of an inhaler product that uses HFC R134a as a propellant. All quantities of HFC R134a used in the production of the inhaler product are measured. GHG emissions are calculated using the IPCC emissions factor for HFC 134a.	100.00%	The use of Novartis products does not generally result in GHG emissions, with the exception of an inhaler product that uses HFC R134a as a propellant.
End of life treatment of sold products	Not relevant, explanation provided				It is assumed that any GHG emissions associated with the end of life of sold Novartis products are not relevant.
Downstream leased assets	Not relevant, explanation provided				Any GHG emissions associated with downstream leased assets are not considered relevant.
Franchises	Not relevant, explanation provided				Any GHG emissions associated with franchises are not considered relevant.
Investments	Not relevant, explanation provided				It is believed that any GHG emissions associated with investments would not be material.
Other (upstream)	Not relevant, explanation provided				Any GHG emissions associated with other upstream activities are not considered relevant.
Other (downstream)	Not relevant, explanation provided				Any GHG emissions associated with other downstream activities are not considered relevant.

CC14.2

Please indicate the verification/assurance status that applies to your reported Scope 3 emissions

No third party verification or assurance

CC14.2a

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of Scope 3 emissions verified (%)
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CC14.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Yes

CC14.3a

Please identify the reasons for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Business travel	Other: Travel cost cutting policies.	6	Decrease	Scope 3 GHG emissions from business travel decreased from 303,128 tons in 2012 to 284,720 tons in 2013. The decrease is predominately due to travel restrictions to cut costs.
Waste generated in operations	Other: No change	0	No change	Waste quantities in 2013 were roughly the same as those reported in 2012. As a consequence, Scope 3 GHG emissions due to waste disposal remained practically unchanged.
Use of sold products	Change in output		Increase	Scope 3 GHG emissions from sold products increased from 83,056 tons in 2012 to 112,984 tons in 2013. The increase is associated with increased production of an inhaler product containing HFC R134a.

CC14.4

Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

Yes, our suppliers

CC14.4a

Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success

Novartis has begun to engage with suppliers of packaging materials within the framework of the Novartis Sustainable Packaging initiative. We have asked several suppliers to provide carbon footprint data on their products and are looking at selecting less carbon intensive packaging options.

CC14.4b

To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Number of suppliers	% of total spend	Comment
5	0.5%	Novartis only started to engage with packaging suppliers in 2012 and will continue to increase our activities here in the future. A new sustainable procurement program, which partly aims to reduce GHG emissions in the supply chain, was launched in April 2013 and is expected to initiate further supplier engagement.

CC14.4c

If you have data on your suppliers' GHG emissions and climate change strategies, please explain how you make use of that data

How you make use of the data	Please give details
Identifying GHG sources to prioritize for reduction actions	We intend to use the carbon information supplied to help us choose less carbon intensive packaging options for our products.

CC14.4d

Please explain why you do not engage with any elements of your value chain on GHG emissions and climate change strategies, and any plans you have to develop an engagement strategy in the future

Further Information

Module: Sign Off

Page: CC15. Sign Off

CC15.1

Please provide the following information for the person that has signed off (approved) your CDP climate change response

Name	Job title	Corresponding job category
Markus Lehni	Novartis Group Global Head Environment and Energy	Environment/Sustainability manager

Further Information

CDP 2014 Investor CDP 2014 Information Request