Module: Introduction

Page: Introduction

0.1

Introduction
Please give a general description and introduction to your organization

Arçelik A.Ş., founded in 1955, has operations in durable consumer goods and electronics sector with production, marketing and after-sales services, offers products and services more than 100 countries around the world with its 23,000 employees (950 R&D employees).
Arçelik A.Ş. has 14 production plants in 5 countries (Turkey, Russia, Romania, China and newly South Africa), sales and marketing companies all over the world with its 10 own brands (Arçelik, Beko, Grundig, Altus, Blomberg, ElektraBregenz, Arctic, Leisure, Flavel and Defy).
Arçelik management proves its commitment to present and future environmental and social issues with its recently announced vision "Respects the Globe, Respected Globally".
With a "sustainable development" approach parallel to its vision, Arçelik aims to develop and market products that are resource and energy efficient, technologically innovative in design and easy to use, while also fulfilling its commitment to work on solutions against future threats such as drought, global warming, and diminishing natural resources.
Considering climate change a global problem, Arçelik signed on 28 November 2011 "The 2oC Challange Communiqué" prepared by Corporate Leaders Network (CLN) and signed by more than 200 corporate officers operating in various industries in 29 countries. In addition to this, Mr. Levent Çakıroğlu, Arçelik A.Ş. General Manager, represented Turkey in the capacity of "Turkey Climate Change Group of Leaders Term Speaker" at the 17th United Nations Framework Convention on Climate Change in Durban.
One of Arçelik's other goals during product development is to prevent consuming of resources. The company limits the environmental impact a product has during its life cycle by assessing every factor right at the beginning of the design stage; departments responsible for R&D and industrial design also conduct technological, product development and improvement studies.
Arçelik implements Total Productive Maintenance (TPM) and Six Sigma methodologies for cost reduction, quality and process improvement while increasing its competitive edge day by day through its flexible production structure. The company's plants adhere to international production and quality standards: Arçelik production plants have ISO 9001, ISO 14001 certificates. Arçelik performs its operations in line with its "Total Quality" principle, simultaneously integrating all its Quality Management, Environmental Management and Occupational Health and Safety Management Systems.
Beside above systems, Arçelik calculated the Greenhouse Gas (GHG) emissions sourced by its facilities by using IPCC-2006 and in accordance with ISO 14064-1 GHG Standard, Arçelik's GHG values have been verified by an independent body in "100% verification" and "reasonable assurance" level.
Arçelik has published its environmental and social activities with the Sustainability Reports.
Arçelik's first Sustainability Report was in 2007.
Arçelik's Sustainability Report 2008-2009 was based on the GRI's G3 Sustainability Reporting Guidelines which is also approved by the GRI's Secretariat at C level.

Arçelik's Sustainability Report 2010 was also based on the GRI's G3 Sustainability Reporting Guidelines which was also approved and controlled by the GRI Secretariat at B (+) level and the first approved B(+) report in white goods sector in Turkey.
Arçelik's environmentally responsive approach starts from design to product life cycle. With its sustainable business approach which integrates environmental and social issues in all its business processes, Arçelik has become a finalist in the "Management" category within the framework of the "European Business Awards for the Environment - European Programme", in 2010.
Arçelik also won first prizes in "Management" category and in "Product" category under "European Business Awards for the Environment - Turkey Programme", in 2010.
Arçelik production plants carried various projects to reduce water, energy and waste with the "energy efficiency in production" approach.
All domestic production plants achieved a "Gold" certificate for energy efficiency. Arçelik is also the first home appliances company to be achieved "Platinium" certificate. This makes Arçelik the first home appliances manufacturer to achieve "Gold" certificates for all its domestic plants as part of the "Energy Efficiency in Green Factories" concept. Arçelik continues to raise its bar of success with each passing year: for the first time in the global household appliances market, its refrigerator, washing machine, cooking appliances and compressor plants achieved the "Platinium" certificate.
To act with a systematic approach in continuously improving activities, Arçelik is processing ISO 50001 Energy Management System in its production plants.

0.2

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
Fri 01 Jan 2010 - Fri 31 Dec 2010

0.3

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
Turkey

0.4

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.

TRY

0.5

Please select if you wish to complete a shorter information request

0.6

Modules

As part of the Investor CDP information request, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sectors and companies in the oil and gas industry 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 be marked as default options to your information request. If you want to query your classification, please email respond@cdproject.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.cdproject.net/en-US/Programmes/Pages/More-questionnaires.aspx.

Further Information

For the detailed information of Arçelik's environmental and social activities, please find attached report and also you can find the report on link below: http://www.arcelikas.com/page/204/Sustainability_Report

Attachments

https://www.cdproject.net/Sites/2012/15/21115/Investor CDP 2012/Shared Documents/Attachments/InvestorCDP2012/Introduction/KSS Sustainability Report 2010.pdf

Module: Management [Investor]

Page: 1. Governance

1.1

Where is the highest level of direct responsibility for climate change within your company?

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

1.1a

Please identify the position of the individual or name of the committee with this responsibility

The top level responsible person on the subject of climate change is Mr. Fatih Kemal Ebiçlioğlu, PhD, Arçelik A.Ş. Assistant General Manager - Finance and Accounting (CFO).

Within the framework of the vision of our Company, a new establisment has made in 2010, since 1th June 2010 there has been Energy and Environment Department in the organization which has performed guidance, planning, execution and follow-up of climate change subjects at production and all operational activities and services. Execution of issues related to climate change at operational activities is carried out under coordination of Energy Managers and Environment Management Representatives.

In addition to these; projects intended for improving environmental performance of product are executed by R&D Department.

1.2

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

Yes

1.2a

Please complete the table

Who is entitled to benefit from these incentives?	The type of incentives	Incentivised performance indicator
All employees	Monetary reward	In order to increase motivation,succes and productivity of its employees and to materialize best practices and ensure their dissemination;Arçelik evaluates,rewards and ensures promotion within the company all success,invention and suggestions that provide benefit. In this context ,since 2005 Human Resources Department of Arçelik implements an "Award Process for Runners to Zenith" annually,all employees who are succesful are encouraged and rewarded.One category of this award process is "People who Enrich Life". Projects nominated in this category are evaluated and concluded according to following performance indicators: 1.to produce higher efficient solutions and/or products that reduce greenhouse gas emissions with spending less energy and source by environmentally friendly activities. 2.to develop projects that would contribute to the society lived and worked in with the perspective of social responsibility. 3.to set an example in/out of company with studies and make an effort for sustainability and dissemination of studies. Environmentally friendly activities for product and production with energy efficiency projects are evaluated under this reward process. Rewardable projects and solutions are announced within the company and the project owners are rewarded in "Runners to Zenith Award Ceremony" which is held in October annually. Arçelik develops environmentally friendly,innovative and technological products which increase life standards of customers with R&D employees in excess of 850. R&D Department collects creative and innovative ideas of employees through a suggestion system called "Inter", an evaluation board evaluates suggestions and projects design opportunity is created for ideas that may be transformed into a product. In the name of encouraging employees for creativity,to ensure announcement of creative ideas within the company and to reward owners of such ideas "Invention Award Ceremony" is organized on World Patent Day (on April) every year. By using TPM tools,our white and blue collar employees develop projects on subjects like environment,energy and climate change and such projects are identified at individual performance target cards of employees.Employees receive individual performence points in consideration of TPM activities they perform and they are rewarded at year end in response to these points by using tools like situational reward.

Further Information

No additional information.

Page: 2. Strategy

2.1

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

2.1a

Please provide further details (see guidance)

In Arçelik, risk management is an integral part of business processess;risk management process is handled with a holistic perspective.Strategic,operational,financial,environmental and all other elements considered a risk to the fulfillment of the company's both short and long term goals are assessed by Board of Directors and levels of management.
The Risk Management Committee,which has been formed for this specific purpose carries out its activities by making proposals and recommendations to the Board of Directors concerning such subjects as the identification of risks,estimation of their impact and probability of their occurance,the management and reporting of these risks in accordance with the company's corporate risk-taking profile,their consideration in decision-making mechanisms,and the establishment and integration of effective internal control systems.
Risk Management Committee consists of minimum two members and Committee Chairman is selected from independent Board Members.Risk Management Committee may establish sub-working groups comprised of its own members and/or persons externally selected who have adequate experience and information about risk management in order to ensure efficiency of its operations. Arçelik Risk Management Department is located within this sub-working groups.
Risk Management Committee operating principles are detailed at: http://www.arcelikas.com/UserFiles/file/YKKomite.pdf
In accordance with resolutions adopted by the Board,Risk Management Committee designates procedures that would integrate main risk groups into the related business processes.Process managers integrate and implement the procedures that formed in line with this risks into processes they are responsible for.For this purpose,"GTP-16718 Arçelik Corporate Risk Management Procedure" has been issued.
Arçelik deems climate change as a main risk for future of the world and sustainability of the company;as a responsible global citizen works for combating with this problem.
Acting on the vision "Respects the Globe,Respected Globally",Arçelik considers it is an opportunity to increase company's prestige further and be prepared for climate change process already.
In Arçelik,national and international developments regarding climate change are followed regularly and shared with Top Management. In this context,considering the current status of Turkey,verification of Arçelik greenhouse gas emission inventory by an international independent body decision is given by Arçelik Top Management.
With reference to this resolution,Arçelik has generated a "GCP-16344 Greenhouse Gas Emission Inventory Reporting Procedure" integrated to existing Environmental Management System Process and calculated greenhouse gas emissions for 8 domestic plants and Head Office in compliance with international "ISO 14064-1 Quantification and Reporting Standard for Greenhouse Gas Emission" and IPCC guideline.Then calculated greenhouse gas emissions have been verified

by an accredited organization at "100% verification" and "reasonable assurance" level.
However,ISO 14064-1 Standard internal audits have been integrated to our ISO 9001 QMS (Quality Management System)&ISO 14001 EMS (Environmental Management System) integrated system audits and audits are performed in this scope annually.
Greenhouse gas emission results and reduction activities are reported to Top Management on a yearly basis and announced to the public with Arçelik A.Ş. Sustainability Report (See; http://www.arcelikas.com/UserFiles/file/surdurulebilirlik/KSS%20Sustainability%20Report%202010.pdf)
In Arçelik,primary energy sources are designated with greenhouse gas inventory verification study.Accordingly;natural gas,diesel,fuel oil and electric are primary energy sources.In this prioritization consumptions and emission factors have been taken into consideration.
Arçelik production plants are "energy efficient" areas.According to energy audits work with a T.R.Ministry of Energy and Natural Resources Directorate General of Renewable Energy licensed and TÜV certificated energy efficiency consultancy firm,in 2010 all domestic Arçelik production plants received "Gold Certificate";during 2011 4 plants (Eskişehir Refrigerator and Compressor Plant,Çayırova Washing Machine Plant,Bolu Cooking Appliances) reached to "Platinium Certificate" level.Thanks to these certificates,Arçelik has the title of being first and unique company in the world in its sector.
Greenhouse gas emission reduction operations are executed with energy efficiency projects in plants.These operations are executed with Energy Management System Process integrated to Environmental Management System (EMS) Process;certification is being carried out within the ISO 50001 Energy Management System (EnMS) Standard framework.
However;in Arçelik product storage logistic is also among the sources of greenhouse gas emissions.Arçelik performs its operations in transport and logistics for transformation into less costly,environmentalist,smart and safe systems and gaining sustainable qualifications to patterns of transport.In order to ensure permanency and constantly development of systems established,environmental factors get major share in technical supervisions of depots.
While providing flexible production and distribution operations to customers,these operations are also performed in environmentally sensitive approach such as LPG fueled forklifts at distribution depots were replaced with electric forklifts.Thus 6,400 tons of CO2 greenhouse gas emission reduction was achieved,in 40% ratio.In addition to this,floor plans in depots were arranged on the basis of minimum vehicle movement.
Further,energy saver illumination was commenced at depots working three shifts and 67% energy saved in Eskişehir,Çayırova and Ankara depots.
For dealer transportations in Turkey,Both route and load optimization was obtained with dynamic routing program,vehicle fullness were increased and distances were optimized.10% distance improvement was achieved for product distribution and 3,200 tons of CO2 greenhouse gas emissions reduction was achieved per annum.
In addition to these,in order to encourage suppliers for taking the climate change as a priority and to ensure their awareness about greenhouse gas emissions reporting, informing documents and questionairre form about GHG emissions and energy management were prepared and shared with suppliers,in this way their adaptation of this process have already been contributed.

2.2

Is climate change integrated into your business strategy?

Yes

2.2a

Please describe the process and outcomes (see guidance)

As a winner of "2010 European Business Awards for the Environment-Turkey Programme" and a finalist of "2010 European Business Awards for the Environment-European Programme", Arçelik specified its "Climate Change Strategy" from the point of fourth of main company business targets "to increase the ability to offer enriching,pioneer,innovative and environmentally friendly products and solutions to customers under "Respects the Globe,Respected Globally" vision.

- "Arçelik Climate Change Strategy" is designated as:Resource-saving and environmentally friendly product development,
- Resource productivity at production processes,
- Raise the awareness of public

and shared with all stakeholders with "Arçelik A.Ş. Sustainability Report 2010".
In consideration of product life cycle assessment,greenhouse gas emission emitted during to use of Arçelik products is more higher in comparison with greenhouse gas releases during production of such products(94-95% consumer use,<4% production and raw material supply,<0.1% product logistics).For this reason operations intended for improving energy performance of products have great importance because of high impact on total greenhouse gas emission.In consideration of the foregoing,R&D Department performs operations intended for improving product energy performance.
Although the greenhouse gas emission from production has a low proportion,Arçelik reduces its greenhouse gas emissions with energy efficiency projects at production.In this scope,our target is to mitigation of greenhouse gas emissions by reducing energy consumption at production in the ratio of 5%.In greenhouse gas emissions of product logistics are rather low in comparison with total greenhouse gas emissions.In addition to this,Arçelik performs operations for transformation into less costly,environmentalist,smart and safe systems in transport and logistics and gaining transport models a sustainable nature.
For dealer transportations in Turkey,both route and cargo optimization was obtained with dynamic routing program,vehicle fullness were increased and distances were optimized.10% distance improvement was achieved for product distribution and 3,200 tons of CO2 greenhouse gas emissions reduction was achieved per annum.
Further,in all shipments transition is made to the highest volume of vehicle and transport type possible.78% of dealer transports,95% of inter depots transportation was made with semi-trailer trucks/truck-trailers.
For exports to Poland,road use was decreased at the rate of 50% with transition to maritime transport.
In order to create necessary impact in the combat with climate change which is very imbortant in terms of world's future,raising awareness of society is an indispensable element.For this reason,an important step of our climate change strategy is activities for raising awareness of society.
Arçelik's 12 employees climbed to Kilimanjaro,the highest mountain in the African continent to attract attention to global warming.85% of glaciers existing at the summit at 1912 are not-existent today. During the climb conducted from 17 to 25 September 2011,a team comprised of Arçelik employees from Turkey,Russia,Germany,Romania and France participated.
Preservation of energy resources is possible with conscious consumption.
In 2010,Arçelik has started the project "Market Transformation of Energy Efficient Products (MTEEP) jointly with UNDP (United Nations Development Programme),GEF (Global Environment Fund),TürkBESD (Turkish White Goods Manufacturers' Association),T.R.Ministry of Science,Industry and Technology and T.R.Ministry of Energy and Natural Resources Directorate General of Renewable Energy.
This high budget project will be ended in 2014.The aim of this project is to enhance the transformation to less energy consuming electrical home appliances thus reducing the domestic electric consumption and greenhouse gas emissions.In addition,one of the most commonly used tools to draw attention of consumers to energy efficient products is product commercials.Our products are introduced in advertisement on the forefront of eco-friendly qualities.

Please explain why not

2.3

Do you engage with policy makers to encourage further action on mitigation and/or adaptation?

Yes

2.3a

Please explain (i) the engagement process and (ii) actions you are advocating

Arçelik became a member of Climate Platform which is established as an indepentent non-profit initiative for the purpose of providing support for operations executed to fight climate change in cooperation with Regional Environmental Center-REC Turkey and TÜSİAD (Turkish Industry and Business Association) and transition to low carbon economy.
As the first obligation period of Kyoto Protocol which is the most important official document regulating international climate regime will expire in 2012,the manner of shaping new climate regime was discussed at Global Climate Summit organized in Durban,South Africa.
During the 17th United Nations Framework Convention on Climate Change held with participation of government representatives of 190 countries,international organizations and representatives of NGO's, Mr. Levent Çakıroğlu,General Manager of Arçelik A.Ş., represented Turkey as "Turkey Climate Change Group of Leaders Term Speaker".
Mr. Levent Çakıroğlu who presented his opinions about role and leadership of private sector for eco-friendly and green development at the "Towards Rio +20,Business Leaders Build Change" panel.He has also participated in Global Business World Day organized by World Business Council for Sustainable Development and appeared as guest speaker at the panel themed "Why Business World should be Driving Force for Environment" entitled "Action Continues:Development for Environment,Business World and Everyone".
Arçelik,that considers climate change as an important risk with environmental,social and economical dimensions for world's sustainability,maintains its support to local and international projects executed by business world both in Turkey and in international arena.In this scope,Arçelik signed "The 2 oC Challange Communiqué" prepared by Corporate Leaders Network (CLN) including Turkey and signed by more than 200 corporate officers operating in various industries in 29 countries.
Arçelik supported the "En-Ver" project launched in collaboration with T.R.Ministry of Energy and Resources and Koç Holding as the corporate sponsor.Energy Efficiency Campaign "En-Ver" is a project launched in cooperation of public,private sector and NGO's,for the purpose of raising awareness for using energy efficiency at all segments of society and to keep energy efficiency subject on agenda throughout the country by various activities.
Arçelik also conducts cooperation activities with universities on climate change subject:

- Sustainable Energy Efficient Project-The Union of Chambers and Commodity Exchanges of Turkey (TOBB) Economy and Technology University Mechanical Engineering,Degree Thesis Study,
- Life Cycle Engineering-Istanbul Technical University Mechanical Engineering,Degree Thesis Study

- Project for optimization of energy consumption at cooling system of plastic injection machines-Yıldız Technical University Mechanical Engineering, Master Degree Thesis Study

Further Arçelik started the project "Market Transformation of Energy Efficient Products (MTEEP)" jointly with UNDP (United Nations Development Programme), GEF (Global Environment Fund), TürkBESD (Turkish White Goods Manufacturers' Association), T.R. Ministry of Science, Industry and Technology and T.R. Ministry of Energy and Natural Resources Directorate General of Renewable Energy. The aim of the project which is going to end until 2014 is to enhance the transformation to less energy consuming electrical home appliances thus reducing domestic electric consumption and greenhouse gas emissions.

Further Information

No additional information.

Page: 3. Targets and Initiatives

3.1

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

Intensity target

3.1a

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

3.1b

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
ARIT1	Scope 1+2	100%	15%	metric tonnes CO2e per unit revenue	2010	0.00003560	2015	Since there are different product ranges at our 8 production plants, company performance cannot be followed on equivalent product. For this reason, performance follow-up is made on turnover.

3.1c

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	Comments
ARAT1	Increase	10			From 2010 year to 2015; it's to be expected to increase the absolute target due to the planned investments, planned procudtion capacity and planned production increase. Beside, there is a reduction target in intensity emissions.

3.1d

Please provide details on your progress against this target made in the reporting year

ID	% complete (time)	% complete (emissions)	Comment
ARPR1	0	0	Since our base year as well as reporting year is 2010, there have not been any progress yet. The action plan and the responsibilities to reach the target has been defined and it will be published in our next report.

3.1e

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

3.2

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

Yes

3.2a

Please provide details (see guidance)

Operations aimed at developing product energy performances have great importance in terms of ensuring greenhouse gas emission mitigation at national and international level. Considering this, R&D Department carries out operations aimed at developing product energy performance.
For instance;Arçelik 92104 PFEI product "Kaktüs (cactus)" model reaches to A++ energy level with 0.92 kWh energy consumed during cycle.The most thrifty product prior to Arçelik's "Kaktüs (cactus)" model is Arçelik 62105 H dishwasher with 1.05 kWh (A class) energy consumption and 7 litres water consumption.In comparison to this product 86 kWh/year and 280 liters/year saving achieved per product.If we consider that 4 million dishwashers used in Turkey have consumption values of 62107 HIT and if these products are to be replaced by Kaktüs 146.9 GWh/year energy saving can be achieved.This saving corresponds to 37% of annual energy generation of Hirfanlı Dam."Kaktüs" dishwasher was awarded First Prize for Sustainable Environmentally Friendly Product in Large Scale Organizations from Istanbul Chamber of Industry in 2010.
CSM 62520 DWL,the least energy consuming oven of the world,consumes 40% less energy in comparison with A energy class thanks to its strengthened isolation in Eco-Turbo Cooking mode.If we consider number of households in 15 European countires as 154 million and oven penetration ratio as 85%,total number of ovens would be approximately 131 million.If ovens with 590 Wh energy consumption are used in 15 European countries the annual saving to be generated amounts to 5,890 GWh.Since 10% of all products are electronic timer products,when 0.8 W is deducted for each timer from 5 W,release of 231,000 tons of CO_2 greenhouse gas

emissions shall be prevented.

3.3

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

Yes

3.3a

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

Stage of development	Number of projects	Total estimated annual CO2e savings (only for rows marked *)
Under investigation		
To be implemented*		
Implementation commenced*		
Implemented*	138	7560
Not to be implemented		

3.3b

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

Activity type	Description of activity	Estimated annual CO2e savings	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period

Activity type	Description of activity	Estimated annual CO2e savings	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
Energy efficiency: processes	Cutting energy when there is no production, economizer installation to boilers, efficiency in pneumatic systems, optimization of heating line, reduction of robot cycle duration etc.	3741	1200784	518570	<1 year
Low carbon energy installation	Use of high efficiency fluorescent armatures, use of motion detectors, positioning illumination lamps etc.	527	172885	74662	<1 year
Energy efficiency: processes	Improvement at processes using natural gas etc	211	47189	20379	<1 year
Energy efficiency: processes	Improvement operations regarding electric motors etc.	637	197919	85473	<1 year
Energy efficiency: processes	A/C fans' being variable-speed, improvement of funnel ventilation, use of dehumidifiers instead of A/C plants etc.	418	106756	46104	<1 year
Energy efficiency: processes	Reduction of compression losses, creation of control systematics etc.	1014	149227	64445	<1 year
Low carbon energy installation	Installing inverters to electric motors, efficient motor implementation etc.	408	121120	52307	<1 year

3.3c

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

Method	Comment
Compliance with regulatory requirements/standards	Arçelik complies with legal legistlations on greenhouse gas emission reduction and fully comply with eco-design legal legistlation which describes product energy efficiency limits. Thanks to memship in CECED (European Comittee of Domestic Equipment Manufacturers)i we participate in all operations carried out in EU regarding product energy performances and

Method	Comment
	labelling and developments are closely followed. Energy efficiency operations in production are performed in accordance with all legal requirements described at T.R. Energy Efficiency Act. Despite the fact that Turkey is a party to Kyoto Protocol but did not obtain country target, greenhouse gas emission mitigation is achieved with energy efficiency operations at product and production.
Dedicated budget for energy efficiency	Annually,energy budgets and energy efficiency investment budgets are designated, projects are materialized. At the beginning of each year, targets aimed at reducing energy consumption are designated and at the end of the every year, compliance status with planned target is followed. Emission reduction is rendered systematic with constant follow-up of the process.
Dedicated budget for low carbon product R&D	R&D Departments in Arçelik plants design least consuming products in the world in terms of both energy and water consumption and carry out projects aimed at efficient use of resources used in products. Currently Arçelik holds records about white goods consuming least energy in the world.
Financial optimization calculations	Arçelik performs operations aimed at optimization of energy consumption. Financial optimizations are made about energy efficiency and road for investments is paved. Short and medium term energy efficiency projects are constantly followed; financial optimization is made and put into practice in a short span of time.
Marginal abatement cost curve	Energy related expense items are followed and reduction targets are designated. While increase in production is targeted, goals for decline in energy consumption and energy budgets are set; operations are executed on this basis.
Partnering with governments on technology development	In order to increase energy efficiency in products and production, joint works with both governmental agancies and universities are performed. Projects are carried out with TÜBİTAK (The Scientific and Technological Research Council of Turkey), energy efficient product and production technologies are developed. Projects are carried out also under European Union 7th Framework Program. In addition, many projects are carried out with both state and foundation universities and operations for increasing efficiency in product and production are carried out. Various cooperation projects are also carried out with Ministries.

3.3d

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

Further Information

No additional information.

Page: 4. Communication

4.1

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

Publication	Page/Section Reference	Identify the attachment
In annual reports (complete)	Arçelik Durban, 2 C Communiqué-Arçelik Annual Report 2011, Section: Social Responsibility, Page:83	Arçelik A.Ş. Annual Report 2011
In voluntary communications (complete)	Arçelik GHG Emissions - Arçelik A.Ş. Sustainability Report 2010, Section: System, Page: 22-23 and 74-79	Arçelik A.Ş. Sustainability Report 2010
In voluntary communications (complete)	Durban Climate Summit, Business World is in Durban for Climate, Page: 9	Cumhuriyet Newspaper
In voluntary communications (complete)	2 C Communiqué, Turkish Companies also sign the 2oC Declaration, Page:22	Eko IQ Magazine
In voluntary communications (complete)	Durban Climate Summit, Arçelik in Climate Change Summit, Page 4	Istanbul Ekonomi
In voluntary communications (complete)	Durban Climate Summit, Turkish Business World warns in Durban "Opportunity Missed", Page:5	Star Türk Newspaper

Further Information

No additional information.

Module: Risks and Opportunities [Investor]

Page: 2012-Investor-Risks&Opps-ClimateChangeRisks

5.1

Have you identified any climate change risks (current or future) that have 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

5.1a

Please describe your risks driven by changes in regulation

ID	Risk driver	Description	Potential impact	Timefra me	Direct / Indire ct	Likeliho od	Magnitu de of impact
ARR R1	Internatio nal agreemen ts	Countries that are signatories to Kyoto Protocol United Nations Framew ork Convention on Climate Change(UNFCCC) w hich is single international framew ork aimed at combatting global w arming and climate change are committed to reduce release of CO2 and other gases causing greenhouse effect or if they fail that to buy rights through carbon trade. Turkey became a party to Kyoto Protocol on 26 August 2009 follow ing Turkish Grand National Assembly's passing "The Act Regarding Approval of Participation to Kyoto Protocol aimed at United Nations Framew ork Convention on Climate Change (UNFCCC)" no. 5386 on 5 February 2009 and Cabinet Decree dated 13 May 2009 and no. 2009/14979, upon presentation of instrument for accession to the United Nations. Turkey w hich w as not a party to UNFCCC w hen protocol w as adopted w as not included in Protocol Annex-B list w hich contains Annex-I signatory countries, w here numerical limitations and reduction obligations are defined. Accordingly, Turkey has no numerical release limit or reduction obligation in first obligation phase w hich covers 2008 to 2012 of the Protocol. How ever, according to the Kyoto Protocol, a new mechanism w ill be set up in the post 2012 phase and all countries may be included in this mechanism. For this reason, in the forthcoming period it is probable that Turkey w ill receive a greenhouse gas reduction target. When the country receives a target and this target is distributed to sectors, sectors w ill have important tasks, need for	Increased operational cost	1-5 years	Direct	Very likely	Medium

ID	Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact
		investment on product and production will arise and this will cause significant increase in costs. Nonetheless, in the event of failing to achieve the target assigned to sectors the country carbon purchase need may arise and costs could be affected significantly, this may cause impact on company share certificates before investors. When it is needed to reflect operational and investment cost increase to product price, we may be disadvantaged in competition.					
ARR R2	Air pollution limits	Upon entering post -2012 new obligation period under the Kyoto Protocol, the status of Turkey is still not clarified yet, who has no greenhouse gas emission reduction target currently. In case of designation of a reduction target, companies would be required to adapt in a short period of time and fully comply with targets. In order to be ready for this, requirements to implement additional operational activities and/or BAT (Best Available Technologies) will arise; additional cost and investments shall be required. If sector/company target may not be achieved, requirement for carbon purchase will arise; this would affect costs significantly in turn. This may cause impact on company share certificates before investors. When it is needed to reflect operational and investment cost increase to product price, we may have disadvantage in competition.	Increased operational cost	1-5 years	Direct	Very likely	Medium
ARR R3	Emission reporting obligations	Approved greenhouse gas emission reports to be prepared and sent to the Ministry every year under “The Regulation on Following Greenhouse Gas Emissions” which was prepared by T.R. Ministry of Environment and Urbanization and entered into force with publication in Official Gazette dated 25 April 2012 and no. 28274, will contain quantity of emissions created as a result of activities performed by companies during the previous year and issuance and follow -up of approved greenhouse gas emission monitoring plans. Under “The Regulation on Following Greenhouse Gas Emissions”, first reporting obligation period for industry will start in 2016 for emissions of 2015; despite the fact that the it is not within the regulation’s scope, Arçelik has calculated greenhouse gas emissions released during its activities since 2006. Under this regulation, calculation of CO2 emissions originating from energy is demanded, Arçelik calculates and reports in “tonnes equivalent CO2” all greenhouse gas emissions including emissions originating from electric and chemical consumption in addition to greenhouse gas emissions originating from energy as more comprehensive than what is set forth at the regulation in accordance with IPCC guidelines and “ISO 14064-1 Standard for the Quantification and Reporting of Greenhouse Gas”. Greenhouse gas emissions in	Increased operational cost	1-5 years	Direct	Likely	Medium

ID	Risk driver	Description	Potential impact	Timefra me	Direct / Indire ct	Likeliho od	Magnitu de of impact
		2010 originating from Arçelik's all plants in Turkey and Head Office w ere verified by an independent accredited organization under ISO 14064-1 Standard at the levels "100% verification" and "reasonable assurance". Arçelik greenhouse gas emissions w ere shared w ith all stakeholders through "Sustainability Report 2010". (Please see; http://w w w.arcelikas.com/UserFiles/file/surdurulebilirlik/KSS%20Sustainability%20Report%202010.pdf) How ever, the fact that Turkey's local electricity emission factors have not been published yet, it causes uncertainties and companies' taking emission factors in their calculations from different sources, this may cause discrepancies at greenhouse gas emissions calculated by companies. Arçelik made a joint study w ith T.R. Ministry of Energy and Natural Resources Directorate General of Energy Affairs to calculate regional diffraction of emission factor to reduce risk of reflection of such uncertainty to greenhouse gas emissions and such information w as considered for calculations of greenhouse gas emissions.					
ARR R4	Fuel/ener gy taxes and regulation s	Besides uncertainties regarding calculation and reduction of greenhouse gas emissions, another subject that may cause problem at international competition is legal requirements related to energy. Operational costs are directly impacted by prices' being dependent on global changes since Turkey is foreign-dependent in energy, intensification of general tax approach on energy sources, electric generation from renew able energy sources is not at adequate level. With new legal regulations, it is highly probable that electricity and natural gas costs increase to an extend that may cause problem in competition. On the other hand, through the method of publishing energy reports on a monthly basis, energy consumption quantity per product is follow ed in "kWh/product" and reported. In the light of data obtained projections are made and long term targets are determined. In addition to that, developments regarding renew able energy are closely follow ed; operations are carried out to include this subject into prospective business plans.	Increased operational cost	Current	Direct	Virtually certain	Medium
ARR R5	Product efficiency regulation s and standards	Intense w ork w as performed in past period in EU market on the subject of energy efficiency. Legislation harmonization w orks in Turkey became simultaneous w ith EU recently. For this reason, domestic operational costs are affected.	Increased operational cost	Current	Direct	Virtually certain	Medium
ARR R6	Product labeling regulation	Operations w hich commenced in 1995 about energy labelling in w hite goods and TV's in EU market currently continue intensively. Even if legislation harmonization w orks in Turkey came from behind a little in recent past (beginning of 2000's) now	Reduced demand for goods/servi	Current	Direct	Very likely	Medium

ID	Risk driver	Description	Potential impact	Timefra me	Direct / Indire ct	Likeliho od	Magnitu de of impact
	s and standards	there is no phase difference w ith EU in terms of time. For this reason domestic operational costs are directly affected. How ever, other than energy labelling more labelling operations (return on equity labelling, carbon label, eco- labelling etc.) are also made abroad, but they have not started in Turkey yet. In the future, if such implementations start both at home and abroad this w ould affect costs and this w ill also be an important parameter in competition. If calculation criteria and standards of environmental labelings do not have same quality in national and international platform, companies w ill use calculation methods and acceptance criteria specific to companies/countries, this w ill render some companies disadvantaged and render some advantageous in case of making comparison among companies. This w ill cause unfair competition. When considered on product quantity basis, exports to EU market are approximately in excess of 50%. For this reason, in the current situation legislation and standards regarding product labeling continue to impact the Arçelik financially.	ces				
ARR R7	Uncertain ty surroundi ng new regulation	"The Regulation on Monitoring of Greenhouse Gas Emissions" recently published in Turkey requires reporting of greenhouse gas emissions. How ever, there are uncertainties about w hether there is a greenhouse gas emission mitigation target for country may potentially get, if a target is to be got, how it w ould be distributed to industries. While Turkey gets the mitigation target, the target w ill be distributed to the relevant sectors and there w ill be necessity for the investment to develop more environmental-friendly products and production activities. Thus, the costs w ill increase. Nonetheless, in the event of failing to achieve the target distributed to sectors carbon purchase need may arise and costs could be affected significantly, this may cause impact on company share certificates care of investors. When it is needed to reflect operational and investment cost increase to product price, w e may be disadvantaged in competition. How ever, the fact that Turkey's local electricity emission factors are not published yet, it causes uncertainties and companies' taking emission factors in their calculations from different sources, this may create discrepancies at greenhouse gas emissions calculated by companies. Arçelik made a joint study w ith T.R. Ministry of Energy and Natural Resources Directorate General of Energy Affairs to calculate regional diffraction of emission factor to reduce risk of reflection of such uncertainty to greenhouse gas emissions and such information w as considered for calculations of greenhouse gas emissions.	Increased operational cost	1-5 years	Direct	Likely	Medium
ARR	Other	Initial intergovernmental contacts in connection w ith Reduction of Ozone-Depleting	Increased	1-5	Direct	Likely	Medium

ID	Risk driver	Description	Potential impact	Timefra me	Direct / Indire ct	Likeliho od	Magnitu de of impact
R8	regulatory drivers	Substances (ODS) commenced in 1981 and this initiative came to a conclusion w ith agreement upon Vienna Convention for the Protection of the Ozone Layer in March 1985. Follow ing the agreement on convention, operations commenced on a protocol that w ould ensure bringing under control utilization and production of substances that depleting ozone layer. In September 1987, the Montreal Protocol on Substances That Deplete the Ozone Layer w as agreed upon. Turkey became a party to the protocol on 19 December 1991 and agreed all amendments. In this scope, “The Regulation Regarding Reduction of Substances That Deplete the Ozone Layer” w as published at Official Gazette dated 12 November 2008 and no. 27052. Arçelik A.Ş. is the first w hite goods manufacturer w hich produced refrigerators free of CFC in Turkey in 1995, long before compliance date determined for Turkey under the Montreal Protocol w hich envisages limitation of employment of substances depletting ozone layer. In EU "F-Gas Regulation" operations are currently continuing. In this context some gases w hose use may be restricted are HFC’s. Since HFC-410A is used for A/C production and HFC-134a is used for production of heat pump driers, there is risk for production of products containing these gases in the future. In the event of need to replaces these gases operational costs for both R&D and production activities w ill increase. In order to make sure that refrigerators, driers and A/C’s are both more efficient and more environmentally friendly, alternative cooling technologies are studied instead of coolant based cycle. In addition to this, one of operations performed under ODS is collection of CFC’s. One of main factors in collection of CFC’s is CFC-11 and CFC-12 gases used in refrigerators produced in Turkey ahead of 1995. Due to collection and destruction of these gases originating from old refrigerators costs w ill be incurred under “Regulation on Waste Electric and Electronic Equipments (WEEE).	operational cost	years			

5.1b

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; and (iii) the costs associated with these actions

Turkey did not receive any greenhouse gas emission reduction target in initial obligation period.But,in post-2012 period it is probable that Turkey will also receive greenhouse gas reduction target(Risk ID:ARRR1).When the country receives target, it will cause high costs for the companies.In addition to this,in the event of failing to achieve the target distributed,carbon purchase necessity may arise and this may cause a negative effect on investors.When it is needed to reflect operational and investment cost increase to product price,we may be disadvantaged in competition(Risk ID:ARRR1,ARRR2). Besides,when viewed globally,it is very important to take action towards reduction of greenhouse gas emissions(GHG).In this scope, Arçelik senior management gives targets every year for increasing energy efficiency in production to reduce GHG.Under the "The Regulation on Monitoring of GHG" issued in Turkey on 26 April 2012,first reporting obligation period for industry will start at 2016.Arçelik has been calculating GHG emitted since 2006 and certified its GHG according to ISO 14064-1 and IPCC in 2010 (Risk ID:ARRR3).

However,the fact that Turkey's local electricity emission factors are not published yet,it causes uncertainties and companies' taking emission factors in their calculations from different sources,this may create discrepancies at GHG calculated by companies.Arçelik made a joint study with government to reduce risk of reflection of uncertainties(Risk ID:ARRR7).

Another matter is legal requirements related to energy.With new legal regulations,it is highly probable that our electricity and natural gas costs may increase to an extent that may cause problems in competition.In spite of this,with the method to publish energy reports on a monthly basis,energy consumption quantity per product is followed in "kWh/product" and reported.Projection is made and long term targets are designated under light of data obtained.In addition to this,operations are carried out for incorporating renewable energy into prospective business plans(Risk ID:ARRR4,ARRR7).

Operations started to establish and implement ISO 50001 Energy Management System in order to ensure handling activities performed regarding energy within a systematic and certification operations are carried out by an international accredited organization(Risk ID:ARRR1).

Cost analysis of targets intended for taking risks and to meet designated targets may be summarized as follows:accredited organization certification costs under the standards ISO-14064-1,ISO 14001 and ISO 50001 amounts to approximately TL 76,000 per year;energy efficiency projects expenditure and investment costs amounts to approximately TL 2 million per year and environmental management costs amounts to approximately TL 3.4 million per year.

In addition,expenditure planned for basic test assembly expenditures for determination of measurement quality and measurement to be performed for wind energy in particular in future period amounts to approximately TL 70,000.

Operations for improving energy performance of products are of great importance also with respect to high impact on reduction of country GHG.Operations that started in 1995 in EU market about energy labelling in white goods and TV's currently continue intensively.Legislation harmonization works in Turkey became simultaneous with EU now .This also impact domestic operational costs.In case of failure to ensure simultaneous transition with EU,the sector would encounter the risk of surviving in Turkish market(Risk ID:ARRR5,ARRR6,ARRR7).

Since 2002,Arçelik is the single Turkish company that is a member of European Committee of Domestic Equipment Manufacturers(CECED).CECED executes sectoral activities regarding legal regulations and implementations in Europe.Arçelik closely chases new energy label and resource efficiency operations at CECED platform and takes necessary actions.In case of failure to take action for developments in EU,there is risk of failure to survive in the market.

Arçelik took part in ATLETE I (Appliance Testing for Energy Label Evaluation) Project which tests accuracy of products' energy efficiency labels which is conducted by CECED jointly with European Commission; all measurements and tests of 3 different models of refrigerators of Beko,international brand of Arçelik,were successfully completed in ATLETE Project.A budget in excess of TL 32,000 is allocated to tests to be conducted for ATLETE II Project which is continuation of this project.

Working in collaboration with TÜRKBESD(Association of Turkish White Goods Industrialists) we convey developments about energy labelling in EU to T.R.Ministry of Science, Industry and Technology and direct the sector in this subject.We endeavor to ensure that relevant legislation also in Turkey and dissemination of energy efficient products.

The company incurs costs for this operations conducted jointly with CECED and TÜRKBESD approximately in excess of TL 300,000 per year.

However,other than energy labelling abroad,other labelling operations(return on equity labelling,carbon label,environmental labelling etc.) are also made abroad,but they did not start in Turkey yet.In the future,if such implementations start both at home and abroad this would affect costs and this will also be an important parameter in competition.

We closely follow developments in the world,regarding new environment labels and designate our road.Cost of R&D studies for energy efficient and environmentally friend products that satisfy needs of today and future incurred by the company amounts to approximately TL 100 million per year(Risk ID:ARRR5,ARRR6,ARRR7).

“The Regulation Regarding Reduction of Substances That Deplete the Ozone Layer(ODS)” was issued in Turkey.Arçelik is the first white goods manufacturer which produced refrigerators free of CFC in Turkey in 1995,long before compliance deadline determined.Thanks to gradual transition of gas used in produced refrigerators,since 1995 we ensured approximately 280,000 tonnes eq. CO2 GHG only with coolant gas(Risk ID:ARRR8).
Further,in EU currently F-Gases Regulation operations are continuing.In this scope use of HFC gases in production has a potential to create problems in the future with respect to products.
HFC-410A is used for A/C production and HFC-134a is used for production of heat pump driers.There is a risk because of probability to restrict such gases the future and this will increase the operational costs.In order to environmental friendly products, we are working on alternative cooling technologies.
In addition to this,one of operations performed under ODS is collection of CFC's.CFC-11 and CFC-12 gases were used at refrigerators produced in Turkey ahead of 1995.Due to collection and destruction of these gases originating from old refrigerators additional cos

5.1c

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

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
ARRC1	Change in mean (average) temperature	Gradual increase of concentration of gases causing greenhouse effect in atmosphere causes the world to warm more than normal and climate changes. Sea levels increase because of melting glaciers due to temperature rise; on the other hand some parts of Antarctica get colder. Important effects of climate change include more arid climate, fall in precipitation quantities, increase in forest fires, decrease in agricultural yield, exhaustion of surface waters, floods, loss of plant species and dissemination of invasive species. Globally, much more extreme and variable weather conditions are anticipated in the future, it is anticipated that while precipitation quantities will increase in costal regions, aridity will arise at internal regions because of hot weather, more floods will occur due to increasing storms and rises at sea levels. A 2˚C temperature increase globally will have many significant impacts on Mediterranean Basin which also includes Turkey. If global temperature increase reaches 2˚C, Mediterranean climate will get warmer, aridity will be felt at extensive lands and there will be changes in climate. While general temperature rise in the region reaches to 1-2˚C, this rise may reach to 5˚C at Turkey's internal regions which are away from alleviating impact of sea. Such temperature changes will cause sudden and important changes at costs of energy spent for heating and cooling systems of plants in	Increased operational cost	1-5 years	Direct	Very likely	Medium

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		particular, and affect operational and investment costs. Floods that may happen due to sudden temperature rises and decreases constitute risk for our plants in particular which have stream beds nearby. By handling such circumstances as emergency, emergency drills are conducted; emergency action plans are prepared and implemented. This, is a factor that may increase our operational costs too.					
ARRC2	Induced changes in natural resources	Depending on population increase; increase in energy consumption today causes that world is unable to balance its precise balance with its own natural facilities. Scientific researches may suggest different schedules but the point they all agree on is that climate change will constitute a threat in a future not too distant towards resources on the world and extinction of living creatures. Changes in physical life conditions will cause deep-rooted changes also in socio-economic structure of the world. For this reason climate changes is not only an environmental threat but also an economical threat. Together with ever increasing population the fact that natural resources are diminishing fast will impact not only industrialists but all life. From this point of view, supply prices of natural resources will increase, despite this increase in the future it would be impossible to obtain resources to satisfy demand. For this reason operations will be accelerated for recycling resources but providing budget that would cover investment needs to be formed will be gradually grow difficult. Some of indispensable natural resources for white goods and TV are water, energy and basic minerals like iron, copper, aluminum. Significant quantities of decreases in such resources will directly and severely affect our sector. This would affect product R&D activities and innovation significantly and cause serious problems in competition. Operations to recycle and reuse basic minerals and materials from scraps from production and end-of life products on systematic of return on equity methodology are carried out by our plants and Purchasing Department. However, maintaining return on equity methodology causes increase of operational and R&D costs. Further, there is need for operational cost for implementation of integrated waste management systematic and to ensure recycling of product	Increased operational cost	>10 years	Direct	Likely	Medium

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		packages.					

5.1d

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; and (iii) the costs associated with these actions

Gradual increase of concentration of gases causing greenhouse effect in atmosphere causes the world to warm more than normal and climate changes. Sea levels increase because of melting glaciers due to temperature rise; on the other hand some parts of Antarctica get colder.
Important effects of climate change include more arid climate, fall in precipitation quantities, increase in forest fires, decrease in agricultural yield, exhaustion of surface waters, floods, loss of plant species and dissemination of invasive species.
Globally, much more extreme and variable weather conditions are anticipated in the future, it is anticipated that while precipitation quantities will increase in costal regions, aridity will arise at internal regions because of hot weather, more floods will occur due to increasing storms and rises at sea levels.
A 2˚C temperature increase globally will have many significant impacts on Mediterranean Basin which also includes Turkey. If global temperature increase reaches 2˚C, Mediterranean climate will get warmer, aridity will be felt at extensive lands and there will be changes in climate.
While general temperature rise in the region reaches to 1-2˚C, this rise may reach to 5˚C at Turkey's internal regions which are away from alleviating impact of sea. Such temperature changes will cause sudden and important changes at costs of energy spent for heating and cooling systems of plants in particular, and affect operational and investment costs. "Smart casual" dress code implemented at beginning of summer during previous years against the possibility that temperature increases trigger utilization of A/C, started to be implemented in the beginning of April as of this year.
Floods that may occur due to sudden temperature increases and decreases constitute risk for our plants with stream beds nearby in particular. By handling such circumstances as emergency, emergency drills are conducted; emergency action plans are prepared and implemented. This, is a factor that may increase our operational costs too.
Considering climate change a global problem, Arçelik signed on 28 November 2011 "The 2°C Challenge Communiqué" prepared by Corporate Leaders Network (CLN) and signed by more than 200 corporate officers operating in various industries in 29 countries.
In addition to this, Mr. Levent Çakıroğlu, General Manager, Arçelik A.,Ş. represented Turkey in the capacity of "Turkey Climate Change Group of Leaders Term Speaker" at the 17th United Nations Framework Convention on Climate Change and presented his opinions about role and leadership of private sector for environmentally friendly and green development at the panel under the summit themed "Towards Rio +20, Business Leaders Build Change".
Further Arçelik A.Ş. employees climbed to Kilimanjaro, the highest mountain in the African Continent to attract attention to global warming. 85% of glaciers existing at the summit at 1912 are non-existent today, during the climb conducted from 17 to 25 September 2011, a team of 12 people comprised of Arçelik employees from Turkey, Russia, Germany, Romania and France participated. Total amount of expenses incurred for this climb is over TL 170,000.
Arçelik closely follows global climate change projections, while new investment assessments are made at home and abroad, risks related to climate change are also considered. (RISK ID : ARRC1)
Depending on population increase; increase in energy consumption today causes that world becoming unable to balance its precise balance with its own natural facilities. Scientific researches may suggest different schedules but the point they all agree on is that climate change will constitute a threat in a future not too distant

towards resources on the world and extinction of living creatures. Changes in physical life conditions will cause deep-rooted changes also in socio-economic structure of the world. For this reason climate changes is not only an environmental threat but also an economical threat. Together with ever increasing population the fact that natural resources are diminishing fast will impact not only industrialists but all life.
From this point of view, supply prices of natural resources will increase despite this increase in the future it would be impossible to obtain resources to satisfy demand. For this reason operations will be accelerated for recycling resources but providing budget that would cover investment needs to be formed will be gradually grow difficult.
Some of indispensable natural resources for white goods and TV are water, energy and basic minerals like iron, copper, aluminum. Significant quantities of decreases in such resources will directly and severely affect our sector. This would affect product R&D activities and innovation significantly and cause serious problems in competition.
Operations to recycle and reuse basic minerals and materials from scraps from production and end-of life products on systematic of return on equity methodology are carried out by our plants and Purchasing Department. However, maintaining return on equity methodology causes increase of operational and R&D costs. For instance; materials like bellow, polystyrene, plastic used in our products are recycled and reused in certain ratios under quality standards. Primarily R&D expenditure and investments are made for this.
Further, non-hazardous solid wastes from our plants and packages are re-cycled and regained to economy. There is also need for operational cost for implementation of integrated waste management systematic and recycling of product packages.
(RISK ID: ARRC2).

5.1e

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

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
ARRO1	Reputation	Every passing day new developments related to climate change occur; sectors make various operations to keep up with such developments. Emission reduction targets are designated and implemented now by many countries. Turkey did not receive greenhouse gas emission reduction target during the initial obligation period valid until 2012 because of its special position under the Kyoto Protocol. However in the new market mechanism envisaged to be materialized in post-2012 period, it is probable that Turkey will receive greenhouse gas mitigation target. When the country receives target and this target is distributed to relevant sectors a need for investment on product and production will arise and cause increase in costs. However, in the event of failing to achieve the target assigned to sector, this may case risk of loss of	Reduced demand for goods/services	6-10 years	Direct	Unlikely	High

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		reputation, penal sanctions and negative impact on company share certificates care of investors, a requirement for purchasing carbon will arise, for this reason there may be important increases in costs. When it is needed to reflect operational and investment cost increase to product price, there may be disadvantage in competition. In the future only companies that quickly comply with such developments may survive. It is important that companies plan their activities also to manage risks concerning climate change, closely follow all national and international developments and quickly take action. Otherwise, with decrease of brand value we may encounter risks which are too hard to turn around like loss of market and financial losses. Acting on the vision "Respects the Globe, Respected Globally" Arçelik maintains his activities environmentally friendly in a manner also to include climate change. In the event of failure to do that, there is risk of becoming unable to maintain our cooperation with our stakeholders. There is also the risk that point of view of NGO's on the company may change. Besides, there is risk of change in taxation regime before governments. Respect for climate change is also becoming a marketing tool. For this purpose activities in technical and marketing group also increase operational costs.					
ARRO2	Fluctuating socio-economic conditions	Both global and local economic instabilities may cause socio-economic conditions into lumpy demand. This, in turn is included among parameters that significantly impacts and steers preferences of consumers. While high economic stability steers consumers to purchase products by considering other effects (environment related effects included) in addition to product's price, on the contrary economic instability may steer consumer to preferences that are based on price politics only. This would cause companies sensitive to climate change and environment to slog in competition and not to allow that investments are oriented accordingly. For this reason, "Time to Market" i.e, putting right product on market at the right time is of great importance. In order to make this analysis, many various tools may be used. For instance; consumer surveys	Reduced demand for goods/services	6-10 years	Direct	Likely	Medium-high

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		and consumer needs analyses are performed/caused to be performed, course of economy is followed, and business plans are issued accordingly. Operational costs are incurred for managing such risks.					

5.1f

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; (iii) the costs associated with these actions

Every passing day new developments related to climate change occur; sectors make various operations to keep up with such developments.
Emission mitigation targets are designated and implemented now by many countries. Turkey did not receive greenhouse gas emission mitigation target during the initial obligation period valid until 2012 because of its special position under the Kyoto Protocol. However in the new market mechanism envisaged to be materialized in post-2012 period, it is probable that Turkey will receive greenhouse gas reduction target.
When the country receives target and this target is distributed to relevant sectors a need for investment on product and production will arise and cause increase in costs.
However, in the event of failing to achieve the target assigned to sector, this may case risk of loss of reputation, penal sanctions and negative impact on company share certificates before investors, a requirement for purchasing carbon will arise, for this reason there may be important increases in costs. When it is needed to reflect operational and investment cost increase to product price, there may be disadvantage in competition. In the future only companies that quickly comply with such developments may survive.
It is important that companies plan their activities also to manage risks concerning climate change, closely follow all national and international developments and quickly take action. Otherwise, with decrease of brand value we may encounter risks which are too hard to turn around like loss of market and financial losses.
Respect for climate change is also becoming a marketing tool. For this purpose activities in technical and marketing group also increase operational costs. (RISK ID : ARRO1)
Both global and local economic instabilities may pave the way in a country for socio-economic conditions to make harsh swings. This, in turn is included among parameters that significantly impacts and steers preferences of consumers.
While high economic stability steers consumers to purchase products by considering other effects (environment related effects included) in addition to product's price, on the contrary economic instability may steer consumer to preferences that are based on price politics only.
This would cause companies sensitive to climate change and environment to slog in competition and not to allow that investments are oriented accordingly.
For this reason, "Time to Market" i.e, putting right product on market at the right time is of great importance.
In order to make this analysis, many various tools may be used. For instance, consumer surveys and consumer needs analyses are performed/caused to be performed, course of economy is followed, and business plans are issued accordingly. Operational costs are incurred for managing such risks. (RISK ID : ARRO2)

5.1g

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

5.1h

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

5.1i

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

No additional information.

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6.1

Have you identified any climate change opportunities (current or future) 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

6.1a

Please describe your opportunities that are driven by changes in regulation

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
AROR1	Cap and trade schemes	Emissions created by energy consumption causes greenhouse gas increase in atmosphere which resulted in climate change. Energy is the most essential need for maintaining our lives. Depending on population increase, raising in energy consumption today causes that world becoming unable to balance its precise balance with its own natural facilities. For this reason climate change is not only an environmental threat but also a social and economic threat. In the face of these global problems the need for business world to generate rational and innovative solutions is becoming evident gradually. Our working culture shaped by sense of responsibility is our most valuable legacy which led us to success from our foundation till today. For the purpose of constantly improving this legacy, Arçelik regards climate change as one of the main risks in terms of world's future and sustainability of the company and also regards being prepared for climate change process already as an opportunity. Turkey did not receive greenhouse gas emission reduction target under the Kyoto Protocol and did not participate in "cap and trade system". However in post-2012 period, it is expected that Turkey will receive an emission	Wider social benefits	6-10 years	Direct	Likely	Medium-high

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
		reduction target and may participate in carbon trade. Further Arçelik started operations for voluntary carbon trade to quickly adapt to system the moment obligatory trade commences and to turn it to opportunity.					
AROR2	Voluntary agreements	Operations started also for voluntary carbon trade for the purpose of quickly adapting to system the moment obligatory trade commences and to turn it into opportunity upon Turkey's receiving greenhouse gas emission reduction target. Although it is not issued in Turkey yet, infrastructure preparations commenced for "The Regulation on Waste Electric and Electronic Equipment (WEEE)" and planning necessary for contributing also to greenhouse gas reduction activities. In this scope, voluntary operations are carried out for collection of CFC-11 and 12 gases used in the old refrigerators and included among ODS disposal project purposes and disposal of the same by heat treatment or new technology based methods.	Wider social benefits	1-5 years	Direct	Likely	Medium
AROR3	Product efficiency regulations and standards	CO2 emissions created during life cycles of products occurs during mostly in use of product process than production process for our sector. For this reason, return on equity in product (energy, water, etc.) in white goods and TV sector is a prerequisite element of competition now. In this matter regulations related to energy efficiency and labeling in particular come into prominence. On the one hand environmental impacts of our production processes are diminished, on the other hand we strive to develop most efficient and environmentally friendly products that consumers may use with peace of mind, and we perform operations to offer consumers products that consume least electricity and water during use and leading to least CO2 release. Because of constant operation, refrigerator occupies the most important place among our products in terms of energy consumption. Since	New products/business services	Current	Direct	Very likely	Medium-high

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
		1995, energy consumption of our refrigerators was reduced in the ratio of 72%, energy consumption of washing machine, drying machine, TV, dishwasher, oven are reduced in the ratios of 58%, 57%, 54%, 53%, 47% respectively. When energy reduction quantities since 1995 are considered, our LTP (Long Term Plan) and PRM (Product Road Map) systematic constitutes our main method in this subject. At least once a year, energy and environmentally friendly product range and portfolio definition is made with top management, through this strong method we have towards domestic target markets environmentally friendly products are put on the market.					
ARORA4	Product labeling regulations and standards	Nowadays, most effective 3 parameters in sales and marketing of white goods and TV are brand, price and energy labels. Following entry of energy label in 1995 for the first time into sector, particularly from beginning of 2000's, energy label started to be used extremely efficiently in competition. After 2014 it is envisaged that labelling will change for white goods. The company deems it as an opportunity to closely follow any and all kinds of regulation and standard oriented operations regarding labelling and making projects and investments accordingly. Further, consumer's including performances in environment label among purchasing criteria is very beneficial in terms of country environmental policy. If demand for environmentally friendly products increase, there is opportunity to provide major contribution to reduction of country greenhouse gas emissions. Our entire product range is made up of environmentally friendly goods. Since 2002, our basic white goods and TV's bear energy labels. During the 10 years elapsed, product efficiency regulations and standards have been extremely effective. During 31st Energy Efficiency Week price reductions in the ratio of 50% were made with	Wider social benefits	1-5 years	Indirect (Client)	Likely	Medium

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
		energy efficiency campaign and it was facilitated for customers to incline for environmentally friendly products.					

6.1b

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

As Arçelik regards climate change as one of major risks in terms of world's future and sustainability of the company, also deems it as an opportunity to be prepared for climate change process already.
Turkey did not receive greenhouse gas emission mitigation target under the Kyoto Protocol and could not participate in "cap and trade system". However in post-2012 period, it is expected that Turkey, too, will receive an emission reduction target and may participate in obligatory carbon trade (OPPORTUNITY ID: AROR1).
Arçelik started carbon financing operations to take part in cap and trade; such operations are coordinated by Finance Directorate, Technical Group, Energy and Environment Department and R&D in accordance with methods of carbon financing management criteria.
Conferences regarding future of carbon markets and world climate conferences are attended at CEO level and followed on site and our methodology is reviewed minimum once a year. (OPPORTUNITY ID: AROR1, AROR2)
In energy efficiency projects, energy consumption of study period is measured by using measurement instruments and Scada systems at consumption sites and energy efficiency is interrogated. Necessity of potential energy efficiency study regarding such region is technically and financially analyzed then together with management approval project is built and operations are carried out.
In this scope in the recent period approximately TL 2 million per year worth of expenditure and investment was incurred for energy efficiency projects (study project expenses and personnel included). In addition to this, operations are conducted for using "Best Available Technology (BAT)" in energy efficiency activities at production.
Further, operations started for voluntary carbon trade for the purpose of quickly adapting to system the moment obligatory trade commences and to turn it to opportunity. (OPPORTUNITY ID: AROR2)
Although it is not issued in Turkey yet, infrastructure preparations commenced for "The Regulation on Waste Electric and Electronic Equipment (WEEE)". In this scope, voluntary operations are carried out for collection of CFC-11 and 12 gases used in old refrigerators and included among ODS disposal project purposes and disposal of the same by heat treatment or new technology based methods. (OPPORTUNITY ID: AROR2)
During life cycles of products the majority of environmental impacts based on CO2 emission releases occur in the utilization process of products in the sector. . For this reason, return on equity in product (energy, water, etc.) in white goods and TV sector is a prerequisite element of competition now.
In this matter legal regulations related to energy efficiency and labelling in particular come into prominence.
Nowadays, most effective 3 parameters in sales and marketing of white goods and TV are brand, price and energy labels.
Following entry of energy label in 1995 for the first time into sector, particularly from beginning of 2000's, energy label started to be used extremely efficiently in competition.
After 2014 it is envisaged that labelling will change for white goods. The company deems it as an opportunity to closely follow any and all kinds of regulation and

standard oriented operations regarding labelling and making projects and investments accordingly. Further, consumer's including performances in environment label among purchasing criteria is very beneficial in terms of country environmental policy. If demand for environmentally friendly products increase, there is opportunity to provide major contribution to reduction of country greenhouse gas emissions.
For this reason, on the one hand environmental impacts of our production processes are diminished, on the other hand we strive to develop most efficient and environmentally friendly products that consumers may use with peace of mind, and we perform operations to offer consumers products that consume least electricity and water during use and leading least CO2 release.
Our LTP (Long Term Plan) and PRM (Product Road Map) systematic constitutes our main method in this subject. At least once a year, energy and environmentally friendly product range and portfolio definition is made with top management, through this strong method we have towards domestic target markets environmentally friendly products are put on the market.
Our entire product range is made up of environmentally friendly goods. Since 2002, our basic white goods and TV's bear energy labels. During the 10 years elapsed, product efficiency regulations and standards have been extremely effective. While new energy label directive enters into force in Europe, cost of R&D studies for energy efficient and environmentally friend products that satisfy needs of today and future incurred by the company amounts to approximately TL 100 million per year(OPPORTUNITY ID: AROR3, AROR4).

6.1c

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

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
AROC1	Change in mean (average) temperature	In the name of transforming changes in weather temperature into opportunity, we adopted to exceed requirements set forth at legal legislations and standards regarding product and production efficiency a principle. In this context we have a target to produce products at identical standard at all countries where we operate. In the new investments we made abroad, we take our product and production technologies to the country we invest in and ensure that country also become aware about energy efficient products, therefore we seize the opportunity to contribute to reduction of country greenhouse gas emissions. As an example to this, recently investment was made in South Africa and our employees climbed to Kilimanjaro, the highest mountain in the African Continent, to attract attention to global warming. 85% of glaciers existing at the summit at 1912 are non-existent today, during the climb conducted from 17 to 25 September 2011, a team of 12 people comprised of Arçelik employees from Turkey, Russia, Germany, Romania and France participated. At the same time we contribute to development of countries where we invest. In the	Wider social benefits	Current	Direct	Likely	Medium-high

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		upcoming period we are going to do a project in South Africa, we commenced basic infrastructure operations to enter into voluntary carbon trade. As Green Climate Fund will step in 2012, we follow information on future carbon markets. We are aware that our environmentally friendly products and production activities are opportunities to increase our brand value and we perform our activities in accordance with this opportunity. We share such activities through our sustainability report with all of our stakeholders. According to a study conducted by Harvard Business School by reviewing 180 companies, long term market share and share certificate value of companies having high sustainability performances and reporting them increase in comparison with those with low sustainability performance and such companies draw attention of investors. In this scope, all activities concerning environment including also activities performed in connection with climate change are deemed as an opportunity financially.					

6.1d

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

In the name of transforming changes in weather temperature into opportunity, we adopted to exceed requirements set forth at legal legislations and standards regarding product and production efficiency a principle.
In this context, in the new investments we made abroad, we take our product and production technologies to the country we invest in and ensure that country also become aware about energy efficient products, therefore we seize the opportunity to contribute to reduction of country greenhouse gas emissions.
As an example, recently investment was made in South Africa and our employees climbed to Kilimanjaro, the highest mountain in the African Continent, to attract attention to global warming. 85% of glaciers existing at the summit at 1912 are non-existent today, during the climb conducted from 17 to 25 September 2011, a team of 12 people comprised of Arçelik employees from Turkey, Russia, Germany, Romania and France participated. At the same time we contribute to development of countries where we invest.
We aware that our environmentally friendly product and production activities are opportunities to increase our brand value and we perform our activities in accordance with this opportunity. We share such activities through our sustainability report with all of our stakeholders.
According to a study conducted by Harvard Business School by reviewing 180 companies, long term market share and share certificate value of companies having high sustainability performances and reporting them increase in comparison with those with low sustainability performance and such companies draw attention of

investors. In this scope, all activities concerning environment including also activities performed in connection with climate change are deemed as an opportunity financially. (OPPORTUNITY ID: AROC1).

6.1e

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

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
AROO1	Changing consumer behaviour	When last 15 years is considered, it is seen that effect of environmentally friendly and energy efficient products on turnover within total constantly increased on an annual basis. Accordingly, it is seen that there is gradual tendency in consumers' changing buying behavior towards energy efficient products and by increasing affordability of this products purchase of energy efficient products gained a positive acceleration. During 31st Energy Efficiency Week, price reductions in the ratio of 50% were made with energy efficiency campaign in white goods and it was facilitated for customers to incline for such products. In order to determine tendency of consumers, consumer surveys and consumer needs analyses are performed/caused to be performed, course of economy is followed, and business plans are issued accordingly.	Wider social benefits	1-5 years	Direct	Very likely	Medium-high

6.1f

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

When last 15 years is considered, it is seen that effect of environmentally friendly and energy efficient products on turnover within total constantly increased on an annual basis. Accordingly, it is seen that there is gradual tendency in consumers' changing buying behaviour towards energy efficient products and by increasing affordability of this products purchase of energy efficient products gained a positive acceleration.
During 31st Energy Efficiency Week, price reductions in the ratio of 50% were made with energy efficiency campaign in white goods and it was facilitated for customers to incline for such products.
In order to determine tendency of consumers, consumer surveys and consumer needs analyses are performed/caused to be performed, course of economy is

followed, and business plans are issued accordingly (OPPORTUNITY ID: AROO1).

6.1g

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

6.1h

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

6.1i

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

No additional information.

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading [Investor]

Page: 7. Emissions Methodology

7.1

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)
Fri 01 Jan 2010 - Fri 31 Dec 2010	77038	80687

7.2

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
ISO 14064-1

7.2a

If you have selected "Other", please provide details below

7.3

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

Gas	Reference
CO2	IPCC Third Assessment Report (TAR - 100 year)
CH4	IPCC Third Assessment Report (TAR - 100 year)
Other: R12	IPCC Third Assessment Report (TAR - 100 year)
Other: R22	IPCC Third Assessment Report (TAR - 100 year)
Other: For other Coolants; (gas mixtures included)	IPCC Third Assessment Report (TAR - 100 year)

7.4

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

Fuel/Material/Energy	Emission Factor	Unit	Reference
Diesel/Gas oil	74.10	Other: ton/TJ	IPCC Guidelines for National Greenhouse Gas Inventories Chapter 2: Stationary Combustion- Volume 2: Energy Intergovernmental Panel on Climate Change, Table 2.2: Default emission factors for stationary combustion in the energy industries, Table 2.3: Default emission factors for stationary combustion in manufacturing industries and construction
Diesel/Gas oil	74.10	Other: ton/TJ	IPCC Guidelines for National Greenhouse Gas Inventories Chapter 3: Mobile Combustion- Volume 2: Energy Intergovernmental Panel on Climate Change 2006, Table 3.2.1: Road transport default CO2 emissions factors and uncertainty ranges, Table 3.2.2: Road transport N2O and CH4 default emissions factors and uncertainty ranges
Distillate fuel oil No 4	77.40	Other: ton/TJ	IPCC Guidelines for National Greenhouse Gas Inventories Chapter 2: Stationary Combustion- Volume 2: Energy Intergovernmental Panel on Climate Change , Table 2.2: Default emission factors for stationary combustion in the energy industries, Table 2.3: Default emission factors for stationary combustion in manufacturing industries and construction
Liquefied petroleum gas (LPG)	63.10	Other: ton/TJ	IPCC Guidelines for National Greenhouse Gas Inventories Chapter 2: Stationary Combustion- Volume 2: Energy Intergovernmental Panel on Climate Change, Table 2.2: Default emission factors for stationary combustion in the energy industries, Table 2.3: Default emission factors for stationary combustion in manufacturing industries and construction
Liquefied petroleum gas (LPG)	63.10	Other: ton/TJ	IPCC Guidelines for National Greenhouse Gas Inventories Chapter 3: Mobile Combustion- Volume 2: Energy Intergovernmental Panel on Climate Change 2006, Table 3.2.1: Road transport default CO2 emissions factors and uncertainty ranges, Table 3.2.2: Road transport N2O and CH4 default emissions factors and uncertainty ranges
Natural gas	56.10	Other:	IPCC Guidelines for National Greenhouse Gas Inventories Chapter 2: Stationary Combustion- Volume 2:

Fuel/Material/Energy	Emission Factor	Unit	Reference
		ton/TJ	Energy Intergovernmental Panel on Climate Change 2006, Table 2.2: Default emission factors for stationary combustion in the energy industries, Table 2.3: Default emission factors for stationary combustion in manufacturing industries and construction
Electricity	0.50	Other: ton/kWh	An average emission factor was calculated for Turkey grid circuit (grid emission factor). For electricity emission factors, TEİAŞ(Turkish Electricity Distrubition Company) data and IPCC Guidelines for national GHG inventories chapter 2: Stationary combustions – Volume 2: Energy Intergovernmental Panel on Climate Change 2006, Table 1.2: Default net calorific values were used.
Motor gasoline	69.30	Other: ton/TJ	IPCC Guidelines for National Greenhouse Gas Inventories Chapter 3: Mobile Combustion- Volume 2: Energy Intergovernmental Panel on Climate Change 2006, Table 3.2.1: Road transport default CO2 emissions factors and uncertainty ranges, Table 3.2.2: Road transport N2O and CH4 default emissions factors and uncertainty ranges
Other: Industrial oil	73.30	Other: ton/TJ	IPCC Guidelines for National Greenhouse Gas Inventories Chapter 2: Stationary Combustion- Volume 2: Energy Intergovernmental Panel on Climate Change 2006, Table 1.2: Default net calorific values, Table 1.4: Default CO2 emission factors for combustion
Petroleum coke	97.50	Other: ton/TJ	IPCC Guidelines for National Greenhouse Gas Inventories Chapter 2: Stationary Combustion- Volume 2: Energy Intergovernmental Panel on Climate Change 2006, Table 2.2. Default Emission Factors for Stationary Combustion in the Energy Industries, Table 2.3. Default Emission Factors for Stationary Combustion in Manufacturing Industries and Construction
Refinery gas	57.60	Other: ton/TJ	IPCC Guidelines for National Greenhouse Gas Inventories Chapter 2: Stationary Combustion- Volume 2: Energy Intergovernmental Panel on Climate Change 2006, Table 2.2. Default Emission Factors for Stationary Combustion in the Energy Industries, Table 2.3. Default Emission Factors for Stationary Combustion in Manufacturing Industries and Construction
Brown coal	97.50	Other: ton/TJ	IPCC Guidelines for National Greenhouse Gas Inventories Chapter 2: Stationary Combustion- Volume 2: Energy Intergovernmental Panel on Climate Change 2006, Table 2.2. Default Emission Factors for Stationary Combustion in the Energy Industries, Table 2.3. Default Emission Factors for Stationary Combustion in Manufacturing Industries and Construction

Further Information

No additional information.

Page: 8. Emissions Data - (1 Jan 2010 - 31 Dec 2010)

8.1

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

Financial control

8.2a

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

77038

8.2b

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

Boundary	Gross global Scope 1 emissions (metric tonnes CO2e)	Comment

8.2c

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

Gross global Scope 1 emissions (metric tonnes CO2e) – Part 1 Total	Comment

8.2d

Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e - Part 2

Boundary	Gross global Scope 1 emissions (metric tonnes CO2e)	Comment

8.3a

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

80687

8.3b

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e - Part 1 breakdown

Boundary	Gross global Scope 2 emissions (metric tonnes CO2e)	Comment

8.3c

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e - Part 1 Total

Gross global Scope 2 emissions (metric tonnes CO2e) - Total Part 1	Comment

8.3d

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

Boundary	Gross global Scope 2 emissions (metric tonnes CO2e) - Other operationally controlled entities, activities or facilities	Comment

8.4

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

8.4a

Please complete the table

Reporting Entity	Source	Scope	Explain why the source is excluded

8.4

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

Yes

8.4a

Please complete the table

Source	Scope	Explain why the source is excluded
Employee services, sub-contractor activities, food&drink vending machines, beverage fridges, water dispensers, emissions arising from equipment not belonging to Arçelik within campus area, emissions arising from waste recycle and disposal	Scope 1	Since these are not under financial and administrative control of Arçelik, they are excluded.
CO2 and CH4 emission created during treatment in waste water treatment plant	Scope 1	During treatment at wastewater treatment plants, greenhouse gas emissions occur as a result of bacteria activities. As CO2 and CH4 emission created during biological treatment is not set forth at "IPCC Guidelines for National Greenhouse Gas Inventories, Volume 5: Waste, Chapter 6: Wastewater Treatment and Discharge" it is not included in calculations.
Fire extinguishers other than CO2 located in plant	Scope 1	As fire extinguishers other than CO2 do not use a gas causing greenhouse gas emission as propellant, these are excluded.
Some chemical groups used (adhesives, aerosols, oils,paraffin waxes, solvents, solvent based paints, chemicals used for test purposes, polyurethane (PU), EPS etc.)	Scope 1	These chemicals were calculated and determined that they cause greenhouse gas emission at a negligible level; for this reason they are not included in greenhouse gas inventory.
Plastic injection combustion operation	Scope 1	Since combustion does not happen because combustion temperature of raw material used in plastic injection is more than internal temperature of injection machine, plastic raw material consumption is excluded. Nevertheless, other operations arising from the operation are included.
Oil combustion operation at conveyor and kiln at Refrigerator and Compressor Plants	Scope 1	Since temperature of Refrigerator Installation, dye works, conveyor, Compressor Installation conveyor and kiln is much lower than combustion temperatures of used gear oils, these oils are excluded.
Gases used for controlling gas and smoke detectors	Scope 1	Since quantity of gases used for controlling gas and smoke detectors are very few these are excluded.
Spot weld operation oil combustion	Scope 1	As ratio of greenhouse gas arising from spot weld oil combustion in total greenhouse gas emission is very low it is excluded. (It corresponds to 0.000285% of Arçelik's total greenhouse gas emission.)
Gas used for combustion test for R&D laboratory in Istanbul Beylikdüzü campus	Scope 1	As ratio of gas used for combustion test in R&D laboratory in Beylikdüzü campus is very low it is excluded. (It corresponds to 0.00007% of Arçelik's total greenhouse gas emission)

8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and Scope 2 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
More than 2% but less than or equal to 5%	Data Gaps Assumptions Extrapolation Metering/ Measurement Constraints Data Management	Arising from fuel consumptions; - Accuracy values of relevant meters, - Under IPCC 2006 Tier 1 approach, maximum value of lowest and highest value deviations according to standard value of emission factors provided for fuels, - Possible erroneous records that may arise in connection with consumptions and potential deviations arising from erroneous data entry were used. Arising from refrigerant leakages; - Accuracy values for weighing devices, - Possible erroneous records and potential deviations arising from erroneous data entry that may arise in connection with refrigerating appliance inventories and refrigerant leakages were used.	More than 5% but less than or equal to 10%	Data Gaps Assumptions Extrapolation Metering/ Measurement Constraints Data Management	- Accuracy values of relevant meters, - Maximum value of emission factors of fuels used for electricity generation of lowest and highest value deviations according to standard value under IPCC 2006 Tier 1 approach, as set forth at TEİAŞ reports , - Deviations that may happen at calorific values of fuels used for electricity generation, as set forth at TEİAŞ reports , - Possible erroneous records and potential deviations arising from erroneous data entry that may arise in connection with consumptions were used. For each energy source, total uncertainty calculation was made to be proportional to emission quantity in tonnes CO2 calculated through IPCC standard emission factor. For measurement devices with no calibration certificate, measurement

8.6

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

Verification or assurance complete

8.6a

Please indicate the proportion of your Scope 1 emissions that are verified/assured

More than 90% but less than or equal to 100%

8.6b

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

Level of verification or assurance	Relevant verification standard	Relevant statement attached
Reasonable assurance	ISO14064-3	See; "Arçelik A.Ş. Sustainability Report 2010 - BSI Assurance Report"

8.7

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

Verification or assurance complete

8.7a

Please indicate the proportion of your Scope 2 emissions that are verified/assured

More than 90% but less than or equal to 100%

8.7b

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

Level of verification or assurance	Relevant verification standard	Relevant statement attached
Reasonable assurance	ISO14064-3	See; "Arçelik A.Ş. Sustainability Report 2010 - BSI Assurance Report"

8.8

Are carbon dioxide emissions from the combustion of biologically sequestered carbon (i.e. carbon dioxide emissions from burning biomass/biofuels) relevant to your company?

No

8.8a

Please provide the emissions in metric tonnes CO2e

Further Information

ISO 14064-1 Greenhouse Gas Emission Reporting Standard Certificate (by BSI) is attached.

Attachments

https://www.cdproject.net/Sites/2012/15/21115/Investor CDP 2012/Shared Documents/Attachments/InvestorCDP2012/8.EmissionsData(1Jan2010-31Dec2010)/Arcelik_GHG Verification_2010.pdf

Page: 9. Scope 1 Emissions Breakdown - (1 Jan 2010 - 31 Dec 2010)

9.1

Do you have Scope 1 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

9.1a

Please complete the table below

Country	Scope 1 metric tonnes CO2e
Other: Romania	9502.26
Other: Russia	8473.03
Other: China	568.32

9.2

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

By facility

9.2a

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

Business Division	Scope 1 metric tonnes CO2e

9.2b

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

Facility	Scope 1 metric tonnes CO2e
Arctic	9502.26
Beko LLC	8473.03
Beko China	568.32

9.2c

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

GHG type	Scope 1 metric tonnes CO2e

9.2d

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

Activity	Scope 1 metric tonnes CO2e

Further Information

No additional information.

Page: 10. Scope 2 Emissions Breakdown - (1 Jan 2010 - 31 Dec 2010)

10.1

Do you have Scope 2 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

10.1a

Please complete the table below

Country	Scope 2 metric tonnes CO2e
Other: Romania	14482.66
Other: Russia	11705.14
Other: China	2502.40

10.2

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

By facility

10.2a

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

Business division	Scope 2 metric tonnes CO2e

10.2b

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

Facility	Scope 2 metric tonnes CO2e
Arctic	14482.66
Beko LLC	11705.14
Beko China	2502.40

10.2c

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

Activity	Scope 2 metric tonnes CO2e

Further Information

No additional information.

Page: 11. Emissions Scope 2 Contractual

11.1

Do you consider that the grid average factors used to report Scope 2 emissions in Question 8.3 reflect the contractual arrangements you have with electricity suppliers?

Yes

11.1a

You may report a total contractual Scope 2 figure in response to this question. Please provide your total global contractual Scope 2 GHG emissions figure in metric tonnes CO2e

11.1b

Explain the basis of the alternative figure (see guidance)

11.2

Has your organization retired any certificates, e.g. Renewable Energy Certificates, associated with zero or low carbon electricity within the reporting year or has this been done on your behalf?

No

11.2a

Please provide details including the number and type of certificates

Type of certificate	Number of certificates	Comments

Further Information

No additional information.

Page: 12. Energy

12.1

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

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

12.2

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

Energy type	MWh
Fuel	345051
Electricity	159659
Heat	0
Steam	0
Cooling	0

12.3

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

Fuels	MWh
Diesel/Gas oil	4091
Distillate fuel oil No 4	14908
Liquefied petroleum gas (LPG)	15428
Natural gas	306604
Motor gasoline	4021

Further Information

No additional information.

Page: 13. Emissions Performance

13.1

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

Increased

13.1a

Please complete the table

Reason	Emissions value (percentage)	Direction of change	Comment
Other: Increased production quantitiy	4.5	Increase	Year 2009 greenhouse gas emission value was not verified by an accredited independent organization. Year 2010 greenhouse gas emissions value was caused to be verified by an accredited independent organization. Further, because of increase in production quantities at all Plants in 2010 in comparison with 2009, quantity of greenhouse gas emissions also increased.

13.2

Please describe your gross 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
0.0000356030	metric tonnes CO2e	unit total revenue	0.32	Decrease	Despite the fact that production quantities increased in 2010 in proportion to 2009, greenhouse gas emissions per turnover decreased. Major reasons of this decrease are energy consumption reduction operations performed at Plants and energy efficiency projects.

13.3

Please describe your gross 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
8.57760496	metric tonnes CO2e	FTE Employee	3.7	Decrease	Despite the fact that number of employees increased in 2010 in proportion to 2009, greenhouse gas emission per employee decreased. Major reasons of this reduction are training-awareness activities and projects materialized at Plants.

13.4

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
4.1489109	metric tonnes CO2e	unit hour worked	4.5	Increase	Year 2009 greenhouse gas emission value was not verified by an accredited third organization. Year 2010 greenhouse gas emission value was caused to be verified by an accredited third organization. Further, because of increase in production quantities at all Plants in 2010 in comparison with 2009, quantity of greenhouse gas emissions also increased.

Further Information

No additional information.

Page: 14. Emissions Trading

14.1

Do you participate in any emission trading schemes?

No, but we anticipate doing so in the next two years

14.1a

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

14.1b

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

We commenced basic infrastructure operations to enter voluntary carbon trade in future period. Since Green Climate Fund will step in 2012 we constantly compile information about future carbon markets. We plan advanced level operations so that our Company will benefit to a maximum level from carbon trade both at home and abroad. We are going to participate in World Climate Conference in Qatar (COP 18) and follow progress on this matter.

14.2

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

No

14.2a

Please complete the following table

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 retired	Purpose e.g. compliance

Further Information

No additional information.

Page: 2012-Investor-Scope 3 Emissions

15.1

Please provide data on sources of Scope 3 emissions that are relevant to your organization

Sources of Scope 3 emissions	metric tonnes CO2e	Methodology	If you cannot provide a figure for emissions, please describe them
Purchased goods & services		Greenhouse Gas Protocol's Corporate Value Chain (Scope 3)	The GHG sourced by suppliers and subcontractor activities
Upstream transportation & distribution		Greenhouse Gas Protocol's Corporate Value Chain (Scope 3)	The GHG sourced by transportation of products and materials.
Business travel		Greenhouse Gas Protocol's Corporate Value Chain (Scope 3)	The GHG sourced by personnel travel.
Employee commuting		Greenhouse Gas Protocol's Corporate Value Chain (Scope 3)	The GHG sourced by personnel buses.
Use of sold products		Greenhouse Gas Protocol's Corporate Value Chain (Scope 3)	The GHG sourced by the product usage.
End-of-life treatment of sold products		Greenhouse Gas Protocol's Corporate Value Chain (Scope 3)	The GHG sourced by disposal / recycling activities for end of life products.

15.2

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

No emissions data provided

15.2a

Please indicate the proportion of your Scope 3 emissions that are verified/assured

15.2b

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

Level of verification or assurance	Relevant verification standard	Relevant statement attached

15.3

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

No, we don't have any emissions data

15.3a

Please complete the table

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment

Further Information

No additional information.

Module: Sign Off

Page: Sign Off

Please enter the name of the individual that has signed off (approved) the response and their job title

Dr. Fatih Kemal EBİÇLİOĞLU, CFO ARÇELİK A.Ş.