Module: Introduction

Page: Introduction

CC0.1

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 more than 23,000 employees.
Arçelik A.Ş.,has 14 production plants in 5 countries (Turkey,Russia,Romania,China,South Africa), sales and marketing companies all over the world with its 10 own brands (Arçelik,Beko,Grundig,Altus,Blomberg,Elektra Bregenz,Arctic,Leisure,Flavel,Defy).
Arçelik management provides its commitment to present future environmental and social issues with its 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,diminishing natural resources.
Arçelik conducts its business processes in accordance with ISO14001 Environmental Management System (EMS), which is integrated with ISO 9001 Quality Management System and adopted to Total Quality Approach,since 1994.
In 2011, Arçelik established GHG Management and Reporting System based on continuously improvement principle.
Arçelik calculated the GHG emissions sourced by its facilities by using IPCC-2006 and in accordance with ISO 14064-1 GHG Standard.
Arçelik's GHG values (Scope 1 and 2) have being audited and verified by an independent body in "100% verification" and "reasonable assurance" level since 2010.
In 2013 Arçelik's logistics' GHG emissions (Scope 3) have been calculated and verified by an independent body at "limited assurance"level.
In 2012,Arçelik established Energy Management System in more systematic structure by using ISO 50001 Energy Management Standard (EnMS).
Arçelik's EnMS has been audited and certified by an independent body.Arçelik's EMS, EnMS and GHG Management Systems are integrated.
Arçelik's environmentally responsive "sustainable development" approach which is controlled in all processes from design to product cycle has been achieved as a result of mentioned management systems and its vision.
With its EMS,Arçelik is the winner of "EU Business Awards for the Environment-Turkey Programme" in "Management" category in 2010.Considering climate change as a global problem,Arçelik signed on 28 Nov 2011 "The 2oC Challenge Communique" prepared by Corporate Leaders Network (CLN). Arçelik A.Ş. former CEO Levent Çakıroğlu represented Turkey as the President of Climate Change Leaders (since 2011) in the World Climate Summit held in Durban and Doha.Arçelik also participated in the World Climate Conference held in Warsaw in 2013 and followed developments concerning climate change.
Parallel to its vision,one of Arçelik's other goals is to prevent consuming of resources.Arçelik focuses to achieve continuous improvement of the products,starting from design stage.In Arçelik, R&D, Industrial Design and Product Development Departments are responsible to conduct technological and product development

studies to prevent consuming of resources. With these studies Arçelik always achieved to be the “world's mosts and firsts”.
E.g The world’s least energy consuming washing machine of the year 2013: The washing machine that consumes 50% less energy than the A+++ energy class is quoted among the least energy consuming washing machines in the world. The world’s least energy consuming refrigerator of the year 2013: No-Frost combi type refrigerator and static combi type refrigerator are consuming 68% and 72% less energy than A-class respectively (with the energy index values of A+++ - 20% and A+++ - 30%). Thanks to these studies we achieved the “Green Brands” award in Austria with our brand Elektrabregenz in 2013.
Arçelik production plants carried various projects to reduce water,energy and waste.
10 of Arçelik’s production plants achieved a "Platinum" certificate for energy efficiency.Arçelik is first home appliances company having Platinum certification.
Arçelik also implements and achieves awards on the Total Productive Maintenance (TPM) and Six Sigma methodologies. E.g Arctic Romania Refrigerator Plant won “TPM Special Award”(Arctic is second production plant in the world on home appliances sector. The first one was also Arçelik Refrigerator Plant in Turkey.)
In Turkey, Istanbul Stock Exchange has established Sustainability Index (BIST SI). 30 companies have been evaluated and only 15 companies were able to enter to BIST SI. Arçelik achieved to enter the index with the highest score on «environment».
Arçelik shares its sustainability approach with its Sustainability Reports (SR). Arçelik's first SR was in 2007. Starting with 2010 Arçelik’s SR are based on GRI G3 at B(+) level and SR 2010 was the first approved B(+) report in white goods sector in Turkey. In 2013 Arçelik’s SR has been published in accordance with GRI G4.

CC0.2

Reporting Year
Please state the start and end date of the year for which you are reporting data.
The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.
We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.
Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed
Tue 01 Jan 2013 - Tue 31 Dec 2013

CC0.3

Country list configuration

Please select the countries for which you will be supplying data. If you are responding to the Electric Utilities module, this selection will be carried forward to assist you in completing your response.

Select country
Turkey

CC0.4

Currency selection

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

TRY

CC0.6

Modules

As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sub-industries, companies in the oil and gas sub-industries, companies in the information technology and telecommunications sectors and companies in the food, beverage and tobacco industry group should complete supplementary questions in addition to the main questionnaire.
If you are in these sector groupings (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will not appear below but will automatically appear in the navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.
If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see https://www.cdp.net/en-US/Programmes/Pages/More-questionnaires.aspx.

Further Information

For further information, please see attached Arçelik Sustainability Report 2013.

Attachments

https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/ClimateChange2015/CC0.Introduction/Arçelik - Sustainability Report 2013.pdf

Module: Management

Page: CC1. Governance

CC1.1

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

Board or individual/sub-set of the Board or other committee appointed by the Board

CC1.1a

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

Arçelik Management proves its commitment to present and future environmental and social issues with its announced vision "Respects the Globe, Respected Globally".
Arçelik's sustainability approach is to consider social, economic, environmental and ethics aspects into its activities, to integrate these aspects into its corporate business targets, to manage its activities in accordance with sustainability principles, corporate policies and strategies. Arçelik assesses sustainability and climate change related risks and opportunities and stakeholder expectations as its main inputs.
(i)The highest level of direct responsibility of sustainability and climate change efforts is Sustainability Committee.
(ii)Arçelik Sustainability Committee is comprised of the full executive board, including the COO (Chief Operations (Production&Technology) Officer), CFO,CSCO (Chief Purchasing and Supply Chain Officer), Finance Director, Strategic Planning Director, Human Resources Director, Customer Services Director, Innovation Director, Corporate Communications Coordinator, Energy and Environment Manager.
The head of Sustainability Committee is CFO and the General Secretariat of the committee is Energy and Environment Manager. The Sustainability Committee meets biannual.
Duties and responsibilities of the Sustainability Committee are:
•Specifying the corporate policies and strategies about corporate sustainability principles and climate change
•Following the consolidation of corporate business process with specified sustainability and climate change policies and strategies, provide integration to corporate business targets
•Evaluating corporate risks and opportunities in scope of sustainability principles and policies, make strategic decisions and manage prior risks and opportunities
•Identifying KPIs and targets of sustainability and climate change related issues
•Following the global developments on sustainability and climate change issues, to build the company strategies according to these developments
•Encouraging collaboration with NGOs, public enterprises, universities on sustainability and climate change issues
•Defining the strategic framework and decisions of the external sustainability assessment and rating tools (CDP, BIST SI etc.) and follow up the results

The sustainability working groups are established to control and coordinate of the sustainability and climate change implementations. The members of sustainability working groups consist of specialists and/or managers responsible for sustainability issues.
Arçelik Sustainability Working Groups (WG) are; Environmental Coordination WG, Energy Coordination WG, Climate Change Coordination WG, Green Chemistry Coordination WG, Health & Safety Coordination WG, Human Rights & Business Ethics Coordination WG, Value Chain Coordination WG.
These groups report to the Sustainability Committee members.
Duties and responsibilities of sustainability working groups are:
•Providing conformity of all activities in sustainability working groups to corporate strategy, policy and sustainability principles.
•Implementing decisions of Sustainability Committee.
•Implementing the sustainability as a main strategy in related processes
•Developing and reporting proactive solutions for the companies sustainability and climate change related risks and opportunities, share best practices
•Preparing and/or coordinate action plans for sustainability and climate change targets, follow the progress against targets, reporting performance monitoring and KPI results
•Recommending a roadmap related to sustainability and climate change operational issues
•Prepare and present the reports of external sustainability assessment and rating tools (CDP, BIST SI etc.)

CC1.2

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

Yes

CC1.2a

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

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
All employees	Monetary reward	Other: Environment and Society Contributors: Product and operational based environment, energy and society related projects	In order to increase motivation,success 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 Dept. of Arçelik has been implementing an "Pyramid Climbers Awards" annually,All employees who are successful are encouraged and rewarded.One category of this award process is "Environment and

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
			Society Contributors". 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 "Pyramid Climbers Award Ceremony" which is held in October annually. Arçelik develops environmental friendly,innovative and technological products which increase life standards of customers with R&D employees. 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 performance 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.
Chief Financial Officer (CFO)	Monetary reward	Energy reduction target	Energy Reduction Ratio (thus carbon emissions reduction) KPI is the part of the CFO's performance evaluation.
Chief Operating Officer (COO)	Monetary reward	Energy reduction target	Energy Reduction Ratio (thus carbon emissions reduction) KPI is the part of the COO's performance evaluation.
Other: Energy and Environment Manager	Monetary reward	Energy reduction target	Energy Reduction Ratio (thus carbon emissions reduction) KPI is the part of the Energy and Environment Manager's performance evaluation.
Other: White and blue collar employees	Monetary reward	Energy reduction project Energy reduction target	Energy Reduction Ratio (thus carbon emissions reduction) KPI is the part of related employees' performance evaluation.

Further Information

Page: CC2. Strategy

CC2.1

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

Integrated into multi-disciplinary company wide risk management processes

CC2.1a

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

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
Annually	Board or individual/sub-set of the Board or committee appointed by the Board	Arçelik has operations in durable consumer goods and electronics sector with production,marketing and after sales services,offers products and services more than 100 countries. Arçelik has 14 production plants in 5 countries (Turkey,Russia,Romania,China and South Africa). Arçelik's integrated risk management procedure covers all activities mentioned above.	> 6 years	In Arçelik,Risk Management System is an integrated multi-disciplinary process.Strategic, operational,physical,financial,reputational and environmental risks and oppurtinities are covered in Arçelik Risk Management System,to the fulfillment of the short and long term goals.Sustainability Committee evaluates corporate risks and opportunities related to climate change.Corporate climate change risks &opportunities are presented by the Sustainability Committee to Risk Management Committee for providing the integrity of corporate main risks.Risk Management Committee is formed to carry out its activities by making recommendations to the Board of Directors.Concerning the determination and assessment of risks and opportunities,estimation of their impact to company level,the management of these risks,their consideration in

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
				decision-making mechanism,the establishment of effective internal control systemsThe risk and opportunity results are monitored and assessed by the Board of Directors,annually

CC2.1b

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

Company level risks are mainly strategic and reputational risks which impact the whole company and stakeholders.Asset level risks are mainly operational,financial, physical and environmental risks which effect especially production plants,sales,purchasing,distribution and production engineering departments.Climate Change Coordination WG identifies the climate change (CC) related risks and opportunities at asset level and reports to Sustainability Committee.Sustainability Committee evaluates and prioritizes asset level corporate risks and opportunities.Company level risks and opportunities are identified by Sustainability Committee by considering defined asset level risks.The management process of CC risks and opportunities are defined in Sustainability Management Procedure.Risk and opportunity identification,determination and prioritization methods have been defined in "Risk Management Procedure".The prioritization of the risks and opportunities is based on Arçelik's scoring methodology which is defined by the external experts.CC related risks and opportunities are being scored and prioritized by the Sustainability Committee.Defined and prioritized risks and opportunities are notified to the Risk Management Committee.Risk Management Committee integrates the CC related risks and opportunities into the main risks and opportunities of the company. Prioritized risk and opportunity results are monitored and assessed by the Board of Directors,annually.Arçelik Sustainability Committee members are the top level responsible of business processes.Related Department Managers develop proactive solutions to handle risks and opportunities and integrate into the business procedures.Plant Directors are responsible to monitor and ensure that the risks are under control and opportunities are being assessed.
In each year CC risks and opportunities are being assessed and audited by the internal and external integrated systems' (ISO 14001&50001&14064-1) audit experts in on site audits.

CC2.1c

How do you prioritize the risks and opportunities identified?

In Arçelik, risk and opportunity identification, determination and prioritization method has been defined and published in the "Risk Management Procedure". The prioritization of the risks and opportunities is based on Arçelik's scoring methodology. Climate change related risks and opportunities are being scored and prioritized by the Sustainability Committee.
According to Arçelik's risk and opportunity scoring methodology, the risks and opportunities are scored (1-5 points) considering financial, reputation, production,

human and legal impacts and the max score is defined as impact point. The frequency of the risks and opportunities are also scored (1-5 points). The risk and opportunity points are scored by multiplying frequency and impact point for prioritization.
E.g. some of the high potential risks can be found below:
Risk1: International agreements, legal legislations, air emission and climate change limitations
Risk factor1: Additional investment need; Needs for using Best Available Technology (BAT); Energy cost increases; National GHG mitigation target; Necessity for buying Carbon credits
Risk2: Responsibilities of Emission Reporting
Risk factor2: Failure to obtain GHG emission factors from energy suppliers for Tier 2 reporting
Risk3: Product labelling regulations and standards
Risk factor3: Inability to capture the competition of using voluntary labels (water label, carbon label, eco-label etc.) except energy
E.g. some of the high potential opportunities can be found below:
Opportunity1: International agreements, legal legislations, air emission and climate change limitations
Opportunity Factor1: Voluntary reporting of GHG emissions
Considering the current status of Turkey, the verification of Arçelik GHG inventory is an opportunity for the company. GHG emissions (Scope 1&2) are being verified by an independent body since 2010. In 2013 Arçelik's logistics' GHG emissions (Scope 3) have been calculated and verified by an independent body.

CC2.1d

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

Main reason for not having a process	Do you plan to introduce a process?	Comment

CC2.2

Is climate change integrated into your business strategy?

Yes

CC2.2a

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

Arçelik ‘s 4th core business strategy is,:to increase the ability to offer enriching, pioneer, innovative, climate change respected and environmental friendly product, solution and technology to society and customer through product life cycle.
i. Arçelik’s business strategy management method is explained below :
The highest level of direct responsibility of sustainability and climate change efforts is Sustainability Committee (SC).All business strategies and targets are being studied and implemented by Climate Change Coordination WG (CCC WG).This WG is responsible to integrate climate change efforts and ensures that all efforts comply to Arçelik’s strategy,policy and legal regulations.This WG collects and reports the information to influence the strategy.The WG meets quarterly.
CCC WG identifies the company’s climate change related risks and opportunities at asset level and reports to SC. SC evaluates and prioritizes asset level corporate risks and opportunities.Company level risks and opportunities are identified by SC.Climate change risks,strategies and influence to business targets are monitored and assessed by SC,biannual.
ii. The aspects of climate change that influence Arçelik’s strategy are mainly relevant to products and production phase.These aspects are;
International agreements, legal legislations (e.g. emission reporting,BAT)
Product labelling regulations and standards (e.g. energy label,voluntary environmental labels)
Extended producer responsibility and energy efficiency requirements
Fuel/Energy taxes and regulations (e.g. energy prices,renewable energy)
Physical conditions (this mainly effects investments and location choice)
Decrease of Natural resources (e.g. water,energy,raw material decreases)
iii. We focus on climate change in our short term strategies, which are based on 3 main issues:
to mitigate GHG emitted by production by energy efficiency projects; to provide our customers with green products that has the highest water and energy saving values;to conduct awareness raising informing studies regarding climate change
To support GHG mitigation;
• Our production plants have 5% reduction target for energy consumption.In 2013, 8620 tons of eCO2 reduction has been achieved by these projects.
•We switched to renewable energy use at our Headquarter, Cooking Appliances Plant, Electronics Plant and 17 distribution offices.
To provide our customers green products;
•We have spared TL 35.87 million to environmental-friendly R&D investment and expenses.
•Since 1992,energy consumption of refrigerator,washing machine,dryer,TV,dishwasher,oven are reduced in the ratios of 72%,76%, 72%, 66%, 52%, 53%.
To conduct awareness;
•Arçelik,became a member of the Climate Platform in 2011
•Arçelik former CEO Levent Çakıroğlu has been the President of the Turkish Corporate Leaders Group on CC, he represented Turkey in the World Climate Summit 2012. Having also participated in the World Climate Summit held in Warsaw 2013.
• Arçelik signed the 2˚C Challenge Communique.
•Arçelik started "Market Transformation of Energy Efficient Products”Project to draw attention of consumers to energy efficient products.
•Trainings in universities, trainings to suppliers
iv. Arçelik’s long term business strategies related to climate change are:
•To produce environmental friendly products by climate change and environment sensitivity, energy efficient production technologies, prioritizing climate change and environment sensitivity in all other activities, contributing to sustainable living by realizing mentioned commitments.
•Collaboration with institutions and public enterprises in developing-phase of legal regulations and standards related to our products and processes to sustain fair competition environment.
Proceeding in these strategies, we focus on;
•Enhance energy efficiency of the products beyond regulations
•Generalize clean and sustainable technology in production
•Generalize green activities in all our other processes (e.g. green logistics, green procurement, green marketing)

v. Arçelik keeps its strategic advantage over competitors by increasingly continue its environmental achievements, such as:
Arçelik's GHG emissions have been verifying and certifying since 2010 and Arçelik was the first in its sector in Turkey.
"Cactus Dishwasher" was entitled to represent Turkey at Rio+20 in "Sustainable Development and Green Economy" category, beside the Turkey's best practices.
Arçelik SR 2010 is first approved B(+) report in white goods sector in Turkey.
Arçelik's excellent reputation honoured by its success in CDP since 3 years by achieving Disclosure Leadership,Performance Leadership.
vi. The most substantial business decisions that have been influenced by the climate change are;
•2020 climate change target is to reduce the GHG emissions per sales revenue by 70%.
•Saving 5% on energy via energy efficiency projects thereby reducing our GHG emission
•Increasing electricity supply generated through renewable energy resources
•Ensuring continuity of the following certificates, ISO 14001&14064-1&50001
•Increase share of using maritime transport
•"Dynamic Routing" practice in logistics to reduce GHG
•R&D investment and expenses focused on developing environmentally friendly products.
vii. One of the climate change aspects that influences our business strategy is product labelling regulations & standards. In EU, energy labelling regulation is to be analysed and revised by the year 2016. Technological development has exceeded the limits of current energy label and top energy efficient class on the label has already become common in the market. EU Commission has started to work on new energy label layouts. It is expected that new energy label will be in force by 2018. New label proposals suggest a possible downgrading and/or rescaling. It means that A+++ of today may correspond to B or C energy class if the letter-scale exists. In the scenarios, high energy efficient products of today will be labelled with a reputation of less efficient. This will cause us to design more efficient appliances to meet consumer demands.Arçelik plans to tackle energy efficiency problems by designing high energy efficient products. E.g. for the refrigerators energy efficient compressors and low thermal conductivity insulation materials are being designed.
viii.The aspects of climate change that influence Arçelik's strategy are mainly relevant to products and production phase. Production phase relevant climate change aspects are mainly in energy usage and energy regulations as mentioned in (ii). The most substantial business decision in Arçelik is reducing GHG emissions by using renewable energy.As Arcelik,starting from 2012 June, we have been using electricity produced from renewable energy sources.We bought half of electricity consumption of 2012 from renewable energy company (1,431,156 kWh). In 2013 we bought 53,449,021.40 kwh.

CC2.2b

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

CC2.2c

Does your company use an internal price of carbon?

No, but we anticipate doing so in the next 2 years

CC2.2d

Please provide details and examples of how your company uses an internal price of carbon

CC2.3

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

Direct engagement with policy makers
Funding research organizations
Other

CC2.3a

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

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Energy efficiency	Support	1) Arçelik supported the "En-Ver (Energy Efficiency) Project" launched in collaboration with T.R.Ministry of Energy and Resources as the corporate sponsor."En-Ver Project" is in cooperation with public,private sector and NGO's,for the purpose of raising awareness for using energy efficiency at all segments of society and sectors. 2) Arçelik started the project "Market Transformation of Energy Efficient Products" jointly with UNDP, GEF, 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 2015 is to enhance the strategy and infrastructure of transformation to less energy consuming electrical home appliances thus reducing domestic electric consumption and greenhouse gas emissions. 3) Arçelik participates and gives comment on the preliminary phase of EU regulations on energy efficiency, labelling and F-Gas by the membership in CECED (European Committee of Domestic Equipment Manufacturers). 4) Arçelik has a close relationship with all relevant ministry departments and work together on the preliminary phase of EU regulations to Turkish regulations system. Arçelik took part in the consultation of Turkish energy labelling and eco-design directives, which are published in official journal, dated 22 June 2012. 5) In order to increase energy efficiency in products and production, joint works with both governmental agencies 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.	

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Other: Climate Change	Support	1) Arçelik takes part in the working group which has been established by the Ministry of Environment and Urban Planning&UNIDO. The group is working on the technical specifications of determining, collecting and disposal of the Ozone Depletion Substances that are banned for usage.2)Arçelik became a member of Climate Platform of Turkey which is established as an independent non-profit initiative for providing support for operations to combate climate change,in cooperation with REC(Regional Environmental Center)Turkey and TÜSİAD (Turkish Industry and Business Association). 3)Arçelik gave comments on the draft regulation of Turkish Monitoring and Reporting Directive,in 2012. 4)Arçelik made a joint study with 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 GHG emissions. 5)During the 17th United Nations Framework Convention on Climate Change (COP17), held with participation of government representatives of 190 countries,international organizations and representatives of NGO's Arçelik A.Ş. former CEO Levent Çakıroğlu represented Turkey as "President of Turkey Climate Change Group of Leaders " and presented opinions about role and leadership of private sector for eco-friendly and green development at the "Towards Rio +20,Business Leaders Build Change" panel. 6)Arçelik considers climate change as an important risk 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 Challenge Communiqué" prepared by Corporate Leaders Network (CLN) including Turkey and signed by more than 200 corporate officers operating in various industries in 29 countries. 7) Arçelik takes part in Istanbul Stock Exchange Sustainability Index (BIST SI) formation on the sustainability which also includes climate change performance indicators. 8) WEEEs (waste of electrical and electronic equipment), such as refrigerator, air conditioner, etc. may contain ODS which have high global warming potential (GWP). The gases must be properly extracted and treated in an environmental-friendly way. Arçelik made a joint study with the Ministry of Environment and Urban Planning to publish the “WEEE Regulation” in Turkey.	

CC2.3b

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

CC2.3c

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

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

CC2.3d

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

No

CC2.3e

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

Yes

CC2.3f

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

Arçelik is the first member of Climate Change Platform Turkey, which has been set in 2011 and Arçelik contributes to fund this Platform with TL 7000 per year.

CC2.3g

Please provide details of the other engagement activities that you undertake

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 (YTU) Mechanical Engineering,Master Degree Thesis Study.
• Water Recycling, Minimization and İntegrated Water Management Project in Arçelik Cooking Appliances Plant-Istanbul Technical University, Environmental Engineering

CC2.3h

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

All business strategies and targets are being studied and implemented by Climate Change Coordination WG (CCC WG) which consists of Energy and Environment Manager, Environment and Energy Specialists and production managers.This Group is responsible to integrate climate change efforts and ensures that all efforts comply to Arçelik's climate change strategy,policy and legal regulations.This Group collects and reports the information to influence the strategy.The Group meets quarterly.CCC WG identifies the company's climate change related risks and opportunities at asset level and reports to Sustainability Committee.
Arçelik has an integrated ISO 50001 & 14001 & 14064-1 Management Systems. Energy managers of the plants reviews the projects that provides GHG mitigation and energy efficiency projects quarterly and reports the results to directors and CCC WG annually. CCC WG controls the compliance of the results with the climate change policy and strategy. The communication and coordination are handled by CCC WG.
Arçelik engages with policy makers on mitigation and adaptation as well as environmental legislative issues using a wide variety of communication channels. CCC WG representatives are also the member of T.R. Environment and Urban Planning Ministry's technical committees (TC) on climate change (Climate Change Awareness, Mitigation TC etc.). Energy and Environment Dept. represents Arçelik in several NGOs in Turkey and mainly in CECED for EU activities.
These organizations and activities ensure that all engagement activities are in line with Arçelik's climate change policy and strategy.

CC2.3i

Please explain why you do not engage with policy makers

CC2.4

Would your organization's board of directors support an international agreement between governments on climate change, which seeks to limit global temperature rise to under two degree Celsius from pre-industrial levels in line with IPCC scenarios such as RCP2.6?

Yes

CC2.4a

Please describe your board's position on what an effective agreement would mean for your organization and activities that you are undertaking to help deliver this agreement at the 2015 United Nations Climate Change Conference in Paris (COP 21)

We have supported an agreement that considering the EU climate change position (40/27/27 target) as far as possible but also having regard to the fact of Eastern Europe position. For example, Poland has produced its 90% of energy from coal and Poland is a critical country in home appliances sector. So we have to support a policy that do not prevent competitiveness with this kind of countries.
Considering climate change as a global problem, Arçelik has been supporting "The 2oC Challenge Communique" prepared by Corporate Leaders Network (CLN) since 2011.
According to IEA calculations, the most important subject on climate change is energy efficiency. And in line with this calculation, Arçelik have focused on energy efficiency in product and production for 20 years.
Some of our energy saving products manufactured:

- The world's least energy consuming washing machine of the year 2013: The washing machine that consumes 50% less energy than the A+++ energy class is quoted among the least energy consuming washing machines in the world.
- The world's least energy consuming heat pump tumble dryer of the year 2013: Consuming 10% less energy than A +++ energy class with a heat pump technology featuring an inverter compressor.
- The world's least energy consuming oven of the year 2013: With an energy consumption value of A-45% in 65 lt built-in oven class, which is the "World's Least Energy Consuming Oven".
- The world's least energy consuming refrigerator of the year 2013: In 2013 our No-Frost combi type refrigerator with an energy index value of A+++ - 20% and static combi type refrigerator with an energy index value of A+++ - 30%
- The world's most energy efficient compressor of the year 2013: the serial production of the hermetic compressors with a 2.0 W/W coefficient of performance (COP) value.
- Energy efficient TV of the year 2013: our first A++ energy class product in 39" and 55" screen sizes were launched in 2013.

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, 10 of Arçelik'sdomestic production plants achieved a "Platinum" certificate for energy efficiency. Arçelik also first home appliances company to be achieved "Platinium" certificate.
With energy efficiency Projects in Production Plants, we have saved 84351 GJ in 2013 with 105 energy efficiency projects. Totally; 38030 GHG emission has been reduced since 2010.
In addition to energy efficiency projects in our Plants, Arçelik has also lead its suppliers to do energy efficiency projects.

Further Information

Page: CC3. Targets and Initiatives

CC3.1

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

Absolute and intensity targets

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment
Abs1	Scope 1+2	100%	5%	2010	157725	2015	Arçelik aims to reduce total eCO2 emissions of its domestic production sites from 2010 (base year) to 2015 by 5%
Abs2	Scope 3: Downstream transportation and distribution	100%	50%	2010	57760	2015	Arçelik aims to reduce total eCO2 emissions of its transportation activities from 2010 (base year) to 2015 by 50%

CC3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions	Target year	Comment
Int1	Scope 1+2	100%	70%	metric tonnes CO2e per unit revenue	2010	0.000036	2020	Arçelik aims to reduce total eCO2 emissions of its domestic production sites from 2010 (base year) to 2020 by 70% per sales revenue.

CC3.1c

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

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment
Int1	Decrease	7			If we achieve our intensity target it can be expected that our absolute GHG emissions may decreased 7% by 2020 compared to base year 2010.

CC3.1d

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

ID	% complete (time)	% complete (emissions)	Comment
Abs1	60%	100%	We have met the target before the target year thanks to energy efficiency projects and supply of electricity produced by renewable energy sources. In 2013 the GHG emissions are verified as 141,194 tCO2e. Totally 10.5% GHG emissions has been decreased in 2013 compared to base year (2010).
Abs2	60%	17%	With the "Logistic Mode Alteration Project" realized, totally 17% emission has been decreased in 2013, compared to base year. Our base year emissions were not verified by an independent body. We have just completed the verification process for 2013. Because of the verification, our calculation methodology has changed technically. We will review our target for logistics according to our verified emissions (2013).
Int1	30%	64.6%	In 2013, we decreased our scope 1+2 emissions per sales revenue 64.6% compared to our base year (2010). We are studying to achieve the intensity target for 2020.

CC3.1e

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

CC3.2

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

Yes

CC3.2a

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

In consideration of product life cycle assessment,GHG emission emitted during to use of the products is more higher.(95-96% consumer use,<4% production and raw material supply,<0.1% product logistics).
Operations aimed at developing product energy efficiency have great importance in terms of ensuring GHG emission mitigation at national and international level, the environmental impact of the products generated in usage phase. Therefore, R&D carries out studies on product energy efficiency development.
The details for the year 2013 can be found below:
Dishwasher: Arçelik Cactus dishwasher is one of the most efficient water saving dishwasher at A++ class with 6 litre water consumption. The aluminium isolation material, which is only utilized by Arçelik in the world, helps the product save 10% energy.
Annual energy consumption of 63101 I model is 194 kWh (0.68 kWh/cycle) and A+++ -10% less energy consumption,. Our model that merges "The First Self-Cleaning Filter Technology" that extends filter cleaning requirement up to 1 year with 10% less energy consumption compared to A+++ in 10 programs was put into use.
Washing Machine:Arçelik produces one of the Least Energy Consuming Washing Machines in Europe" which consumes 50% less energy than the A+++ energy class at 8 kg capacity.
Oven: Arçelik innovative oven which consumes 45% less electricity compared to A energy class is the World's least energy consuming oven. It consumes 580 Wh in eco-turbo cooking mode. It is also the most silent built-in oven in the World with a sound power level of 41 dBA declared.
Once stand-by energy consumption levels of products with electronic clocks at homes in 15 European countries has been reduced from 5W to 0.8 W, 231000 tons of GHG emission will be prevented.
Refrigerator: Thanks to R&D studies conducted in 2013, a No-Frost bottom-mounted freezer-refrigerator with A+++- 20% energy level was designed. It has with the highest energy efficiency level in the world in its category in 2013. Neofrost cooling system enables to store foodstuffs at a relatively higher humidity and provides much longer storage life. Thus it helps to reduce food waste and to increase resource efficiency. Almost the entire refrigerator product range of Arçelik features an environmentally friendly hydrocarbon refrigerant known as R600a. Besides, Arçelik do not use fluorinated greenhouse gases in the blowing agents of insulation material.
We have developed a "Arçelik Energy Efficient Refrigerators Grouped Project". It is a voluntary emission reduction Project, because there is not any regulatory emission trading scheme in Turkey and so that there are no allowances allocated or purchased in scope of our Project.
The project activity is manufacturing enhanced energy efficient refrigerators by applying advanced technologies and selling them to Turkish customers. The Project

crediting period is 10 years (2012-2022) and the estimated average emission reductions resulting from this project is estimated around 1.8 million tCO2e, totally (The project is currently at the approval stage by the related authorities, the estimation was based on the assumptions made in line with the CDM methodology). The validation process and registration phase have been completed. Now the verification is under process.
Tumble Dryer: Developed in 2012, the tumble dryer consumes 10% less energy than A +++ energy class with a heat pump technology featuring an inverter compressor and variable speed brushless electric motor . The product capacity is 8 kg with an annual energy consumption of 155 kWh.
Television: Grundig has managed to become the first Turkish manufacturer to obtain “Eco Flower” approval for Arcelik 40”/46” TV models. LED-backlit LCD panels (LED TV) consume less energy when compared with regular LCD panels.
Since 1992, energy consumption of our refrigerators was reduced in the ratio of 72%, energy consumption of washing machine, tumble dryer, TV, dishwasher, oven are reduced in the ratios of 76%, 72%, 64%, 52%, 47% respectively.
In refrigerators, HFC-134a is replaced with HC-600a which is much more environmental friendly in terms of Global Warming Potential.By the year of 2012, R600a have been used in 98% of products. HFC-134a is used only for product sold to the countries in which the use of HC-600a is restricted or banned.Thanks to transition projects, GHG effect per refrigerator is 1 over 222 of 1995 GHG emissions.
GWP (Global Warming Potential) (100 year) of R134a GWP is 1430, and R600a GWP is 3. GWP of R134a is 476 times higher than GWP of R600a. To calculate GHG emissions reductions, we use grid emission factor as 0.523 ton/kwh and calculation method as "activity data x emission factor".

CC3.3

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

CC3.3a

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

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	0
To be implemented*	0	0
Implementation commenced*	0	0
Implemented*	105	8393
Not to be implemented	0	0

CC3.3b

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

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
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.	2374	Scope 1 Scope 2	Voluntary	927588	1194457	1-3 years	11-15 years	For the production equipment that have higher lifetime (for example boilers), the investment that we apply to increase their efficiency has higher lifetime (parallel to lifetime of main equipment). But for the equipment and/or systems that can be changed according to production, lifetime of the investment is lower. Mean value is at least 11-15 years.
Low carbon energy installation	Use of high efficiency fluorescent armatures, use of motion detectors, positioning illumination lamps etc.	448	Scope 2	Voluntary	174873	168426	<1 year	6-10 years	Because lifetime of fluorescent lambs is limited we have to change them generally in 5 years. But for sensors or other efficiency technologies, lifetimes are higher. So, mean value is nearly 10 years.
Energy	Improvement at	1516	Scope	Voluntary	593026	1833371	1-3	11-15	The investments effecting

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
efficiency: Processes	processes using natural gas etc		1				years	years	natural gas processes generally have higher lifetime. They can be heat recovery units, efficient boiler/burner applications or changing the whole operation to another more efficient way. They all have bigger impacts. So lifetime is at least 11-15 years.
Energy efficiency: Processes	Improvement operations regarding electric motors etc.	7	Scope 2	Voluntary	2645	10000	4-10 years	6-10 years	Electric motors are the most important elements for energy performance of factories. The initiatives written under this category are about increasing energy efficiency by optimizing the production. Because the equipment and/or systems that can be changed according to production, lifetime is estimated as 6-10 years.
Energy efficiency: Processes	A/C fans' being variable-speed, improvement of funnel ventilation, use of dehumidifiers instead of A/C plants etc.	27	Scope 2	Voluntary	10650	2300	<1 year	6-10 years	Variable speed drives can be used during their whole life time.
Energy efficiency: Processes	Reduction of compression losses, creation of control systematics etc.	1189	Scope 2	Voluntary	464210	82405	<1 year	6-10 years	Compression losses can be reduced by using fittings with low losses, reducing the number of equipment which use compressed air, reducing

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
									the operating pressure, making regular checks and making air production more effective. Most of the initiative has no/low financial investment. Generally lifetime of application is long.
Low carbon energy installation	Installing inverters to electric motors, efficient motor implementation etc.	2832	Scope 2	Voluntary	1105498	929026	<1 year	6-10 years	We generally use new energy efficient electric motors during their whole lifetime. Lifetime is more than 10 years. But if there is a newer and more efficient technology is available, we change the existing electric motors. It is up to the progress of technology. So, mean value is nearly 10 years.

CC3.3c

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

Method	Comment
Compliance with regulatory	Arçelik complies with legal legislations on GHG emission reduction and fully comply with eco-design legal legislation which

Method	Comment
requirements/standards	describes product energy efficiency limits. Thanks to membership in CECED (European Committee of Domestic Equipment Manufacturers) we participate in all operations carried out in EU regarding product energy performances and labelling and developments are closely followed. Arçelik has a close relationship with all relevant ministry departments and work together on implementation of EU regulations to Turkish regulations system. Energy efficiency operations in production are performed in accordance with all legal requirements described at Turkish 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 a number of 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 investment 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 agencies 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.

CC3.3d

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

Further Information

Page: CC4. Communication

CC4.1

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

Publication	Status	Page/Section reference	Attach the document
In mainstream financial reports but have not used the CDSB Framework	Complete	Page 73 / Section: Corporate Responsibility / Arçelik Annual Report 2013	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/ARCELIK_ANNUAL_REPORT-2013.pdf
In voluntary communications	Complete	Page 26-27 / Section: Combatting Climate Change / Arçelik Sustainability Report 2013	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/Arçelik - Sustainability Report 2013.pdf
In voluntary communications	Complete	Page 182 / Section: Türkiye ve Arçelik'te Enerji Verimliliği / 3 e Electrotech	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/3-E-Electrotech_Turkiye.jpg
In voluntary communications	Complete	Page 16 / Section: Haber / Banyo Mutfak	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/Banyo-Mutfak_Mermerin.jpg
In voluntary communications	Complete	Page 2 / Section: Doğa Dostu Şirketler / Capital	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/Capital-Ek2_35.jpg
In voluntary communications	Complete	Page 5 / Section: Karbon Saydamlık Lideri Arçelik Dünya Çevre Gününe Dikkat Çekiyor / Bizden Haberler	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/bizden_haberler_k.jpg
In voluntary communications	Complete	Page 30 / Section:Dünya Isınıyor / Bloomberg Businessweek	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/bloomberg-Businesweek k.jpg
In voluntary communications	Complete	Page 12 / Section: ISO Çevre Ödüllerinde Arçelik'e Birincilik Ödülü / Bolu Takip	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/bolu_takip_k.jpg
In voluntary communications	Complete	Page 6 / Section: Arçelik'in Buzdolapları Daha Çevreci Olacak / Bugün	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/bugun_arcelikin_k.jpg
In voluntary communications	Complete	Page 6 / Section: Enerjideki verimlilik platin ödülü getirdi /	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/bugun_enerjideki_k.jpg

Publication	Status	Page/Section reference	Attach the document
		Bugün	
In voluntary communications	Complete	Page 5 /Section: Arçelik doğaya destek veriyor / Dokuz Sütun	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/dokuz_sutun_k.jpg
In voluntary communications	Complete	Page 12 / Section: Arçelik ürünleriyle enerji verimliliğine dikkat çekti / Dünya	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/dunya_arcelik_k.jpg
In voluntary communications	Complete	Page 45 / Section: Arçelik Doha'da Dünya İklim Zirvesi'nde Türkiye'yi temsil etti / Ekonomix	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/ekonomix_k.jpg
In voluntary communications	Complete	Page 73 / Section: Arçelik enerji verimli buzdolapları ile karbon finansmanı geliri elde edecek / Enerji Dünyası	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/enerji_dunyasi_k.jpg
In voluntary communications	Complete	Page 9 / Section: Arçelik'e Enerji Verimliliğine Üç Ödül Birden / Ankara Gündem	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC4.1/ankara_gundem_k.jpg

Further Information

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

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

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

CC5.1a

Please describe your inherent risks that are driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
International agreements	Countries that are signatories to Kyoto Protocol United Nations Framework Convention on Climate Change(UNFCCC) which is single international framework aimed at combatting global warming 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 following Turkish Grand National Assembly's	Increased operational cost	>6 years	Direct	Very likely	Medium	There is no mitigation target and base year information neither in National Climate Change Action Plan nor in Turkey Pledge reported in UNFCC technical paper. For this reason the financial implications that would become from the mitigation costs cannot be estimated and calculated. This is a grey area for Turkey and our sector. To manage the risk, we have energy efficiency targets annually. The	To manage this risk Arçelik Sustainability Committee gives targets every year for increasing energy efficiency in production to reduce GHG. With energy efficiency projects in Arçelik Production Plants at last 4 years, we have saved: • 71137 GJ in 2010 with 138 energy efficiency projects, • 109516 GJ in 2011 with 173 energy efficiency projects. • 90463 GJ in 2012 with 134 energy efficiency projects. • 84351 GJ in 2013 with 105 energy efficiency projects.Totally; 38030 GHG emission has been reduced since 2010. As a result of the energy efficiency	Investments and costs of energy efficiency projects (2010-2013): 13,814,526 TL

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	passing “The Act Regarding Approval of Participation to Kyoto Protocol aimed at United Nations Framework 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 which was not a party to UNFCCC when protocol was adopted was not included in Protocol Annex-B list which contains Annex-I signatory countries, where numerical limitations and reduction obligations are defined.						estimated financial implication (investments and costs) of the energy efficiency target is 12,000,000 TL (for 2014-2016).	projects undertaken, the last three year performance (2010-2013) of electricity consumption per product at the domestic production plants shows a decrease of; • 43.1% electricity consumption per unit product at the Electronics Plant • 22.8% electricity consumption per unit product at Refrigerator Plant • 21.8% electricity consumption per unit product at Tumble Dryer Plant • 16.4% electricity consumption per unit product at Washing Machine Plant • 7.5% electricity consumption per unit product at Dishwasher Plant • 5% electricity consumption per unit product at Cooking Appliances Plant	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Accordingly, Turkey has no numerical limit or reduction target in first obligation phase which covers 2008 to 2012 of the Protocol.However, according to the Kyoto Protocol, a new mechanism will 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 will receive a greenhouse gas reduction target. When the country receives a target, this target will be distributed to sectors. There will be necessity for the investment to decrease GHG. This will cause significant increase in costs. Nonetheless, if the								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	sectors may not reach the given targets, carbon purchase necessity may occur and costs would be affected significantly. Because of the cost increase product prices may be affected and there can be disadvantage in competition.								
Air pollution limits	Upon entering post -2012 new obligation period under the Kyoto Protocol, the status of Turkey is still not clarified yet, that 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 to this,	Increased operational cost	1 to 3 years	Direct	Likely	Medium	Turkish Ministry of Science, Industry and Technology Turkish Industrial Strategic Plan 2011-2014 declares if Turkey starts to implement IPPC Directive requirements as in EU, the investment costs for Turkish industries will be 12.6 Billion EUR (approx.	Most of the production processes of Arçelik production plants comply with IPPC and BAT documents. Nanotechnology product is using in the production. Integration process for introducing "Environmentally Friendly Nanotechnology Product" has been underway for the entire plants since 2009 in an effort to reduce the use of	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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.						37.8 Billion TL).	pre-treatment chemicals and energy during the surface finishing before the implementation of sheet piece powder coating. Thanks to this new product, the related process is completed at 25 oC instead of 50-55 oC hence a significant level of energy is saved while the process also no longer produces any phosphate sludge. As an example;in our dishwasher plant nanotechnology surface treatment process is being used in production process since 2012. This technology provides less natural gas consumption (35.053 m3/year reduction) and less GHG emission emitting (70 tCO2e/year reduction). Thanks	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								to this transition dishwasher plant has been selected as “Best Available Technology (BAT) using plant” by T.R. Ministry of Environment and Urban Planning.	
Emission reporting obligations	Approved GHG emission reports to be prepared and sent to the Ministry every year under "The Regulation on Monitoring of GHG Emissions" which was prepared by T.R. Ministry of Environment and Urban Planning and entered into force with publication in Official Journal, dated 25 April 2012 and no. 28274, contains calculating and verifying of GHG emissions and GHG monitoring plans. Under the regulation, first reporting obligation	Wider social disadvantages	1 to 3 years	Direct	Virtually certain	Medium	ISO 14064 GHG Emission Inventory Verification is an ongoing process for Arçelik. But the verification for the Ministry is not entered into force yet. It will start at 2016. Total estimated financial implication for both ISO 14064 & Ministry verification process is may be 75,000 TL for the period of 2014-2016.	To manage the risk, Arçelik has calculated greenhouse gas emissions released during its activities since 2006. In 2011, ARÇELİK established Greenhouse Gas (GHG) Management and Reporting System, before the regulation publish date. ARÇELİK calculated the Greenhouse Gas (GHG) emissions sourced by its facilities by using IPCC-2006 and in accordance with ISO 14064 GHG Standard. Since 2010, ARÇELİK’s GHG values have	ISO 14064 verification cost is15,000 TL for 2013.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	period for industry will start in 2016 for GHG emissions of 2015. 3 of Arçelik Production Plants (Washing machine, Refrigerator, Electronics) are in the scope of this regulation. Arçelik has calculated greenhouse gas emissions released during its activities since 2006. In 2011, ARÇELİK established Greenhouse Gas (GHG) Management and Reporting System, before the regulation publish date. ARÇELİK calculated the Greenhouse Gas (GHG) emissions sourced by its facilities by using IPCC-2006 and in accordance with ISO 14064 GHG Standard. Since 2010, ARÇELİK's GHG values have							been audited and verified by an independent body in "100% verification" and "reasonable assurance" level. The scope of this verification is Arçelik's all production plants in Turkey and Head Office.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	been audited and verified by an independent body in "100% verification" and "reasonable assurance" level. The scope of this verification is Arçelik's all production plants in Turkey and Head Office. Arçelik shares the GHG emissions with all stakeholders through Sustainability Reports. However, for our ISO 14064 verification process there is no emission factor declared by the ministry for electricity. For this reason the electricity emission factor is being calculated by ourselves. This causes uncertainties and differences (calculation results,								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	acceptances etc.).								
Fuel/energy taxes and regulations	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, electricity generation from renewable energy sources is not at adequate level. With new legal regulations, it is highly probable that electricity and	Increased operational cost	Up to 1 year	Direct	Virtually certain	Medium	If it is assumed that the natural gas and electricity consumption is the same with 2013 for 2014 and 2015, the estimated financial impact caused by the price increases for these years is approx. 5 million TL. (This assumption has been done to exclude the price increase caused by the consumption)	To manage risk, energy consumption quantity per product is followed in "kWh/product", "m3/product" and reported. In the light of data, obtained projections are made and long term targets are determined. In addition to that, developments regarding renewable energy are closely followed; operations are carried out to include this subject into prospective business plans.	For the last 10 years, electricity unit price has increased 7% per year. Between 2012-2013 electricity price increased 5.8%. Between 2012-2013 natural gas price increased 12%. Total extra cost sourced by price increases: 4.4 Million TL

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	natural gas costs increase to extend that may cause problem in competition.								
Product efficiency regulations and standards	Intense work was performed in past period in EU market on the subject of energy efficiency. Legislation harmonization works in Turkey became simultaneous with EU recently. For this reason, domestic operational costs are affected.	Increased operational cost	Up to 1 year	Direct	Virtually certain	Medium	Estimated financial implication of membership to some associations (CECED, TÜRKBESD etc.) is 400,000 TL per year.	Arçelik closely follows the new energy labelling by CECED and takes necessary actions.Working in collaboration with TÜRKBESD,we convey developments about energy labelling in EU to T.R.Ministry of Science, Industry and Technology and direct the sector.	Cost of membership some associations (CECED, TÜRKBESD etc.) is approximately 400,000 TL. Arçelik spent about 35.8 million TL for environmental friendly R&D activities in 2013.
Product labelling regulations and standards	EU energy labelling regulation is to be analysed and revised by the year 2016. Such analysis led by the EU Commission showed the current energy label does not fully meet the technological advancement of today. Technological	Reduced demand for goods/services	3 to 6 years	Direct	Very likely	Medium	In 2005, the Company's consolidated sales revenue was 3.1 billion EUR (approx 4.96 billion TL), while the international sales share was 40%of total sales revenue (1.2 billion EUR ~ 1.92 billion	Arçelik plans to tackle energy efficiency problems by designing high energy efficient compressors with low thermal conductivity insulation materials. Thanks to Arçelik's R&D strategies and continuous investment so far, Arçelik has already	Arçelik spent about 35.8 million TL for environmental friendly R&D activities in 2013.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	development has exceeded the limits of current energy label and top energy efficient class on the label has already become common in the market. Appliance with higher energy efficiency class than A+++ cannot be represented on current energy label. Thus EU Commission has started to work on new energy label layouts along with calculation methods of energy efficiency index. It is expected that new energy label will be in force by 2018. At the same time, the standard for energy consumption and performance measurement methodology for refrigerating appliance is revised. A new						TL). In 2013, the consolidated net sales turnover reached 11.098 billion TL, and international sales comprised 58% of consolidated sales. One of the main reason of the increase in international sales share is our investment on environmentally friendly R&D activities and producing competitive energy efficient products. When this new labeling standard enters into force, our international sales share may be significantly effected.	designed variable speed compressor, one of the most efficient design in the World. Arçelik has also invested in vacuum insulation panels that enables very low conductivity compared to conventional polyurethane. As a matter of fact, energy efficiency investments in component technologies are accompanied with system optimization expertise in Arçelik.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	global measurement methodology is prepared and it is soon to be published. It is expected to be effective by EU law with the introduction of new energy label. R&D test methodologies are to be updated and all new Arçelik designs will be in accordance with new global standard by 2016. New label proposals suggest a possible downgrading and/or rescaling. It means that A+++ of today may correspond to C or D energy class if the letter-scale exists. In this scenario, high energy efficient products of today will not become less efficient tomorrow but they will be labelled with								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	a reputation of less efficient. This will eventually cause manufacturers to design more efficient appliances to meet consumer demands for top energy efficient products.								
Other regulatory drivers	Regulation on the Control of Waste Electrical and Electronic Equipment was published in the Official Gazette No. 28300 of 22.05.2012. Producers are responsible for financing the costs of the collection, treatment, recovery and environmentally sound disposal of WEEE from private households after collection points and distributors. In the WEEE Regulation, WEEE from private household	Increased operational cost	1 to 3 years	Direct	Likely	Medium	During the life time of the refrigerators and coolers, there are annual losses of blowing agents. The losses change according to the age of the equipment. Quantity of collected blowing agents in the WEEE treatment plant has been estimated. For 2015 the cost of disposal of the gases to prevent fugitive emissions is approx.. 20,000	To manage this risk Arçelik plans to establish 2 treatment plants to recycle WEEE. Refrigerators and other cooling appliances contains Chlorofluorocarbons (CFCs) will be environmentally recycled. Buy-back campaigns will be organized to collect the old appliances. The goal of campaigns is exchanging old refrigerators and other cooling appliances with newer and more energy efficient equipment.	Investment cost of the treatment plants is approximately 9 Million TL.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	collection targets: 0.3 kg per inhabitant in 2013, growing to 4 kg/inhabitant in 2018. Collection targets of WEEE from private households are separated according to 6 WEEE collection categories. Producers shall provide to achieve the collection targets. Producers and treatment plants shall meet the recycling and recovery targets. The most important climate change issue for white goods sector is old refrigerators because of the gases included. Due to collection and destruction of the gases originating from old refrigerators costs will be incurred under Regulation on Waste Electric						EUR (56,000 TL).		

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	and Electronic Equipment (WEEE).								
Renewable energy regulation	Utilization of domestic renewable energy sources has vital importance for Turkey to reduce its dependence on foreign energy supplies and prevent the increase in greenhouse gas emission. That is why governmental authorities have been working on lots of regulations about renewable energy investments. Regardless of capacity, if a power plant generating electricity from renewable energy resources is isolated from the transmission and distribution grid, it will be exempt from the requirement of	Reduction in capital availability	1 to 3 years	Direct	About as likely as not	Medium	For last 10 years, electricity unit price has increased %7 per year. It will possibly increase during further years. If unit price increases more than expected, not to invest in renewable energy will affect our operational costs. If not, investing to renewable energy will reduce our capital availability. For each MW of peak renewable energy investments result into 3 Million TL reduction in capital availability. For	We are working on possible renewable energy investments with purchasing, finance and strategic planning departments and following up the investments by other investors. We are trying to estimate possible positive/negative impacts of renewable energy production.	There is no cost to work on the possible renewable energy investments. We can only do an estimation to manage the risk.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	obtaining a production licence. For wind energy possible facility is our factory located in Çerkezköy and for solar energy possible facility is our factory in Eskişehir. For wind energy investments the most important financial risks are; stability of wind, land costs, unpredicted maintenance costs. In Cerkezköy region, mean wind speed is really close to the critical operating speed for sustainable energy production and 0.5 m/sec wind speed reduction will result into low energy production. Area needed for base construction for wind turbines is not too much. But the important issue is						whole Arçelik plants in Turkey 145 MW peak and nearly 435 Million TL investment needed.		

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	the area needed for security. And the area needed for secure operation is a risk for possible future investment on land. Maintenance costs for wind turbine are difficult to predict. For solar energy investments the most important financial risks are; high prices, land costs, re-installation costs. Because of its high technology, the prices of PV panel and other constructional parts are really high. According to our evaluation, payback time for such kind of investment is nearly 12-17 years. Such investment with higher payback time is a real financial risk for industry. Land cost is one of the								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	most important cost of PV projects. For industrial areas, to use such kind of valuable land for PV installation is too risky. It is possible to use this land for increasing production capacity. Another financial risk is re-installation cost. If you install PV project on a specific site and if you have to move your facility to another location because of re-installation costs, payback time of investment will increase up to %25. The technology of equipment is changing rapidly. There is a possibility that the technology and efficiency of PV and wind turbines will change. So, there is risk for								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	such kind of technological investments with higher payback time.								

CC5.1b

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

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
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	Increased operational cost	1 to 3 years	Direct	Very likely	Medium	We have an investment in Thailand. The estimated investment cost for Thailand project is approx. 100 million USD.	Changes and mean temperature and related risks/emergencies are considered in new investments including facility location choices. Production of all of the products only in one location is very precarious. Because when a natural disaster is happened in this location, it is impossible to continue manufacturing. To manage this risk, our products are	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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 coastal 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							manufactured more than one location, South Africa, Russia, Romania, China etc.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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. Floods that may happen due to sudden temperature rises and decreases constitute risk for our plants in particular which								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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.								
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	Increased operational cost	>6 years	Direct	Likely	Medium		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. To keep up with this risk we have also carried out some recovering projects: Thanks to the reduction of product weight studies: • 60 cm solo type dishwasher weight decreased to 35 kg from 52 kg • Washing machine motor weight decreased to 5.9 kg from 6.25 kg •	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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 also for 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							Dishwasher motor weight decreased to 1.9 kg from 2.1 kg • Mini type compressor weight decreased to 6.5 kg from 7.4 kg • Midi type compressor weight decreased to 9.1 kg from 10.8 kg • Static function 60 cm built-in oven weight decreased to 29 kg from 36.5 kg • 32" LCD TV weight decreased to 8 kg (with LED lighting) from 25.1kg.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	difficult. Some of indispensable natural resources for white goods and TV are water, energy and basic minerals like iron, copper, aluminium. Significant quantities of decreases in such resources will directly and severely affect our sector. This would affect product R&D activities and innovation significantly.								

CC5.1c

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

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Uncertainty in market signals	We have 2 cogeneration systems with 6.3 MW capacities of each in Eskişehir and	Reduction in capital availability	3 to 6 years	Direct	Likely	Medium	If we invest cogeneration systems and if natural gas price increases than	We are working on possible cogeneration investments with purchasing,	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Çayırova plants. They have been working for 16 years with total efficiency of 78.2%. Their electricity efficiency is nearly 40.3% and heat efficiency is nearly 37.9%. We use natural gas and fuel-oil as well for primary fuels. We use the produced electricity and heat in our factories. Because the capacities are lower than the requirements. That's why we purchase electricity from the grid too. It is possible to invest on new more efficient cogeneration systems or modernisation. But for both of the case the risk is natural gas price and supply. Price of natural gas has been increased too much in previous years especially according to increase on exchange rate of						expected, it is possible to stop energy production and we have to purchase electricity.This case results into at least 11 M TL cost. The possible financial impact can be increased up to 32 M TL for higher capacity. For the modernisation investment, 5.5 M TL is needed to increase total efficiency from 78% to 82%.For higher capacity investment,we have to pay 16 M TL to increase total efficiency 78% to 81%.	finance and strategic planning departments We are trying to estimate possible natural gas unit price for further years.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	$/TL. And because Turkey is energy dependent on natural gas, supply is affected from political situation and it seems there is a risk for investing on natural gas based power plants.								
Reputation	It is possible to reduce carbon emissions by using renewable energy in two ways. You can produce or you can buy from a renewable energy supplier. In Turkey, there are some energy companies that are producing electricity by renewable sources like hydro, solar and wind. As Arcelik, while we are signing contract of electricity purchasing, we are asking to be sure that energy companies uses renewable sources. Starting from 2012 June, we have been using electricity from	Increased operational cost	Up to 1 year	Direct	Likely	Medium	Nearly 1.9 Million TL extra cost for each year in case of 0.01 TL/kwh higher electricity cost.	We are following up unit price of national providers, private companies and other alternatives and each year we use bidding method to get best prices. But our first priority is being from renewable energy sources.	Nearly 1.9 Million TL extra cost for each year in case of 0.01 TL/kwh higher electricity cost.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	renew able energy sources (In headquarter). We bought half of electricity consumption of 2012 from renew able energy company (1,431,156 kWh) We plan to generalize this to all of our domestic plants in coming years. If w e can purchase all of our electricity from a renew able source we can reduce our emissions by nearly 100,900 tonnes of CO2e. The risk of such kind of method is financial. If w e can purchase electricity from non-renew able energy plants w ith just 0.01 TL cheaper than renew able energy plants, it w ill cause 1.9 Million TL extra cost for electricity.								

CC5.1d

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

CC5.1e

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

CC5.1f

Please explain why you do not consider your company to be exposed to inherent 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

Page: CC6. Climate Change Opportunities

CC6.1

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

Opportunities driven by changes in regulation
Opportunities driven by changes in physical climate parameters

Opportunities driven by changes in other climate-related developments

CC6.1a

Please describe your inherent opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Cap and trade schemes	Arçelik has started operations for voluntary carbon trade to quickly adapt to system the moment obligatory trade commences and to turn it into opportunity after post 2012 period. Since Green Climate Fund steps, we constantly compile information about future carbon markets. We plan advanced	Wider social benefits	>6 years	Direct	Likely	Medium-high	In voluntary carbon market, unit price of carbon is assumed as approx. 0.40 - 1 EUR for VCS. The estimated average emission reductions resulting from this project is estimated around 1.8 million tCO2e, approx. 720 K – 1.8 M EUR (approx. 2 million – 5 million TL)	To manage this opportunity we have developed a carbon trade project called "Arçelik Energy Efficient Refrigerators Grouped Project".	Total management cost of this method is around 200,000 TL.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	level operations so that our Company will benefit to a maximum level from carbon trade both domestic and abroad. As a start, we have developed a voluntary Carbon Trade Project, “Arçelik Energy Efficient Refrigerators Grouped Project”. The project aim is, manufacturing of the energy efficient refrigerators by applying advanced technologies and selling them to Turkish customers. The Project								

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	crediting period is 10 years (2012-2022) and the estimated average emission reductions resulting from this project is estimated around 1.8 million tCO2e, totally (The project is currently at the approval stage by the related authorities, the estimation was based on the assumptions made in line with the CDM methodology)								
Product efficiency regulations and standards	The EU regulation for ecodesign requirements for refrigerating appliances were	New products/business services	Up to 1 year	Direct	Very likely	Medium-high	In 2005, the Company's consolidated sales revenue was 3.1 billion EUR (approx 4.96 billion TL), while the	Overall energy efficiency of Arçelik refrigerators sold in Turkey and EU are classified as "A+" by end 2012.It is projected to reach A++ efficiency level	The cost of R&D studies for energy efficient and environmental friendly products is 35.8 TL

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	published in 2009. It introduces a gradual ban of less efficient products in the market. Placing refrigerators of energy class B and lower on the market are banned as of 1 July 2010. It is ruled that energy class of A cannot be put on the market from July 2012 on. In July 2014, minimum allowable energy efficiency index will be set to 42 which is 44 now. In Turkey, the same regulations are transposed into national						international sales share was 40%of total sales revenue (1.2 billion EUR ~ 1.92 billion TL). In 2013, the consolidated net sales turnover reached 11.098 billion TL, and international sales comprised 58% of consolidated sales. One of the main reason of the increase in international sales share is our investment on environmentally friendly R&D activities and producing competitive energy efficient products.	by 2017.Investment in improvement of high efficiency components is a key element to maintain sustainable energy efficiency increase.Compressor is found to be one of the key component in refrigeration industry.R&D activities on variable speed compressors have reached to an advance level of technological step.Variable speed compressors enables the refrigerator consume less energy compared to conventional on-off compressors.In addition,continuous R&D activities have yielded efficient fan blade design that are being used in today's products.Another tool to reach high energy-efficient refrigerating appliance is	million in 2013.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	law in order to be harmonized with the EU laws. As a result, “A” energy class products cannot be put on the market as of today both in Turkey and EU. EU Commission has just completed first analysis of current situation and comparison with technological development of the industry. The need to revise current ecodesign regulation has become apparent. Ongoing preparatory studies reveals the fact that new							considered insulation.The better the insulation,the higher the energy efficiency.Vacuum insulation panels(VIP) provides excellent insulation compared to PU insulation.Besides Arçelik endeavors to create a new level of VIPs with very low thermal conductivity that leads to design high energy efficiency.Strong background in cooling design is the powerful tool in hands of Arçelik to reach energy efficiency targets of 2017.Arçelik Long Term Plan and Product Roadmap systematic constitutes our main method.At least once in a year,energy and environmental-friendly product range and portfolio definition is made with top management,throuh	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	ecodesign measures are on the way to increase the minimum energy efficiency limit by 2018.							this strong method we have towards domestic target markets environmental-friendly products.	

CC6.1b

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

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in mean (average) temperature	To transform weather temperature changes into opportunity, we adopted to go beyond the legal legislations and standards requirements, regarding efficiency. In this context, we produce our products with a standard production rules, in all countries. In the new investments we made abroad, we take our product and production technologies to that	Wider social benefits	Up to 1 year	Direct	Likely	Medium-high		To manage this opportunity we have developed a carbon trade project called "Arçelik Energy Efficient Refrigerators Grouped Project" in Turkey and we are also planning to develop a Project on carbon trade in South Africa.	Total management cost of this method is around 200,000 TL.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	country and ensure that country also become aware about energy efficient products, therefore we seize the opportunity to contribute to reduction of country GHG 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 upcoming period we are going to do a project in South Africa, we commenced basic infrastructure operations to enter into voluntary carbon trade. We have								

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	developed the “Arçelik Energy Efficient Refrigerators Grouped Project”. The project aim is, manufacturing of the energy efficient refrigerators by applying advanced technologies and selling them to Turkish customers. Since Green Climate Fund steps, we constantly compile information about future carbon markets. We plan advanced level operations so that Arçelik will benefit to a maximum level from carbon trade both at home and abroad. We aware that our environmental-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 our stakeholders. According to a study conducted by Harvard Business School by reviewing 180 companies, long term market share and share certificate value of								

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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.								

CC6.1c

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

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Changing consumer behaviour	When last 15 years are considered, it is seen that effect of environmental-friendly and energy efficient products on	Wider social benefits	1 to 3 years	Direct	Very likely	Medium-high	In the "Market Transformation of Energy Efficient Products" project, which covers 2010-2015 period, Arçelik has committed to	During the environment related weeks, such as Energy Efficiency Week, Environment Protection Week, Water Day etc., discount campaign is	In the "Market Transformation of Energy Efficient Products" project, which covers 2010-2015 period,

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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. This is an opportunity for the sector.						support with 600,000 USD (approx. 900,000 TL) in-kind contribution.	done for the energy efficient and environmental-friendly products to customer preference. 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. In addition to this we launched the "Market Transformation of Energy Efficient Products" project jointly with United Nations Development Program (UNDP), United Nations Environment Program (UNEP), Global Environment Fund (GEF), Turkish White Good Manufacturers' Association (TÜRKBESD), Turkish Ministry of Industry and	Arçelik has committed to support with 600,000 USD (approx. 900,000 TL) in-kind contribution.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								Commerce and General Directorate of Electrical Power Resources Survey and Development Administration. In December 2010, we carried on with this project, which will last to the end of 2015. The goal of the project is to reduce the domestic consumption of electric energy, and therefore reduce the related greenhouse gas emissions, by speeding up the transformation to electrical home appliances consuming less energy	
Reputation	We aware that our environmental-friendly products and production activities are opportunities to increase our brand value and we perform our activities in accordance with	Wider social benefits	Up to 1 year	Direct	Likely	Medium-high	In 2005, the Company's consolidated sales revenue was 3.1 billion EUR (approx 4.96 billion TL), while the international sales share was 40%of total sales revenue (1.2 billion EUR ~ 1.92 billion TL). In	Environmental production and environment friendly products are the main elements of Arçelik's sustainability management. Arçelik manages sustainability within its activities via Sustainability	The cost of R&D studies for energy efficient and environmental friendly products is 35.8 TL million in 2013.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	this opportunity. We share such activities through our sustainability report with 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						2013, the consolidated net sales turnover reached 11.098 billion TL, and international sales comprised 58% of consolidated sales. One of the main reason of the increase in international sales share is our investment on environmentally friendly R&D activities and producing competitive energy efficient products.	Committee.	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	opportunity financially.								

CC6.1d

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

CC6.1e

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

CC6.1f

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

Further Information

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

Page: CC7. Emissions Methodology

CC7.1

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

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Fri 01 Jan 2010 - Fri 31 Dec 2010	77038
Scope 2	Fri 01 Jan 2010 - Fri 31 Dec 2010	80687

CC7.2

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

Please select the published methodologies that you use
ISO 14064-1

CC7.2a

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

CC7.3

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

Gas	Reference
CO2	IPCC Third Assessment Report (TAR - 100 year)
CH4	IPCC Third Assessment Report (TAR - 100 year)
SF6	Other: TS ISO 14064-1 Annex-C GWP potentials for GHG emissions Table
Other: For other Coolants; (gas mixtures included)	IPCC Third Assessment Report (TAR - 100 year)

CC7.4

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

Fuel/Material/Energy	Emission Factor	Unit	Reference
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

Fuel/Material/Energy	Emission Factor	Unit	Reference
			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: 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
Electricity	0.523	Other: kg CO2e/kwh	An average emission factor was calculated for Turkey grid circuit (grid emission factor). For electricity emission factors, TEİAŞ(Turkish Electricity Distribution 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, Table 3.3.1 Default Emission Factors For Off-Road Mobile Sources And Machinery
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

Fuel/Material/Energy	Emission Factor	Unit	Reference
			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

Page: CC8. Emissions Data - (1 Jan 2013 - 31 Dec 2013)

CC8.1

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

Financial control

CC8.2

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

66685

CC8.3

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

74509

CC8.4

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

Yes

CC8.4a

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

Source	Relevance of Scope 1 emissions from this source	Relevance of Scope 2 emissions excluded from this source	Explain why the source is excluded
Personnel services, food and beverage vending machines, soft drinks cabinets, water dispensers, product logistics activities, emissions from equipment that doesn't belong to ARÇELİK in the field of bank branches campus, emissions from waste recycling and disposal	Emissions are not relevant	Emissions are not relevant	Since these are not under financial and administrative control of Arçelik, they are excluded.
Cafeteria, canteen services, bank branches and cleaning contractor services	Emissions are not relevant	Emissions are not relevant	They are subcontractor services and they are excluded since they are out of our financial and administrative control.
CO2 and CH4 emission emitted by the waste water	Emissions	No emissions	During treatment at wastewater treatment plants, greenhouse gas

Source	Relevance of Scope 1 emissions from this source	Relevance of Scope 2 emissions excluded from this source	Explain why the source is excluded
treatment plant	are not relevant	from this source	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.
Some chemical groups used (adhesives, aerosols, oils,paraffin waxes, solvents, solvent based paints, chemicals used for test purposes, polyurethane (PU), EPS etc.) are at a negligible level	Emissions are not relevant	No emissions from this source	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.
Greenhouse gas from bottled-gas is at a negligible level	Emissions are not relevant	No emissions from this source	In all campuses except Çayırova campus, since the greenhouse gas from bottled-gas consumed has very low impact on total greenhouse gas, it has been neglected. (The consumption of Çayırova Campus has been included in greenhouse gas calculations due to being higher than other campuses).
Gases used for controlling gas and smoke detectors	Emissions are not relevant	No emissions from this source	Greenhouse gases from gases used for the Gas and smoke detector control (avg. 1lt.) has been neglected due to having a very low effect in total greenhouse gas.
Greenhouse gas emission from punto welding oil combustion	Emissions are not relevant	No emissions from this source	In the plants, the total greenhouse gas emission from punto welding oil combustion has been neglected due to having a very low effect in Arçelik total greenhouse gas emission.

CC8.5

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

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	More than 2% but less than or equal to 5%	Data Gaps Assumptions Extrapolation Metering/ Measurement Constraints Data Management	Arising from fuel consumptions; - The uncertainty values on relevant counters, - In the scope of IPCC 2006 Tier 1 approach, the standard deviation has been calculated by using the top, bottom, and default values based on the standard value of the emission factors for fuels. - Any possible incorrect entries and possible deviations from incorrect data entry regarding to consumption have been taken into account. Caused by refrigerant leaks; - Deviation values for weighing devices , - Any possible incorrect entries and possible deviations from incorrect data entry regarding to cooling device inventories and refrigerant leaks have been taken into account. Caused by personnel with fuel right; -Maximum uncertainty values defined in measurement tools standard for OPET's flow meters, - In the scope of IPCC 2006 Tier 1 approach, the standard deviation has been calculated by using the top, bottom, and default values based on the standard value of the emission factors given for fuels.
Scope 2	More than 2% but less than or equal to 5%	Data Gaps Assumptions Extrapolation Metering/ Measurement Constraints Data Management	-Deviation values of the relevant counters -The standard deviation of the fuels used in electricity generation specified in TEİAŞ 2013 reports has been calculated in the scope of IPCC 2006 Tier 1 approach by using the top, bottom, and default values based on the standard value of the emission factors -The deviations that may occur in the calorific values of the fuels used for electricity generation specified in TEİAŞ reports have been taken into account.

CC8.6

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

Third party verification or assurance complete

CC8.6a

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

Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Reasonable assurance	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC8.6a/Arcelik_ISO_14064-1_GHG_Verification_Certificate_Production.pdf	Arçelik Carbon Footprint Verification Standard Page:1-3	ISO14064-3	100

CC8.6b

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

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

CC8.7

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

Third party verification or assurance complete

CC8.7a

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

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
Reasonable assurance	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC8.7a/Arcelik_ISO_14064-1_GHG_Verification_Certificate_Production.pdf	Arçelik Carbon Footprint Verification Standard Page:1-3	ISO14064-3	100

CC8.8

Please identify if any data points have been verified as part of the third party verification work undertaken, other than the verification of emissions figures reported in CC8.6, CC8.7 and CC14.2

Additional data points verified	Comment
Change in Scope 1 emissions against a base year (not target related)	Besides, GHG procedures, operational instructions “on-site” implementations GHG emissions, uncertainty and materiality calculations, energy efficiency projects’ GHG performances are also submitted to Verification Body as "Arçelik A.Ş. Green House Gas Emissions Report (2013)". In this report changes in Scope 1&2 emissions against the base year have been verified.
Change in Scope 2 emissions against a base year (not target related)	Besides, GHG procedures, operational instructions “on-site” implementations GHG emissions, uncertainty and materiality calculations, energy efficiency projects’ GHG performances are also submitted to Verification Body as "Arçelik A.Ş. Green House Gas Emissions Report (2013)". In this report changes in Scope 1&2 emissions against the base year have been verified.

CC8.9

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

No

CC8.9a

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

Further Information

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

CC9.1

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

Yes

CC9.1a

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

Country/Region	Scope 1 metric tonnes CO2e
Romania	9515
Russia	7990
China	544
South Africa	2208

CC9.2

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

By facility

CC9.2a

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

Business division	Scope 1 emissions (metric tonnes CO2e)

CC9.2b

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

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
Arctic (RO)	9515	44.717633	25.318465
Beko LLC (RU)	7990	55.80186	37.798119
Beko China	544	39.859155	116.591034
Jacobs (SA)	1784	-29.923245	30.983171
Ezakheni (SA)	414	-28.637490	29.862127
East London (SA)	10	-32.984058	27.832307

CC9.2c

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

GHG type	Scope 1 emissions (metric tonnes CO2e)

CC9.2d

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

Activity	Scope 1 emissions (metric tonnes CO2e)

CC9.2e

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

Legal structure	Scope 1 emissions (metric tonnes CO2e)

Further Information

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

CC10.1

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

Yes

CC10.1a

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

Country/Region	Scope 2 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted for in CC8.3 (MWh)
Romania	17523	33373	0
Russia	14052	26762	0
China	2609	4969	0
South Africa	15191	28932	0

CC10.2

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

By facility

CC10.2a

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

Business division	Scope 2 emissions (metric tonnes CO2e)

CC10.2b

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

Facility	Scope 2 emissions (metric tonnes CO2e)
Arctic (RO)	17523
Beko LLC (RU)	14052
Beko China	2609
Jacobs (SA)	8888
Ezakheni (SA)	4800
East London (SA)	1503

CC10.2c

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

Activity	Scope 2 emissions (metric tonnes CO2e)

CC10.2d

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

Legal structure	Scope 2 emissions (metric tonnes CO2e)

Further Information

Page: CC11. Energy

CC11.1

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

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

CC11.2

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

Energy type	MWh
Fuel	314299
Electricity	196795
Heat	0
Steam	0
Cooling	0

CC11.3

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

Fuels	MWh
Diesel/Gas oil	5743
Distillate fuel oil No 4	7577
Liquefied petroleum gas (LPG)	10880
Natural gas	286098
Motor gasoline	4002

CC11.4

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

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comment
Grid connected low carbon electricity generation owned by company, no instruments created	77625	The electricity consumed at Arçelik is the electricity supplied from outside as well as the electricity produced in cogeneration. Electricity producers cannot give any information about the emission factor of electricity they supply. For this reason Arçelik's Environmental Coordination WG calculated a general emission factor for Turkish Electricity Grid. The calculation based on TEIAS (Turkish Electricity Transmission Company) data and IPCC emission factors. The calculation is verified by an independent GHG verification body. According to that calculation, emission factor for grid electricity of Turkey in 2013 is 0.523 kgCO2e/kwh. Arçelik produces its own energy by trigeneration units in two of its plants (Both of them have 6.3 MW Wartsila Engines). In these units, natural gas and fuel-oil are used for electricity and heat generation. Heat is used for heating purposes and for cooling purposes (by absorption units). The emission factor of electricity produced in trigeneration units for 2013 is calculated as 0.496 kgCO2e/kwh (Using IPCC emission factors). Produced electricity by these units have lower emission factor than grid emission factor. Arçelik produced 22733 Mwh in 2013 by using its trigeneration

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comment
		units. This means that 659 tonnes of CO2e have been saved in 2013. In addition to this, Arçelik Headquarter, Beylikdüzü Electronics Plant and Bolu Cooking Appliances Plants have purchased some amount of their electricity from renewable energy suppliers, in 2013. Thus 28822 ton eCO2 have been reduced. There are 3 time zones for electricity prices. This is a result of unbalanced usage of electricity by consumers. To tolerate unbalancing, electricity producers have to invest on higher capacity electricity stations. This results into inefficiency. Generation plants of Arçelik produce electricity in a harmony with electricity producers. We produce electricity where demand of all consumers is high and use grid energy where demand of all consumers is low. So we help to balance the consumption

Further Information

Page: CC12. Emissions Performance

CC12.1

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

Decreased

CC12.1a

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

Reason	Emissions value (percentage)	Direction of change	Comment
Emissions reduction activities	21.2	Decrease	The reason of the reduction in the greenhouse gas emissions is mainly from the use of the electricity generated by renewable energy resources and the energy efficiency projects completed during the reporting period.
Divestment			
Acquisitions			
Mergers			
Change in output			
Change in methodology			
Change in boundary			
Change in physical operating conditions			
Unidentified			
Other			

CC12.2

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

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.000012722	metric tonnes CO2e	unit total revenue	25.1	Decrease	Greenhouse gas emissions per turnover decreased by 25.1%,in 2013. Major reasons of this decrease are the use of the electricity generated by renewable energy resources and energy efficiency projects performed at Plants.

CC12.3

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

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
6.035995212	metric tonnes CO2e	FTE employee	24.1	Decrease	Despite the fact that number of employees increased in 2013 compared to 2012, greenhouse gas emission per employee decreased by 24.1%. Major reasons of this: the use of the electricity generated by renewable energy resources and energy efficiency projects performed at Plants.

CC12.4

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

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.005107753	metric tonnes CO2e	unit of production	21.2	Decrease	Greenhouse gas emissions per unit of production decreased 21.2%. Major reasons of this decrease are energy consumption reduction operations performed at Plants and energy efficiency projects and renewable energy supply.

Further Information

Page: CC13. Emissions Trading

CC13.1

Do you participate in any emissions trading schemes?

Yes

CC13.1a

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

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership
Other: Voluntary Emission Reduction Scheme	Sun 01 Jan 2012 - Sat 31 Dec 2022	0	0	0	Facilities we own and operate

CC13.1b

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 the future period. Since Green Climate Fund steps 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.
As a start in line with this strategy, we have developed a “Arçelik Energy Efficient Refrigerators Grouped Project”. It is a voluntary emission reduction Project, because there is not any regulatory emission trading scheme in Turkey and so that there are no allowances allocated or purchased in scope of our Project.
The project activity is manufacturing enhanced energy efficient refrigerators by applying advanced technologies and selling them to Turkish customers. The Project crediting period is 10 years (2012-2022) and the estimated average emission reductions resulting from this project is estimated around 1.8 million tCO2e, totally (The project is currently at the approval stage by the related authorities, the estimation was based on the assumptions made in line with the CDM methodology). The

validation process and registration phase have been completed (Registry: APX; Project ID:1117). Now the verification is under process.

CC13.2

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

No

CC13.2a

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

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits cancelled	Purpose, e.g. compliance

Further Information

Page: CC14. Scope 3 Emissions

CC14.1

Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Relevant, calculated	576707	2006 IPPC Guidelines for National Greenhouse Gas Inventories	44.00%	Scope 1 (stationary combustion (natural gas, LPG, diesel, fuel oil, purchased steam, LNG) and mobile combustion (fuel oil, diesel, LPG)) and Scope 2 (electricity) emissions of our suppliers' production activities have been calculated. In this calculation 80% of total spend (195 suppliers) is considered. 44% of the suppliers have answered our questionnaire about GHG and these information are considered to calculate GHG emissions of suppliers.
Capital goods	Not relevant, explanation provided				The capital goods are not relevant for Arçelik. Because our owned capital goods' emissions are estimated to be at negligible quantity of our total emissions in 2013.
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Not relevant, explanation provided				All Scope 1 and Scope 2 emissions of our activities are calculated. There are no emissions out of Scope 1 and Scope 2 such as heat, steam etc.
Upstream transportation and distribution	Relevant, not yet calculated				
Waste generated in operations	Not relevant, explanation provided				Waste disposal and recycling operations are not implemented in Arçelik plants. Disposal and recycling companies do not under control of Arçelik.
Business travel	Relevant, not yet calculated				Our employee's vehicle emissions are calculated in our Scope 1 emissions which has been already audited and verified by an independent body.
Employee commuting	Relevant, not yet calculated				
Upstream leased assets	Not relevant, explanation				We have no leased assets for storing supplied materials from suppliers.

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
	provided				
Downstream transportation and distribution	Relevant, calculated	47995	EPA Climate Leaders GHG Inventory Protocol Core Module Guidance: Optional Emissions from Commuting, Business Travel and Product Transport. The emission factors are taken from Table 5: Emission Factors for On-Road Vehicle Product Transport (vehicle-mile).	100.00%	The sources of greenhouse gas emissions from downstream transportation and distribution are road, off-road, air, railways and water-borne navigation activities. The GHG emissions emitted by our transportation activities in Turkey has been calculated and verified by an independent body in accordance with ISO 14064-1 and ISO 14064-3 in 2013. The calculation methodology is "EPA Climate Leaders GHG Inventory Protocol Core Module Guidance: Optional Emissions from Commuting, Business Travel and Product Transport".
Processing of sold products	Not relevant, explanation provided				We produce and sell final products. Because of this reason processing of sold products is not relevant.
Use of sold products	Relevant, not yet calculated				
End of life treatment of sold products	Not relevant, explanation provided				We have established and constructed WEEE plants in two locations (Eskişehir and Bolu) for our end of life products. These plants' GHG emissions are in scope of Arçelik's Scope1&2 GHG emissions inventory.
Downstream leased assets	Relevant, not yet calculated				
Franchises	Not relevant, explanation provided				Arçelik has no franchising activities.
Investments	Not relevant, explanation provided				Arçelik's new investment is Thailand factory. Since Arçelik's new investment's GHG emissions will be accounted in Arçelik's Scope 1&2 emissions, the GHG emissions of investments are not relevant for

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
					Scope 3 emissions.
Other (upstream)					
Other (downstream)					

CC14.2

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

Third party verification or assurance complete

CC14.2a

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

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of Scope 3 emissions verified (%)
Limited assurance	https://www.cdp.net/sites/2015/15/21115/Climate Change 2015/Shared Documents/Attachments/CC14.2a/Arcelik_ISO_14064-	Verification Opinion Statement Page 1-3	ISO14064-3	100

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of Scope 3 emissions verified (%)
	1_GHG_Verification_Certificate_Logistics.pdf			

CC14.3

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

Yes

CC14.3a

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

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Downstream transportation and distribution	Change in boundary	54.8	Increase	In 2013 we have changed our calculation methodology and we have expanded our boundaries while the third- party verification process realized. That is why our Scope 3 GHG emissions are increased compared to previous year.

CC14.4

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

Yes, our suppliers

CC14.4a

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

In line with its "Respects the Globe, Respected Globally" vision, Arçelik manages its environmental impacts systematically in order to fulfil the requirements to protect the ecological balance. “Product Life Cycle Assessment” is the key element of Arçelik’s Environmental Compliance Management practices.
Arçelik reduces the environmental impacts of all the processes from production of raw material to disposal of product, complies with all the environmental law and regulations during the life cycle of product and commits this approach with its Environmental Policy.
As a step of life cycle assessment, supply chain is an important tool to complete the cycle.
In this respect, we have started “Arçelik Supplier Footprint Project”.
In this project we have prioritized our suppliers according to the proportion of our total spend they represent. 80% of Arçelik’s total spend (195 suppliers) is considered in our engagement.
Our aim is to calculate our suppliers' carbon footprint according to IPCC Guideline.
For getting information from suppliers, an “Arçelik Supplier Footprint Project Questionnaire” has been prepared and sent. 44% of the suppliers have answered our questionnaire about GHG and these information are considered to calculate GHG emissions of suppliers.
Scope 1 (stationary combustion (natural gas, LPG, diesel, fuel oil, purchased steam, LNG) and mobile combustion (fuel oil, diesel, LPG)) and Scope 2 (electricity) emissions of our suppliers’ production activities of our suppliers have been calculated.
Our success measures are; to continue collecting the data from our related suppliers annually and to increase the number of responded suppliers (KPI: responded supplier quantity/total Supplier quantity in scope).

CC14.4b

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

Number of suppliers	% of total spend	Comment
195	80%	44% of the suppliers have answered our questionnaire.

CC14.4c

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

How you make use of the data	Please give details
Identifying GHG sources to prioritize for reduction actions	"Product Life Cycle Assessment" is the key element of Arçelik's Environmental Compliance Management practices. Arçelik reduces the environmental impacts of all the processes from production of raw material to disposal of product, complies with all the environmental law and regulations during the life cycle of product and commits this approach with its Environmental Policy. Realisation of Arçelik A.Ş.'s environmental approach can only be achieved by including all the collaborators in the supply chain within this approach. In this respect we have started "Arçelik Supplier Footprint Project". The data that we provided will be used for the possible improvements on supply chain carbon footprint.

CC14.4d

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

Further Information

Module: Sign Off

Page: CC15. Sign Off

CC15.1

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

Name	Job title	Corresponding job category
Polat Şen	Chief Financial Officer (CFO) and Head of Arçelik Sustainability Committee	Chief Financial Officer (CFO)

Further Information

CDP