

**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 130 countries around the world with its 30,000 employees.

Arçelik has 18 production plants in 7 countries (Turkey, Russia, Romania, China, South Africa, Thailand, Pakistan), sales and marketing companies all over the world with its 11 own brands (Arçelik, Beko, Grundig, Altus, Blomberg, ElektraBregenz, Arctic, Leisure, Flavel, Defy, Dawlance).

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 and UN Sustainable Development Goals, 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 2010, Arçelik established GHG Management and Reporting System based on continuously improvement principle.

Arçelik calculated the GHG emissions sourced by its facilities in accordance with ISO 14064-1 GHG Standard.

Arçelik's GHG values (Scope 1 and 2) have been audited and verified by an independent body in "100% verification" and "reasonable assurance" level since 2010.

Since 2013 Arçelik's domestic logistics' GHG emissions (Scope 3) have been calculated and verified by an independent body at "limited assurance" level. Arçelik's Scope 3 emissions boundaries have been widened to include domestic, export and import product logistic activities.

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 "The 20C Challenge Communiqué". Arçelik former CEO represented Turkey as the President of Climate Change Leaders in the World Climate Summit held in Durban and Doha. Arçelik participated in work groups at the Ministry of Environment and Urbanization (MEU) ahead of the World Climate Conference realized in Lima in 2014 and Paris COP21 in 2015. Arçelik represented Turkey in two different panel sessions in COP21. Arçelik CCO for Global Sales and Arçelik Sustainability and Corporate Affairs Director attended as a speaker. Arçelik has attended and represented Turkey as an only Turkish industrial

company in COP 22 at both events organized by MEU and UNEP.

Arçelik CEO attended the "Dialogue for Climate Action" event in Vienna, which was launched by the World Bank in order to increase dialogue on this matter.

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. With these studies Arçelik always achieved to be the "world's mosts and firsts".

E.g A+++ No Frost Combi Refrigerator; A+ Energy Class 90 cm Hood; A+++ -30% Energy Efficient No Frost Combi Refrigerator; 55" UHD A+ Smart TV; A++ Energy Class Built-in Oven; A+++ -70% Energy Efficient Washing Machine; A+++ -10% Energy Efficient Dryer. The other example of the environmentally friendly product is Arçelik Solar Refrigerator developed for rural regions of South Africa.

10 of Arçelik's production plants achieved a "Platinum" certificate for energy efficiency, Arçelik is the first in its sector.

Arçelik also implements and achieves awards on the TPM and Six Sigma. 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.)

Arçelik received 'AAA' rating, the highest in the MSCI Global Sustainability Index Series. Arçelik is among the companies listed in the BIST SI. Arçelik shares its sustainability approach with its Sustainability Reports. Additionally Arçelik was honoured to be listed in "CDP Global A list" for the second time. Arçelik is the first Turkish industrial company entered in this list twice.

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## 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

Thu 01 Jan 2015 - Thu 31 Dec 2015

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## 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

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### 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

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### CC0.6

#### Modules

As part of the request for information on behalf of investors, companies in the electric utility sector, companies in the automobile and auto component manufacturing sector, companies in the oil and gas sector, companies in the information and communications technology sector (ICT) and companies in the food, beverage and tobacco sector (FBT) should complete supplementary questions in addition to the core questionnaire.

If you are in these sector groupings, the corresponding sector modules will not appear among the options of question CC0.6 but will automatically appear in the ORS navigation bar when you save this page. If you want to query your classification, please email [respond@cdp.net](mailto: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 in CC0.6.

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### Further Information

For further information please see Arçelik A.Ş. Sustainability Report 2015.

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### Attachments

## Module: Management

### Page: CC1. Governance

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#### 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

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#### 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 Council.

(ii) Arçelik Sustainability Council is comprised of the full executive board, including the COO (Chief Operations (Production&Technology) Officer), CFO, Assistant General Manager - Turkey Trade, Finance Director, Strategic Planning Director, Human Resources Director, Customer Services Director, Innovation Director, Corporate Communications Coordinator, Sustainability and Corporate Affairs Director.

The head of Sustainability Council is CFO and the General Secretariat of the council is Sustainability and Corporate Affairs Director. The Sustainability Council meets biannual.

Duties and responsibilities of the Sustainability Council 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, MSCI, 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, Sustainability Reporting WG.

These groups report to the Sustainability Council 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 Council.
- 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, MSCI, 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 to 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
			<p>Society Contributors". Projects nominated in this category are evaluated and concluded according to the 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&amp;D employees. R&amp;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.</p>
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 Managers	Monetary reward	Energy reduction target	Energy Reduction Ratio (thus carbon emissions reduction) KPI is the part of the Energy and Environment Managers' 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.
Other: Sustainability and Corporate Affairs	Monetary reward	Energy reduction target	Energy Reduction Ratio (thus carbon emissions reduction) KPI is the part of the Sustainability and Corporate Affairs Director's performance evaluation.

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
Director			

#### 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 130 countries. Arçelik has 18	> 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 Council evaluates corporate risks and opportunities related to climate change.Corporate climate change risks &opportunities

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
		production plants in 7 countries (Turkey, Russia, Romania, China, South Africa, Thailand and Pakistan). Arçelik's integrated risk management procedure covers all activities mentioned above.		are presented by the Sustainability Council 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 decision-making mechanism, the establishment of effective internal control systems. The 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 Council. Sustainability Council evaluates and prioritizes asset level corporate risks and opportunities. Company level risks and opportunities are identified by Sustainability Council 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 Council. 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 Council 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 site audits.

#### CC2.1c



### How do you prioritize the risks and opportunities identified?

In Arçelik, risk and opportunity identification, determination and prioritization methods have 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 Council.

According to Arçelik's risk and opportunity scoring methodology, the risks and opportunities are scored (1-5 points) considering financial, reputation, production, operational, 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 (R) and opportunity (O) points are scored by multiplying frequency (F) and impact point (I) for prioritization ( $R, O = F * I$ ).

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

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. one 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

GHG emissions (Scope 1&2) are being verified voluntarily by an independent body since 2010. Since 2013 Arçelik's product logistics' GHG emissions (Scope 3) have been calculated and verified by an independent body.

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#### CC2.1d

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

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

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#### CC2.2

Is climate change integrated into your business strategy?

Yes

## CC2.2a

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

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 Council (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 (e.g. WEEE, Circular Economy Package)

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; 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% saving target for energy consumption with energy efficiency projects. In 2015, 5217 tons of eCO<sub>2</sub> reduction has been achieved

- We switched to renewable energy (RE) usage

To provide our customers green products;

- We have spared TL 47 million to environmental-friendly R&D in 2015

- The annual average energy consumption per product was reduced by 0.3% for Cooking Appliances, by 2% for Washing Machines, by 0.8% for Dishwashers and by 6.6% for Tumble Dryers, compared to 2014

To conduct awareness;

- Arçelik signed the 2°C Challenge Communiqué

- Arçelik former CEO has been the President of the Turkish Corporate Leaders Group on CC, he represented Turkey in COP 17 and COP 18. Arçelik also participated in the COP 21, in the session organized by SE4All Initiative of UN and World Bank (WB), Arçelik CCO for Global Sales attended as a speaker. Arçelik Sustainability and Corporate Affairs Director attended as a speaker in the panel hosted by U4E initiative of UNEP and GEF. Arçelik has attended and represented Turkey as an only Turkish industrial company in COP 22 at both events organized by Ministry of Environment and Urbanization and UNEP.

- Arçelik CEO attended the "Dialogue for Climate Action" event in Vienna, which was launched by WB, within the frame of COP 21 goals. Arçelik signed 'The Principles for Dialogue on Climate Action' in scope of this event.

- Arçelik made commitments to «Paris Pledge for Action» of Cambridge University and "Responsible corporate engagement policy" of "Road to Paris 2015 Project".

- Arçelik made commitment to Science Based Target Initiative

•Arçelik was a partner of "Market Transformation Towards Energy Efficient Appliances" Project to increase awareness for energy efficiency at homes  
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

Proceeding in these strategies,we focus on;

•Enhance energy efficiency of the products beyond regulations with R&D studies

•To promote green product range

•To rise the range of purchasing electricity from RE sources

•To invest on solar energy by the end of 2020

•To provide energy efficiency by using our own productions "WAT" and "TEE" the energy efficient electric motors in our production plants

•Generalize clean and sustainable technology in production and green activities in processes

•To implement Arçelik's target "Net Zero Emission" by 2025

v.Arçelik keeps its strategic advantage over competitors, 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.

Arçelik is honoured by its success in CDP since 5 years by achieving Disclosure&Performance Leaderships.

Arçelik has represented Turkey in COP21 Paris and COP22 Marrakech.

Arçelik received 'AAA' rating, the highest in the MSCI. Arçelik is listed in the BIST SI.

vi.The most substantial business decisions that have been influenced by the climate change are;

•2025 climate change target is decreasing the emissions emitted by the production plants to "net zero emission"

•Increasing electricity supply generated through RE resources until 2020

•Ensuring continuity of the following certificates, ISO 14001&14064-1&50001 and extend the verification of GHG emissions abroad plants

•"Dynamic Routing" practice in logistics to reduce GHG.The steady increase in the use of maritime transport for exports has reached 82%

•R&D investment and expenses for developing green products

•Committing to "Responsible corporate engagement policy" in scope of "Road to Paris 2015 Project".

•Committing to Science Based Target Initiative

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 revised by the year 2016 and it is expected that new energy label will be in force by 2018.In the scenarios,high energy efficient products of today will be labelled with a reputation of less efficient.Arçelik plans to tackle energy efficiency challenges by designing high energy efficient products.

viii. The most substantial business decision in Arçelik is reducing GHG emissions by using RE.As Arcelik,starting from 2012, we have been using electricity produced from renewable energy sources.In 2012, Arçelik bought 1,431,156 kWh renewable energy.In 2013, 2014 and 2015 Arçelik bought 53,449,021.40 kwh, 158,314,563kwh and 179,904,936 kwh.

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## CC2.2b

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

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**CC2.2c**

**Does your company use an internal price on carbon?**

Yes

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**CC2.2d**

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

The Turkish Regulation on Monitoring of GHG emissions has been published in Turkey, first reporting obligation period for industry will start at 2017 for GHG emissions of 2015-2016. Arçelik has been calculating GHG emissions since 2006 and has been certified its GHG emissions according to ISO 14064-1 and IPCC which is verified by an independent body in a "reasonable assurance" level, since 2010. On the other hand, there is no legislation about carbon pricing which is published and implemented in Turkey. Although there is no an explicit carbon price available in Turkey, Arçelik sets emission reduction target and mitigate its emissions by energy efficiency projects, using of combined heat and power plants which are much more efficient way of producing energy, and increasing electricity supply generated through renewable energy resources.

For the next few years, Arçelik plans to implement an internal carbon fee. The model has not been set yet but different alternatives are being evaluated.

- 1- Each department of Arçelik will contribute a proportional amount to the carbon fund based on their emissions and determined carbon price.
- 2- Instead of proportional carbon fund, a central funding will be done

By using funds collected from the carbon fee, Arçelik will invest on carbon reduction projects such as energy efficiency projects, renewable energy projects and similar environmental initiatives. Besides creating a fund to support our net zero emission target, behavioural change at Arçelik will also be provided by carbon fee. Arçelik Sustainability Council is responsible for the coordination of Arçelik's internal carbon pricing.

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**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  
Trade associations  
Other

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**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	<p>1) Arçelik was a partner to Market Transformation of Energy Efficient Appliances (EVÜdP) in Turkey. EVÜdP Project started in 2010 and completed by the end of 2015. UNDP, GEF, T.R. Ministry of Science, Industry and Technology and T.R. Ministry of Energy and Natural Resources Directorate General of Renewable Energy and TÜRKBESD are also members of the Project. The aim was to enhance the strategy and infrastructure of market transformation towards more energy efficient household appliances thus reducing domestic electricity consumption and decreasing greenhouse gas emissions. 2) Arçelik participates and gives comment at the preliminary legislative phase of EU regulations on energy efficiency, energy labelling and circular economy package through the membership in CECED (European Domestic Equipment Manufacturers' Association). 3) Arçelik has a close relationship with relevant ministry directorates in Turkey and works together on the transposition of EU regulations into Turkish law. Arçelik has taken active part in the consultation phase of Turkish energy labelling and eco-design regulations for product groups that are published in parallel with EU versions.</p>	<p>1) As a result of EVÜdP project, EU ecodesign and energy labelling regulations for washing machine, dishwasher, oven, hob, hood, refrigerator, freezer, air conditioners, dryer and television implemented to Turkey in 2011 in parallel with EU laws. Under the EU harmonization efforts, non-energy efficient refrigerator, washing machine and dishwasher are banned in 2011. In this way products are placed on the market as of today are 2 times more efficient compared to 2010.. For implementing EU regulations to Turkish legislation; strong coordination between Science, Industry and Technology Ministry and the producers have been created. 2) In line with the opinions transmitted via CECED lobbied for a stable new energy labelling scheme to be included in the draft regulation. Finally, 10-year stability is guaranteed in the new framework regulation that is adopted in June 2017. It is expected that the new energy labelling regulation will be published Q3 2017 and it is foreseen that it will be entered into force by end of 2019 for refrigerators, washing machines, dishwashers, TVs and within 6 years after publication of framework regulation for other products. 3) For the purpose of dissemination of highly energy efficient products, "industry opinion" for incentives were provided to the Ministry of Finance. Arçelik give important contribution to these proposals. 4) In February 2017, extra tax (other than VAT) on durable goods was removed by the government. It will remain canceled until September 2017 as declared by the Ministry.</p>
Other: Climate Change	Support	<p>1) Arçelik took part in the working group which has been established by the Ministry of Environment and Urbanization&amp;UNIDO. The group is working on the technical specifications of determining, collecting and disposal of the Ozone Depletion Substances that are banned. 2) Arçelik became a member of Climate Platform of Turkey which is established as an independent non-profit initiative by REC Turkey and TÜSİAD. 3) Arçelik gave comments on the draft Regulation on Turkish Monitoring and Reporting, in 2012. 4) Arçelik made a joint study with Ministry of Energy and Natural Resources Directorate General of Energy Affairs to calculate regional diffraction</p>	<p>1) In Turkey, Arçelik was the first household appliances manufacturer to produce refrigerators without ozone-depleting CFC gases in 1995, much earlier than 2006, which was the deadline set for Turkey under the Montreal Protocol. Arçelik contributed the national regulation in this area and led to its sector for this transition. 2-5-6) Because of the responsibility being Climate Platform Leader of Turkey, Arçelik led its sector to combat climate change and shared the sector's view to the world in World Climate Summit. 3-4) Arçelik has given its comments to Ministry for</p>

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
		<p>of emission factor to reduce risk of reflection of such uncertainty to GHG emissions. 5) Arçelik 's former CEO represented Turkey as "President of Turkey Climate Change Group of Leaders " and presented opinions of private sector at "Towards Rio +20,Business Leaders Build Change" panel in COP17. Arçelik also actively participated in work groups at the Ministry of Environment and Urbanization ahead of the WCC realized in Lima in 2014.Arçelik participated in the COP21 held in Paris and COP22 held in Marrakech and represented Turkey. Arçelik CEO attended the "Dialogue for Climate Action" event in Vienna,which was launched by WB, within the frame of COP21 goals.Arçelik signed 'The Principles for Dialogue on Climate Action' in scope of this event. Arçelik made commitments to «Paris Pledge for Action» of Cambridge University and “Responsible corporate engagement policy” of “Road to Paris 2015 Project”. Arçelik also committed to “Science Based Targets” initiative.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 2oC Challenge Communiqué" prepared by Corporate Leaders Network (CLN).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 such as refrigerator, air conditioner etc. may contain ODS which have high 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 Urbanization to publish the “WEEE Regulation” in Turkey.</p>	<p>Turkish MRV Regulation on the importance of specifying Turkish grid emission factor and specifying the tiers. 8) Arçelik has cooperate and communicate with Ministry for creating and implementing of Turkish WEEE Regulation. Arçelik contributed to WEEE Management System in Turkey.</p>
Energy efficiency	Support	<p>1) Arçelik has a close relationship with all relevant ministry departments and work together on the preliminary phase of transposition of EU regulations into Turkish law. Arçelik took active part in the consultation phase of Turkish energy labelling and ecodesign directives, which are published in official journal, dated 22 June 2012. 2) 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. 3) Arçelik also has a close relationship with ministry of</p>	<p>The aim is to have Turkish ecodesign and energy labelling regulations entered into force simultaneously with EU. Arçelik continuously provide its comments to relevant governmental departments and participates in the meetings in the scope of public-private dialogues.</p>

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
		Science, Industry and Technology and work together on energy efficiency and energy regulations in industrial electric motors.	

**CC2.3b**

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

Yes

**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?
TUSIAD – Environment and Climate Change Working Group	Consistent	This working group is established for supporting the development of environmental policies in Turkey and the development of regulations in order to provide economic growth in parallel with the sustainability of natural resources. The Working Group evaluates the effective implementation of the regulations, conducts research, and presents suggestions to relevant institutions and organizations in this framework. The Working Group contributes to the work of the Climate Change and Air Management Coordination Board, which TÜSİAD is a member, and to the COPs. The group also contributes to the work of the Turkish Climate Platform established by REC Turkey and TÜSİAD in order to raise awareness in the business world in the field of climate change in Turkey.	Arçelik A.Ş. Sustainability and Corporate Affairs Director is the president of this working group.
TOBB – Consumer Durable Goods Council Environmental Sub-Working Group	Consistent	This working group is established for supporting durable goods sector to develop sectoral knowledge on environmental issues and the development of regulations in order to provide sectoral economic growth in parallel with the sustainability of natural resources. The sub-working group evaluates the effective implementation of the environmental regulations and presents suggestions to relevant institutions and	Arçelik A.Ş. Environment Manager is the president of this sub-working group.

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?
		organizations in this framework.	

### CC2.3d

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

### CC2.3e

Please provide details of the other engagement activities that you undertake

Arçelik 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 Integrated Water Management Project in Arçelik Cooking Appliances Plant-Istanbul Technical University, Environmental Engineering
- Water efficiency studies performed in Cooking Appliances Plant published in scientific papers (e.g. World Academy of Science Engineering and Technology, International Journal of Environmental and Ecological Engineering Vol:3, No:3, 2016, "Assessment of Water Reuse Potential in a Metal Finishing Factory", "Assessment of Waste Water Reuse Potential for an Enamel Coating Industry).
- Arçelik has become a partner to the United For Efficiency (U4E) Project led by UNEP and GEF. Arçelik supports market transformation towards Energy Efficient Appliances and Equipment globally. In this context, Arçelik supports development of country saving assessments with the transition to energy efficient household refrigerators and freezers at developing countries e.g. the Republic of South Africa and Thailand. Arçelik provides technical assistance and expertise on the development of energy efficiency policies, setting up performance standards, monitoring and verification schemes, test methods and the installation of test facilities for energy efficient refrigerators and gives support to the global action campaign to promote the global transition to energy efficient refrigerators particularly at developing countries. The contribution will take different forms such as technical expertise and market insights to be provided, , at the meetings of the global multi-stakeholder platforms, at technical task forces and high level and expert discussions.
- Environmental impacts of a printed circuit board manufacturing plant via streamlined approach – Istanbul Technical University Environmental Engineering, Thesis Study
- Arçelik has become a partner to the United For Efficiency (U4E) Project led by UNEP. Arçelik supports market transformation towards Energy Efficient Appliances



and Equipment globally. In this context, Arçelik supports development of estimates on the benefits and policy status of the transition to energy efficient household refrigerators, particularly in the Republic of South Africa and Thailand. Arçelik contributes to the development of performance standards, monitoring and verification schemes, test methods and the installation of test facilities for energy efficient refrigerators and give support to the global action campaign to promote the global transition to energy efficient refrigerators particularly at developing countries. The contribution will take different forms such as technical expertise and market insights to be provided, for instance, to meetings of the global multi-stakeholder platform, technical task forces and high level and expert discussions.

- Arçelik has made a commitment to “Responsible corporate engagement policy” program in scope of “Road to Paris 2015 Project” which is a global project related to combat climate change launched by CDP.
- Arçelik has made a commitment to “Science Based Targets Initiative”.
- Arçelik signed 'The Principles for Dialogue on Climate Action' within the scope of the event.
- Arçelik has signed «Paris Pledge for Action» sent by Cambridge University Institute for Sustainability Leadership

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### CC2.3f

**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 Managers, 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 Council. 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 Urbanization Ministry’s technical committees (TC) on climate change (Climate Change Awareness, Mitigation TC etc.). Energy and Environment Departments represent Arçelik in several NGOs in Turkey (TUSIAD, ISO, TOBB Durable Goods Council) and mainly in CECED for EU activities. These organizations and activities are exist to ensure that all engagement activities are in line with Arçelik’s climate change policy and strategy.

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### CC2.3g

Please explain why you do not engage with policy makers

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### Further Information

CC3.1

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

- Absolute target
- Intensity target
- Renewable energy consumption and/or production target

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
Abs1	Scope 1+2 (location-based)	100%	60%	2010	157725	2020	No, but we anticipate setting one in the next 2 years	Arçelik aims to reduce total eCO2 emissions of its domestic production plants from 2010 (base year) to 2020 by 60% by implementing new energy efficiency projects (emission reduction projects) and using the electricity generated from renewable energy sources.
Abs2	Scope 1+2 (location-based)	100%	100%	2010	157725	2025	No, but we anticipate setting one in the next 2 years	Arçelik aims to have net zero carbon emission by eliminating its total eCO2 emissions of its domestic production plants until 2025 by implementing new energy efficiency projects (emission reduction projects), using the electricity generated from renewable energy sources and carbon offsets.
Abs3	Scope 1+2 (location-based)	100%	100%	2010	157725	2040	No, but we anticipate setting one in	Arçelik aims to continue having net zero carbon emission by eliminating its total eCO2 emissions of its domestic production plants until 2040 by implementing new energy

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
							the next 2 years	efficiency projects (emission reduction projects), using the electricity generated from renewable energy sources and carbon offsets. Arçelik's first target year to meet this goal is 2025 but, Arçelik also aims to continue this target in the long term.

### 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 covered by target	Target year	Is this a science-based target?	Comment
Int1	Scope 1+2 (location-based)	100%	100%	Metric tonnes CO2e per unit revenue	2010	0.0000356	2025	No, but we anticipate setting one in the next 2 years	Arçelik aims to reduce total eCO2 emissions of its domestic production plants from 2010 (base year) to 2025 by 100% per sales revenue* by implementing new energy efficiency projects (emission reduction projects) and using the electricity generated from renewable energy sources and carbon offsets.
Int2	Scope 1+2 (location-based)	100%	100%	Metric tonnes CO2e per unit revenue	2010	0.0000356	2040	No, but we anticipate setting one in the next 2 years	Arçelik aims to continue having net zero carbon emission by eliminating its total eCO2 emissions of its domestic production plants until 2040 by implementing new energy efficiency projects (emission reduction projects), using the electricity generated from renewable energy sources and carbon offsets. Arçelik's first target year to meet this goal is 2025 but, Arçelik also aims to continue this

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment
									target in the long term.

**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	100			If we achieve our intensity target, our absolute emissions will be zero and we will reach our "Net Zero Emission" target.
Int2	Decrease	100			If we continue to achieve our intensity target, our absolute emissions will be zero and we will reach our "Net Zero Emission" target.

**CC3.1d**

Please provide details of your renewable energy consumption and/or production target

ID	Energy types covered by target	Base year	Base year energy for energy type covered (MWh)	% renewable energy in base year	Target year	% renewable energy in target year	Comment
RE1	Electricity consumption	2012	187125	0.76%	2020	100%	The purchasing rate of electricity generated from renewable energy sources which was realized as 0.76% in 2012; 28% in 2013 was increased to the level of 78% in 2014 and 82% in 2015. Arçelik aims to have net zero carbon emissions on its indirect GHG emissions by 2020.
RE2	Electricity production	2014	202975	0%	2020	1.4%	We are working on possible renewable energy production investments and following up the developments in technology and falling costs of renewable energy. Arçelik plans to invest on solar energy till the end of 2020.

### CC3.1e

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

ID	% complete (time)	% complete (emissions or renewable energy)	Comment
Abs1	50%	85%	Thanks to energy efficiency projects (emission reduction projects) and supply of electricity produced by renewable energy sources, we have reduced our GHG emissions by 51%.
Abs2	33%	51%	Arçelik aims to have net zero carbon emission by purchasing electricity generated from renewable energy, renewable electricity production and purchasing carbon credits (carbon offsetting) till the end of 2025. 51% emission has been decreased until 2015, compared to base year.
Abs3	17%	51%	Arçelik aims to continue having net zero carbon emission by purchasing electricity generated from renewable energy, renewable electricity production and purchasing carbon credits (carbon offsetting) till the end of 2040. 51% emission has been decreased until 2015, compared to base year.
Int1	33%	77%	In 2015, we decreased our 1+2 emissions per revised sales revenue 77% compared to our base year (2010) thanks to energy efficiency projects and supply of electricity produced by renewable energy sources

ID	% complete (time)	% complete (emissions or renewable energy)	Comment
Int2	17%	77%	In 2015, we decreased our 1+2 emissions per revised sales revenue 77% compared to our base year (2010) thanks to energy efficiency projects and supply of electricity produced by renewable energy sources
RE1	37.5%	82%	The purchasing rate of electricity generated from renewable energy sources which was realized as approximately 0.76% in 2012; 28% in 2013; 78% in 2014 was increased to the level of 82% in 2015.
RE2	16.67%	0%	In the reporting year, meetings were carried out with consultancy companies(EPC); feasibility studies were conducted and possible locations for solar installations were determined. Installation cost for 1 MWp solar plant is around 3 Million TL and payback time is between 12-17 years. On the other hand, technology in PV technology is developing and prices were decreasing rapidly. Arçelik plans to invest on solar energy till the end of 2020.

#### CC3.1f

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

Do you classify any of your existing goods and/or services as low carbon products or do they enable a third party to avoid GHG emissions?

Yes

#### CC3.2a

Please provide details of your products and/or services that you classify as low carbon products or that enable a third party to avoid GHG emissions

Level of aggregation	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
Group of products	Highly energy efficient household products	Low carbon product	Other: - 2009/125/EC Directive of establishing a framework for the setting of ecodesign requirements for energy-related products - 2010/30/EU Directive on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products	100%	More than 20% but less than or equal to 40%	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. Thus most the energy using household products that are of the most energy efficiency class(es) on the energy label are considered low carbon and climate-friendly solutions. The examples of Arçelik's low carbon products: • A+++ No Frost Combi Refrigerator • "A+" Energy Class 90 cm Hood • "A+++ -30% Energy Efficient" No Frost Combi Refrigerator • 55" UHD "A+" Smart TV • "A++ Energy Class" Built-in Oven • "A+++ -70% Energy Efficient" Washing Machine • "A+++ -10% Energy Efficient" Dryer • Arçelik Solar Refrigerator developed for rural regions of South Africa.

**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

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**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**

<b>Stage of development</b>	<b>Number of projects</b>	<b>Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)</b>
Under investigation	0	0
To be implemented*	0	0
Implementation commenced*	0	0
Implemented*	99	5217
Not to be implemented	0	0

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**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	2786	Scope 1 Scope 2 (location-based)	Voluntary	1379180	1455019	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.	65	Scope 2 (location-based)	Voluntary	30127	229385	<1 year	6-10 years	Because lifetime of fluorescent lamps 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 efficiency: Processes	Improvement at processes using natural gas etc	271	Scope 1	Voluntary	117251	344950	1-3 years	11-15 years	The investments effecting 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	Improvement	1460	Scope 2	Voluntary	672311	1725440	4-10	6-10 years	Electric motors are the most

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	operations regarding electric motors etc.		(location-based)				years		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.	43	Scope 2 (location-based)	Voluntary	19611	0	<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.	280	Scope 2 (location-based)	Voluntary	129053	68700	<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 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	Installing inverters to	312	Scope 2	Voluntary	143622	362871	<1 year	6-10 years	We generally use new energy

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 installation	electric motors, efficient motor implementation etc.		(location-based)						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 requirements/standards	Arçelik complies with legal legislations on GHG emission reduction and fully comply with eco-design legal legislation which 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. Greenhouse gas emission mitigation is achieved with energy efficiency operations at product and production level.
Dedicated budget for energy	Annually, energy budgets and energy efficiency investment budgets are designated, projects are materialized. At the

Method	Comment
efficiency	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 less consuming products 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.
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 framework Programs. 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	Comment
In mainstream reports (including an integrated report) but have not used the CDSB Framework	Complete	Page 72-80/ Section: Corporate Responsibility / Arçelik Annual Report 2015	<a href="https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/Arcelik Annual Report 2015_17_06_2016.pdf">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/Arcelik Annual Report 2015_17_06_2016.pdf</a>	
In voluntary communications	Complete	Page 32-33 / Section: Combatting Climate Change / Arçelik Sustainability Report 2015	<a href="https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/Sustainability-Report-2015.pdf">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/Sustainability-Report-2015.pdf</a>	
In voluntary communications	Complete	Page 9/ Section: Arçelik'ten Geri Dönüşüm Tesisi / Ankara 24 Saat	<a href="https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/ANKARA_24_SAAT-01.08.2015-ARÇELIK TEN GERI DÖNÜSÜM_P9.JPG">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/ANKARA_24_SAAT-01.08.2015-ARÇELIK TEN GERI DÖNÜSÜM_P9.JPG</a>	
In voluntary communications	Complete	Page 7/ Section: Arçelik İklim Değişikliğiyle Mücadelede Kararlı / Ankara 24 Saat	<a href="https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/ANKARA_24_SAAT-27.11.2015-ARÇELIK IKLIM DEGISIKLIGIYLE MÜCADELEDE KARARLI_P7.JPG">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/ANKARA_24_SAAT-27.11.2015-ARÇELIK IKLIM DEGISIKLIGIYLE MÜCADELEDE KARARLI_P7.JPG</a>	
In voluntary communications	Complete	Page 5/ Section: Arçelik İklim Değişikliği Zirvesinde Boy Gösterdi / Aydınlık	<a href="https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/AYDINLIK-15.12.2015-ARÇELIK, IKLIM DEGISIKLIGI ZIRVESI'NDE BOY GÖSTERDI_P5.JPG">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/AYDINLIK-15.12.2015-ARÇELIK, IKLIM DEGISIKLIGI ZIRVESI'NDE BOY GÖSTERDI_P5.JPG</a>	
In voluntary communications	Complete	Page 9/ Section: Arçelik'ten İklim Hareketi ve Yeşil Rekabetçiliğe Katılım/ Bizden haberler	<a href="https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/BIZDEN_HABERLER-01.12.2015-ARÇELIK TEN IKLIM HAREKETI VE YESIL REKABETÇİLIGE KATILIM_P9.JPG">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/BIZDEN_HABERLER-01.12.2015-ARÇELIK TEN IKLIM HAREKETI VE YESIL REKABETÇİLIGE KATILIM_P9.JPG</a>	
In voluntary communications	Complete	Page 9/ Section: Arçelik 'ten Road to Paris'e Taahhüt/ Bizden Haberler	<a href="https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/BIZDEN_HABERLER-01.12.2015-ARÇELIK TEN ROAD TO PARIS E TAAHHÜT_P9.JPG">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/BIZDEN_HABERLER-01.12.2015-ARÇELIK TEN ROAD TO PARIS E TAAHHÜT_P9.JPG</a>	
In voluntary	Complete	Page:30/Section:	<a href="https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared</a>	

Publication	Status	Page/Section reference	Attach the document	Comment
communications		Arçelik / UNEP ile İşbirliği Yapıyor / Bloomberg Businessweek Türkiye	Documents/Attachments/CC4.1/BLOOMBERG_BUSINESSWEEK_TÜRKIYE-18.01.2015-ÖZETLE_P30.JPG	
In voluntary communications	Complete	Page:19/Section: Çevreci Portföyler / CAPITAL EK1 – Green Business	<a href="https://www.cdp.net/sites/2017/15/21115/Climate%20Change%202017/Shared%20Documents/Attachments/CC4.1/CAPITAL_EK1-01.03.2015-ÇEVRE%20DOSTU%20ÜRÜN%20DÖNEMİ_P19.JPG">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/CAPITAL_EK1-01.03.2015-ÇEVRE DOSTU ÜRÜN DÖNEMİ_P19.JPG</a>	
In voluntary communications	Complete	Page:16/ Section: Söyleşi/ CAPITAL EK1 – Green Business	<a href="https://www.cdp.net/sites/2017/15/21115/Climate%20Change%202017/Shared%20Documents/Attachments/CC4.1/CAPITAL_EK1-01.09.2015-ARÇELİK'İN%20YENİ%20YESİL%20YAKLASIMI_P16.JPG">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/CAPITAL_EK1-01.09.2015-ARÇELİK'IN YENI YESIL YAKLASIMI_P16.JPG</a>	
In voluntary communications	Complete	Page:22/ Section: Arçelik Paris'te Türk Beyaz Eşya Sektörünü Temsil Etti / Dünya	<a href="https://www.cdp.net/sites/2017/15/21115/Climate%20Change%202017/Shared%20Documents/Attachments/CC4.1/DÜNYA-16.12.2015-ARÇELİK%20PARIS'TE%20TÜRK%20BEYAZ%20ESYA%20SEKTÖRÜNÜ%20TEMSİL%20ETTİ_P22.JPG">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/DÜNYA-16.12.2015-ARÇELİK PARIS'TE TÜRK BEYAZ ESYA SEKTÖRÜNÜ TEMSİL ETTİ_P22.JPG</a>	
In voluntary communications	Complete	Page:11/ Section: Arçelik CDP Global A Listesinde/ Dünya	<a href="https://www.cdp.net/sites/2017/15/21115/Climate%20Change%202017/Shared%20Documents/Attachments/CC4.1/DÜNYA-31.01.2015-ARÇELİK%20KARBON%20SAYDAMLIK%20PROJESİ%20NDE%20A%20TAKIMINA%20GİREN%20İLK%20TÜRK%20SİRKETİ%20OLDU_P11.JPG">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/DÜNYA-31.01.2015-ARÇELİK KARBON SAYDAMLIK PROJESİ NDE A TAKIMINA GİREN İLK TÜRK SİRKETİ OLDU_P11.JPG</a>	
In voluntary communications	Complete	Page:11/ Section: Arçelik'ten Enerji Verimliliğine Destek/ Güneş	<a href="https://www.cdp.net/sites/2017/15/21115/Climate%20Change%202017/Shared%20Documents/Attachments/CC4.1/GÜNES-22.05.2015-ARÇELİK'TEN%20ENERJİ%20VERİMLİLİĞİNE%20DESTEK_P11.JPG">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/GÜNES-22.05.2015-ARÇELİK'TEN ENERJİ VERİMLİLİĞİNE DESTEK_P11.JPG</a>	
In voluntary communications	Complete	Page:150/ Section: Arçelik Tüm Süreçlerinde Sürdürülebilirlik Bilinciyle Hareket Ediyor/ Platin	<a href="https://www.cdp.net/sites/2017/15/21115/Climate%20Change%202017/Shared%20Documents/Attachments/CC4.1/PLATIN-01.10.2015-ARÇELİK,%20TÜM%20SÜREÇLERİNDE%20SÜRDÜRÜLEBİLİRLİK%20BİLİNCİYLE%20HAREKET%20EDİYOR_P150.JPG">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/PLATIN-01.10.2015-ARÇELİK, TÜM SÜREÇLERİNDE SÜRDÜRÜLEBİLİRLİK BİLİNCİYLE HAREKET EDİYOR_P150.JPG</a>	
In voluntary communications	Complete	Page:151/ Section: Arçelik Tüm Süreçlerinde Sürdürülebilirlik Bilinciyle Hareket	<a href="https://www.cdp.net/sites/2017/15/21115/Climate%20Change%202017/Shared%20Documents/Attachments/CC4.1/PLATIN-01.10.2015-ARÇELİK,%20TÜM%20SÜREÇLERİNDE%20SÜRDÜRÜLEBİLİRLİK%20BİLİNCİYLE%20HAREKET%20EDİYOR_P151.JPG">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/PLATIN-01.10.2015-ARÇELİK, TÜM SÜREÇLERİNDE SÜRDÜRÜLEBİLİRLİK BİLİNCİYLE HAREKET EDİYOR_P151.JPG</a>	

Publication	Status	Page/Section reference	Attach the document	Comment
In voluntary communications	Complete	Ediyor/ Platin Page:170/ Section: Türkiye'nin CDP Performans Lideri Seçildi/ ST-Elektrik Enerji	<a href="https://www.cdp.net/sites/2017/15/21115/Climate%20Change%202017/Shared%20Documents/Attachments/CC4.1/ST_ELEKTRIK_ENERJI-01.02.2015-TÜRKIYE'NIN%20CDP%20PERFORMANS%20LIDERI%20SEÇİLDİ_P170.JPG">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/ST_ELEKTRIK_ENERJI-01.02.2015-TÜRKIYE' NIN CDP PERFORMANS LIDERI SEÇİLDİ_P170.JPG</a>	
In voluntary communications	Complete	Page:123/ Section: Arçelik Çevre ve Enerji için UNEP ile İşbirliği İçinde/ Turkishtime	<a href="https://www.cdp.net/sites/2017/15/21115/Climate%20Change%202017/Shared%20Documents/Attachments/CC4.1/TURKISH_TIME-01.02.2015-IT%20YWW_P123.JPG">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC4.1/TURKISH_TIME-01.02.2015-IT YWW_P123.JPG</a>	

#### 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	Turkey became a party to Kyoto Protocol on 26 August 2009 following Turkish Grand National Assembly's 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 was not included in Protocol Annex-B list which contains Annex-I signatory countries. Accordingly, Turkey has no numerical limit or	Increased operational cost	>6 years	Direct	Very likely	Medium	There is a mitigation target in Turkey Pledge reported in UNFCC technical paper. But this target has not been allocated to the sectors. 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 estimated financial implication	To manage this risk Arçelik has determined its GHG emission target as Net Zero Emission. Arçelik SC contributes this targets every year for increasing energy efficiency in production and using electricity produced by renewable energy sources (RES) to reduce GHG. With energy efficiency projects in Arçelik Production Plants at last 6 years, we have saved: •71137 GJ in 2010 with 138 energy efficiency (EE) projects •109516 GJ in 2011 with 173 EE projects •90463 GJ in 2012 with 134 EE projects •84351 GJ in 2013 with 105 EE projects •40170 GJ in 2014 with 66 EE projects •46914 GJ in 2015 with 99 EE	Investments and costs of energy efficiency projects (2010-2015): 19,750,891 TL. In 2015 we have also spent approx. 39 million TL for purchased electricity generated from renewable energy sources.



Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>reduction target in first obligation phase which covers 2008 to 2012 of the Protocol. However, in Paris COP21, Turkey signed the Paris Agreement and submit its INDC plan to the UN Secretariat. According to the INDC, Turkey's target is to reduce 21% of its emissions according to business as usual scenario by 2030. The INDC mainly focuses on increasing the use of solar, wind, hydroelectric, nuclear energy and increase of cogeneration plants in scope of energy. In addition it has also focused on financial incentives on energy efficiency projects. In this context it is deduced that the targets will be related to energy efficiency projects and the possible use of renewable energy</p>						<p>(investments and costs) of the energy efficiency target is 12,000,000 TL (for 2014-2016). Arçelik plants in Turkey 160 MW peak and nearly 480 Million TL investment needed for renewable energy.</p>	<p>projects. Totally; 47593 GHG emission has been reduced since 2010. As a result of EE projects undertaken, the last 4 year performance energy consumption in terms of tons of oil equivalent per equivalent product shows a decrease of:</p> <ul style="list-style-type: none"> <li>•50.5% energy consumption per eq. product at Refrigerator Plant</li> <li>•27.6% energy consumption per eq. product at Dishwasher Plant</li> <li>•35.6% energy consumption per eq. product at Tumble Dryer Plant</li> <li>•20.8% energy consumption per eq. product at Cooking Appliances Plant</li> <li>•22.3% energy consumption per eq. product at Washing Machine Plant</li> </ul> <p>Arcelik, starting from 2012, has been using electricity produced from RES. In</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>resources. Because of this reason renewable energy usage and energy efficiency investment requirements will need to be increased. Companies may need to buy electricity from renewable sources with higher prices. Energy efficiency projects and carbon credit purchasing needs will be increased and thus costs are increased. When a 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 sectors may not reach the given targets, carbon purchase necessity may occur and costs would be affected significantly. Because</p>							<p>2012,Arçelik bought 1,431,156 kWh renewable energy.In 2013,2014 and 2015 Arçelik bought 53,449,021.40 kwh, 158,314,563kwh and 179,904,936kwh. Totally,we have increased the rate of electricity generated from RES in our total electricity consumption to the level of 82% in 2015.</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	of the cost increase product prices may be affected and there can be disadvantage in competition.								
Air pollution limits	For the post 2012 period, Turkey has been signed the Paris Agreement in COP21 and submitted its INDC plan which includes the reduction target to the UN Secretariat. But it is still not clarified that how this target is distributed to sectors. 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, requirements to implement additional operational activities and/or BAT (Best Available Technologies) will arise; additional cost and investments shall	Increased operational cost	1 to 3 years	Direct	Likely	Medium	Turkish Ministry of Science, Industry and Technology Turkish Industrial Strategic Plan 2013-2017 declares if Turkey starts to implement IPPC Directive requirements as in EU, the investment financial resource for Turkish industries will be approx. 659,470 TL.	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 using for the entire plants to reduce the use of pre-treatment chemicals and energy during the surface finishing before the implementation of sheet piece powder coating. Thanks to this product, the related process is completed at 25 oC instead of 50-55 oC	

Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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.</p>							<p>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 (35053 m3/year reduction) and less GHG emission emitting (70 tCO2e/year reduction). Thanks to this transition dishwasher plant has been selected as "Best Available Technology (BAT) using plant" by T.R. Ministry of Environment and Urban Planning. In addition, powder die coating transition has been implemented in Arçelik plants. And this transition</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								reduced VOC (volatile organic compound).	
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 period for industry will start in 2017 for GHG emissions of 2015 and 2016. 3 of Arçelik Production Plants (Washing machine, Refrigerator,	Wider social disadvantages	1 to 3 years	Direct	Virtually certain	Medium	ISO 14064 GHG Emission Inventory Verification is an continuous process for Arçelik in yearly basis. The verification for the Ministry is not entered into force yet. It will start at 2017. Total estimated financial implication for both ISO 14064 & Ministry verification process and training are may be 50,000 TL for the period of 2015-2016.	To manage the risk, Arçelik has calculated greenhouse gas emissions released during its activities since 2006. In 2010, 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	The total cost of the verification for GHG Regulation and ISO 14064 is 30,000 TL.

Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>Electronics) are in the scope of this regulation and they sent their GHG Monitoring Plan to the Ministry. This plans are approved by the Ministry. In 2017, Arçelik 2015 and 2016 GHG report will be audited and verified by the licenced auditor company. Arçelik has calculated greenhouse gas emissions released during its activities since 2006. In 2010, ARÇELIK established Greenhouse Gas (GHG) Management and Reporting System, before the regulation publish date. ARÇELIK calculated the Greenhouse Gas (GHG) emissions sourced by its facilities by using IPCC-2006 and in accordance with ISO 14064 GHG Standard. Since</p>							<p>verification is Arçelik's all production plants in Turkey and Head Office. In addition Arçelik's related plants (which are in scope of regulation) has prepared the monitoring plan for GHG. And they renewed their systems in accordance with Turkish GHG Regulation.</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>2010, Arçelik'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. 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. But this is important tool for ISO 14064-1, because declaration of the indirect emission in Sustainability Report. And this information can be compared with the competition. This causes uncertainties and differences</p>								

Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	(calculation results, acceptances etc.).								
Fuel/energy taxes and regulations	<p>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.</p> <p>Operational costs are directly impacted by the variable prices in the world. The energy prices are being dependent on the 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 natural gas costs increase to</p>	Increased operational cost	Up to 1 year	Direct	Virtually certain	Medium	<p>For the last 10 years, electricity unit price has increased by an average of 7% per year. Between 2014-2015 electricity price increased 7.58%. Between 2014-2015 natural gas price increased 7.62%. Total extra cost sourced by price increases: 4.37 Million TL.</p>	<p>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. We determine the energy consumption levels at all the stages of our production processes, we query energy efficiency through periodical analyses, we identify areas open to improvement, and we design and realize projects that will increase energy efficiency in production. In addition to that, developments regarding renewable energy are closely followed; operations are carried out to</p>	<p>We invested approximately 4.2 million TL to energy efficiency projects during reporting year.</p>



Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	extend that may cause problem in competition.							include this subject into prospective business plans.	
Product efficiency regulations and standards	Energy efficiency and ecodesign legislations for energy using products in Turkey must be in harmony with the EU laws. EU legislations must be transposed into Turkish law as soon as they are published.	Increased operational cost	Up to 1 year	Direct	Virtually certain	Medium	Estimated financial implication of membership to some associations (CECED, TÜRKBESD etc.) is 1,100,000 TL per year.	Arçelik closely follows the new EU energy labelling and ecodesign legislations through CECED membership and takes necessary internal actions. In strong collaboration with TÜRKBESD, we convey developments about EU ecodesign and energy labelling to Turkish Ministry of Science, Industry and Technology and lead the sector.	Cost of direct membership to some associations (CECED, TÜRKBESD) is approximately 1,100,000 TL. Arçelik spent about 47 million TL for environmental friendly R&D activities in 2015.
Product labeling regulations and standards	New EU energy labelling regulation is being studied by the EU Commission and expected to enter into force for refrigerators, washing machines, TVs and dishwashers by end of 2019. Such analysis led by the EU Commission showed the current energy label does not	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 ~	Arçelik plans to tackle energy efficiency problems by designing high energy efficient products. Thanks to Arçelik's R&D strategies and continuous investment so far, Arçelik has already designed and produced variable speed compressors	Arçelik spent about 47 million TL for environmental friendly R&D activities in 2015.

Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>fully meet the technological advancement of today. 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. Thus EU Commission has started to work on new energy label layouts along with calculation methods of energy efficiency index. Besides, the performance test standard for measuring energy consumption of refrigerating appliance has been revised. A new measurement methodology is going to be published for refrigerating appliances and dishwashers in the EU. They are going to be effective with the introduction of</p>						<p>1.92 billion TL). In 2015, the consolidated net sales turnover reached 14.166 billion TL, and international sales comprised 60% of consolidated sales. One of the main reasons of the increase in international sales share is our investment on environmentally friendly R&amp;D activities and producing competitive energy efficient products. When this new labeling standard enters into force, our international sales share may be significantly affected.</p>	<p>for highly energy efficient refrigerators. Arçelik has also invested in vacuum insulation panels that enable very low conductivity compared to conventional polyurethane used in Refrigerators. As a matter of fact, energy efficiency investments in component technologies are accompanied with system optimization expertise in Arçelik. New Technologies for better energy efficiency are used for WET appliances (WM, DW and TDs.)</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	new energy label. R&D test methodologies and product designs are to be updated accordingly. New label will introduce downgrading of current energy efficiency classes. A+++ of today will become C, D or E based on energy consumption. This will eventually cause manufacturers to design more efficient appliances to meet consumer demands towards higher 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	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.	To manage this risk Arçelik established 2 treatment plants to recycle WEEEs. Refrigerators and other cooling appliances contains Chlorofluorocarbons (CFCs) are being environmentally recycled. Buy-back campaigns are being	Investment cost of the treatment plants are approximately 9 Million TL.

Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>and environmentally sound disposal of WEEE from private households after collection points and distributors. In the WEEE Regulation, WEEE from private household 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 high GWP gases included. Due to collection and destruction of the</p>						<p>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 EUR (56,000 TL).</p>	<p>organized to collect the old appliances. The goal of campaigns is transforming the old refrigerators and other old cooling appliances with the newer (with low GWP gas and more energy efficient product).</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	gases originating from old refrigerators costs will be incurred under Regulation on Waste Electric 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	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
	<p>obtaining a production licence. For wind energy possible facility is our factory located in Çerkezköy and for solar energy possible facilities are our factories in Eskişehir and Çayırova. 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 the area needed for security. And the area needed for</p>						<p>energy investments result into 3 Million TL reduction in capital availability. For whole Arçelik plants in Turkey 160 MW peak and nearly 480 Million TL investment needed.</p>		

Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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 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</p>								

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

CC5.1b

Please describe your inherent risks that are driven by changes 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 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	Increased operational cost	1 to 3 years	Direct	Very likely	Medium	We have a new plant in Thailand. The 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 manufactured more than one location, South Africa, Russia, Romania, China, Thailand etc.	The investment cost for Thailand project is approx. 100 million USD.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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 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</p>								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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 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.</p>								
Induced changes in natural resources	Depending on population increase; increase in energy consumption today causes that world is unable to balance	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	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>its precise balance with its own natural facilities. Scientific researches may suggest different schedules but the point they all agree on is that climate change will constitute a threat in a future not too distant towards resources on the world and extinction of living creatures. Changes in physical life conditions will cause deep-rooted changes also in socio-economic structure of the world. For this reason climate changes is not only an environmental threat but also an economical threat. Together with ever increasing population the fact that natural resources are diminishing fast will impact not only industrialists but also for life. From this point of view,</p>							<p>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 • 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 25.1 kg.</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>supply prices of natural resources will increase, despite this increase in the future it would be impossible to obtain resources to satisfy demand. For this reason operations will be accelerated for recycling resources but providing budget that would cover investment needs to be formed will be gradually grow difficult. Some of indispensable natural resources for white goods and TV are water, energy and basic minerals like iron, copper, aluminium. Significant quantities of decreases in such resources will directly and severely affect our sector. This would affect product R&amp;D activities and innovation significantly.</p>								

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 Çayırova plants. They have been working for approximately 20 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	Reduction in capital availability	3 to 6 years	Direct	Likely	Medium	If we invest cogeneration systems and if natural gas price increases than 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%.	We are working on possible cogeneration investments with purchasing, finance and strategic planning departments We are trying to estimate possible natural gas unit price for further years.	There is no cost to work on the possible cogeneration investments.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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 \$/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	Increased operational cost	Up to 1 year	Direct	Likely	Medium	Nearly 2.2 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	Nearly 2.2 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
	<p>wind. As Arçelik, while we are signing contract of electricity purchasing, we are asking to be sure that energy companies use renewable sources. Starting from 2012 June, we have been using electricity from renewable energy sources. , In 2015, we have continued, our practice of supplying energy generated from renewable energy resources to our campuses. As part of the practice in 2015, 82% of energy consumption of campuses in Bolu, Beylikdüzü, Sütlüce, Eskişehir, Çerkezköy and Ankara was generated through renewable energy sources, preventing 83,553 ton CO2 of greenhouse gas emission. The purchasing rate of electricity generated from renewable energy sources</p>							energy sources.	



Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>which was realized as approximately 1% in 2012, and 28% in 2013, 78%in 2014 and was increased to the level of 82% in 2015. We plan to generalize this to all of our domestic plants in coming years. If we can purchase all of our electricity from a renewable source we can reduce our emissions by nearly 100000 tonnes of CO2e. The risk of such kind of method is financial. If we can purchase electricity from non-renewable energy plants with just 0.01 TL cheaper than renewable energy plants, it will cause 2.2 Million TL extra cost for electricity.</p>								

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

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CC5.1e

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

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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

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**Further Information**

**Page: CC6. Climate Change Opportunities**

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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 level operations so that our Company will	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 tCO <sub>2</sub> e, 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
	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 published in 2009. It introduces a	New products/business services	3 to 6 years	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 international sales share was 40%of	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 by 2017.Investment in improvement of high efficiency	The cost of R&D studies for energy efficient and environmental friendly products is 47 million TL in 2015.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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 set to 42 which is 44 before. In Turkey, the same regulations are transposed into national law in order to be harmonized with the EU</p>						<p>total sales revenue (1.2 billion EUR ~ 1.92 billion TL). In 2015, the consolidated net sales turnover reached 14.166 billion TL, and international sales comprised 60% of consolidated sales. One of the main reason of the increase in international sales share is our investment on environmentally friendly R&amp;D activities and producing competitive energy efficient products.</p>	<p>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&amp;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&amp;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 considered insulation. The better the insulation, the</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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 ecodesign measures are on the way to increase the</p>							<p>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, through this strong method we have towards domestic target</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	minimum energy efficiency limit by 2018. In addition circular economy package is under the review of EU Commission which will rule product ecodesign, durability and recyclability of the products.							markets environmental-friendly products.	

**CC6.1b**

Please describe your 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	Wider social benefits	Up to 1 year	Direct	Likely	Medium-high		To manage this opportunity we have developed a carbon trade	Total management cost of this method is



Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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 take our product and production technologies to that country and ensure that country also become aware about energy efficient products, therefore we seize the opportunity to contribute to reduction of country's GHG emissions. As an example; in 2014, Arçelik became a partner of the project called United for Efficiency (U4E) which organized by UNEP and GEF to widen energy efficient products in houses contributing GHG emission reduction. Within this project Arçelik gave technical support to developing countries particularly Thailand and South Africa to increase energy efficiency in refrigerators. In South Africa our employees climbed to Kilimanjaro mountain to attract</p>							<p>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.</p>	<p>around 200,000 TL.</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>attention to global warming. At the same time we contribute to development of countries where we invest. For example in South Africa we developed Arçelik Solar Refrigerator for rural regions of South Africa that lack electricity. We can all envisage the possibilities this product has offered in terms of storing foods and healthcare products in regions where there were no refrigerators before. 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 developed the "Arçelik Energy Efficient Refrigerators Grouped Project". 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. We aware that our</p>								

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>environmental-friendly products and production activities are opportunities to increase our brand value and we perform our activities in accordance with this opportunity. According to Harvard Business School study, 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 and climate change are deemed as an opportunity financially.</p>								

CC6.1c

Please describe your 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 behavior	<p>Within the scope of its Extended Product Responsibility, Arçelik made investments for encouraging the recovery of the old products (WEEE) and established its own WEEE recycling plants in Bolu and Eskişehir plants to provide the usage of WEEEs as resources. Large white goods and small household appliances are recycled in Arçelik's WEEE Recycling Plants. Therefore, the reduction of GHG emissions is ensured, especially through the recycling of old and high electricity consuming products at the WEEE recycling</p>	Increased demand for existing products/services	1 to 3 years	Indirect (Client)	Very likely	Medium-high	<p>A significant contribution to energy efficiency in our country is ensured through the recycling of high energy consuming old products. The energy gain achieved by means of the recycling of high energy consuming old products at the two facilities since their engagement is equivalent to the annual energy generation of six 2.5 MW wind turbines. This means approx. 15 Million TL gain to Turkish economy.</p>	<p>To increase demand of consumers' changing buying behaviour towards energy efficient products "The Greatest Renewal Movement of Turkey Campaign" has been started across Turkey for the purpose of collecting WEEEs and reintroducing them to the nature and national economy, with the slogan "Let the Return to Nature Begin". As part of the market transformation campaign, WEEEs collected from customers by Arçelik and Beko dealers and authorized services were</p>	Investment cost of the WEEE recycling plants is approximately 9 Million TL.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>plants, thereby also contributing to our country's combat against climate change. To increase tendency in consumers' changing buying behaviour towards energy efficient products "The Greatest Renewal Movement of Turkey Campaign" has been started across Turkey for the purpose of collecting WEEEs and reintroducing them to the nature and national economy, with the slogan "Let the Return to Nature Begin". Recycling is also encouraged through our sales campaigns, sustainable business models</p>							<p>sent to Arçelik's own licensed recycling plants. Materials obtained from WEEEs recycled at plants are regained to the economy in accordance with the concept of "Circular Economy".</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	are developed thanks to this campaign. Accordingly, it is seen that there is gradual tendency in consumers' changing their old and low efficient products by new energy efficient products. This is an opportunity for Arçelik.								
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 this opportunity and also we focus on UN SDG. We share our sustainability activities through our sustainability reports with our stakeholders.	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 2015, the consolidated net sales turnover reached 14.166 billion TL, and international sales comprised 60% of consolidated	Environmental production and environment friendly products are the main elements of Arçelik's sustainability management. Arçelik manages sustainability within its activities via Sustainability Council.	The cost of R&D studies for energy efficient and environmental friendly products is 47 million TL in 2015.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>According to a study conducted by Harvard Business School by reviewing 180 companies, long term market share and share certificate value of companies having high sustainability performances and reporting them increase in comparison with those with low sustainability performance and such companies draw attention of investors. In this scope, all activities concerning environment including also activities performed in connection with climate change are deemed as an opportunity financially.</p>						<p>sales. One of the main reason of the increase in international sales share is our investment on environmentally friendly R&amp;D activities and producing competitive energy efficient products.</p>		

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CC6.1d

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

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CC6.1e

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

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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

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**Further Information**

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

**Page: CC7. Emissions Methodology**

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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 (location-based)	Fri 01 Jan 2010 - Fri 31 Dec 2010	80687
Scope 2 (market-based)	Fri 01 Jan 2010 - Fri 31 Dec 2010	0

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**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

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**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	74.1	Other: ton/TJ	IPCC Guidelines for National Greenhouse Gas Inventories Chapter 2: Stationary Combustion- Volume 2: Energy Intergovernmental Panel on Climate Change, Table 2.2: Default emission factors for stationary combustion in the energy industries, Table 2.3: Default emission factors for stationary combustion in manufacturing industries and construction
Diesel/Gas oil	74.1	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	77.4	Other:	IPCC Guidelines for National Greenhouse Gas Inventories Chapter 2: Stationary Combustion- Volume 2:

Fuel/Material/Energy	Emission Factor	Unit	Reference
		ton/TJ	Energy Intergovernmental Panel on Climate Change , 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)	63.1	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)	63.1	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	56.1	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	0.464	Other: kg CO2e/kwh	DEFRA Carbon Factors Guide Overseas Electricity Table
Motor gasoline	69.3	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	73.3	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

#### Further Information

**Page: CC8. Emissions Data - (1 Jan 2015 - 31 Dec 2015)**

**CC8.1**

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

Financial control

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**CC8.2**

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

59363

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**CC8.3**

**Please describe your approach to reporting Scope 2 emissions**

<b>Scope 2, location-based</b>	<b>Scope 2, market-based</b>	<b>Comment</b>
We are reporting a Scope 2, location-based figure	We are reporting a Scope 2, market-based figure	Our Scope 2 (location-based) emissions are emitted from grid electricity and calculated with using grid electricity emission factor and verified by accredited body. Our Scope 2 (market-based) emissions are only emitted from electricity that supplied from renewable energy sources and verified by accredited body as "0".

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**CC8.3a**

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

Scope 2, location-based	Scope 2, market-based (if applicable)	Comment
18299	0	Our Scope 2 (location-based) emissions are emitted from grid electricity and calculated with using grid electricity emission factor and verified by accredited body as "18299". Our Scope 2 (market-based) emissions are only emitted from electricity that supplied from renewable energy sources and verified by accredited body as "0".

#### CC8.4

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

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 location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	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	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	Since these are not under financial and administrative control of Arçelik, they are excluded.

Source	Relevance of Scope 1 emissions from this source	Relevance of location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded
campus, emissions from waste recycling and disposal				
Cafeteria, canteen services, bank branches and cleaning contractor services	Emissions are not relevant	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 treatment plant	Emissions are not relevant	No emissions from this source	No emissions from this source	During treatment at wastewater treatment plants, greenhouse gas emissions occur as a result of bacteria activities. As CO2 and CH4 emission created during biological treatment is not set forth at "IPCC Guidelines for National Greenhouse Gas Inventories, Volume 5: Waste, Chapter 6: Wastewater Treatment and Discharge" it is not included in calculations.
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	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.
Gases used for controlling gas and smoke detectors	Emissions are not relevant	No emissions from this source	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	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 flowmeters, - 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 (location-based)	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 uncertainty of the grid electricity emissions factor published in International Energy Agency Report.
Scope 2 (market-based)	Less than or equal to 2%	No Sources of Uncertainty	Arçelik's Scope 2 (market-based) emissions are emitted from electricity sourced by renewable energy sources and calculated and verified as "0" . Because of this reason there is no uncertainty.

#### CC8.6

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

Third party verification or assurance process in place

#### CC8.6a

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

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Annual process	Complete	Reasonable assurance	<a href="https://www.cdp.net/sites/2017/15/21115/Climate%20Change%202017/Shared%20Documents/Attachments/CC8.6a/ISO%2014064_Verification_2015.pdf">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC8.6a/ISO 14064_Verification_2015.pdf</a>	Arçelik Carbon Footprint Verification Certificate 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 Emission 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 at least one of your reported Scope 2 emissions figures

Third party verification or assurance process in place

#### CC8.7a



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

Location-based or market-based figure?	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
Location-based	Annual process	Complete	Reasonable assurance	<a href="https://www.cdp.net/sites/2017/15/21115/Climate%20Change%202017/Shared%20Documents/Attachments/CC8.7a/Scope%202.pdf">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC8.7a/Scope 2.pdf</a>	Arçelik Carbon Footprint Verification Certificate (Page:1-3), CDP Verification Document (Page:4-5), Renewable Energy Declarations (Page:6-10)	ISO14064-3	100
Market-based	Annual process	Complete	Reasonable assurance	<a href="https://www.cdp.net/sites/2017/15/21115/Climate%20Change%202017/Shared%20Documents/Attachments/CC8.7a/Scope%202(market).pdf">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC8.7a/Scope 2(market).pdf</a>	Arçelik Carbon Footprint Verification Certificate (Page:1-3), CDP Verification Document (Page:4-5), Renewable Energy Declarations (Page:6-10)	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 (2015)". 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 (2015)". 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 2015 - 31 Dec 2015)**

### CC9.1

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

Yes

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**CC9.1a**

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

Country/Region	Scope 1 metric tonnes CO2e
Romania	12585
Russia	7701
China	508
South Africa	1621

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**CC9.2**

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

By facility

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**CC9.2a**

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

Business division	Scope 1 emissions (metric tonnes CO2e)
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**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)	12585	44.717633	25.318465
Beko LLC (RU)	7701	55.80186	37.798119
Beko China	508	39.859155	116.591034
Jacobs (SA)	1397	-29.923245	30.983171
Ezakheni (SA)	207	-28.637490	29.862127
East London (SA)	18	-32.984058	27.832307

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**CC9.2c**

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

GHG type	Scope 1 emissions (metric tonnes CO2e)
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**CC9.2d**

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

Activity	Scope 1 emissions (metric tonnes CO2e)

### Further Information

Page: **CC10. Scope 2 Emissions Breakdown - (1 Jan 2015 - 31 Dec 2015)**

#### 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, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Romania	0	0	0	40227
Russia	10571	0	22761	0
China	2200	0	4738	0
South Africa	13226	0	28476	0

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**CC10.2**

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

By facility

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**CC10.2a**

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

Business division	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
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**CC10.2b**

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

Facility	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
Arctic (RO)	0	0
Beko LLC (RU)	10571	0
Beko China	2200	0
Jacobs (SA)	6767	0
Ezakheni (SA)	4964	0
East London (SA)	1495	0

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**CC10.2c**

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

Activity	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
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**Further Information**

**Page: CC11. Energy**

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**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%

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**CC11.2**

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

Energy type	MWh
Heat	0
Steam	0
Cooling	0

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**CC11.3**

Please state how much fuel in MWh your organization has consumed (for energy purposes) during the reporting year

293522

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**CC11.3a**

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

Fuels	MWh
Diesel/Gas oil	7085
Distillate fuel oil No 4	6622
Liquefied petroleum gas (LPG)	7554
Natural gas	267220
Motor gasoline	5040

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**CC11.4**

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



Basis for applying a low carbon emission factor	MWh consumed associated with low carbon electricity, heat, steam or cooling	Emissions factor (in units of metric tonnes CO2e per MWh)	Comment
Direct procurement contract with a grid-connected generator or Power Purchase Agreement (PPA), where electricity attribute certificates do not exist or are not required for a usage claim	179905	0	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. That's why Arçelik used emission factor of Turkey from "DEFRA Carbon Factors Guide Overseas Electricity Table" for grid electricity (from non-renewable sources).In 2015 grid electricity emission factor (from non-renewable sources) was 0,464 kgCO2e/kwh. We have continued, in 2015, our practice of supplying energy generated from renewable energy resources to our campuses, which we implemented in 2012.As part of the practice in 2015, 82% of energy consumption of campuses in Bolu, Beylikdüzü, Sütluçe, Eskişehir, Çerkezköy and Ankara was generated through renewable energy sources, preventing 83,553 tons CO2 of greenhouse gas emission. 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. Arçelik produces its own energy by trigeneration units in two of its plants (Both of them have 6.3 MW Wartsila Engines). Total produced electricity quantity by this two trigeneration units is 17961 MWh. 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

CC11.5

Please report how much electricity you produce in MWh, and how much electricity you consume in MWh

Total electricity consumed (MWh)	Consumed electricity that is purchased (MWh)	Total electricity produced (MWh)	Total renewable electricity produced (MWh)	Consumed renewable electricity that is produced by company (MWh)	Comment
219304	201343	17961	0	0	Although Arçelik doesn't have a renewable energy plant yet, he is purchasing electricity generated from renewable energy sources from the year 2012. The purchasing rate of electricity generated from renewable energy sources which was realized as approximately 1% in 2012; 28% in 2013; 78% in 2014 was increased to the level of 82% in 2015, preventing 83,553 ton CO2 of greenhouse gas emission.

#### 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	Please explain and include calculation
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Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Emissions reduction activities	10.71	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. In 2014 our total Scope1&2 emissions were 86979. In 2015 our total Scope1&2 emissions are 77662. Then the total percentage change is calculated as $[(77662-86979)/86979]*100 = (-)10.71\%$
Divestment			
Acquisitions			
Mergers			
Change in output			
Change in methodology			
Change in boundary			
Change in physical operating conditions			
Unidentified			
Other			

**CC12.1b**

**Is your emissions performance calculations in CC12.1 and CC12.1a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?**

Location-based

**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 (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.000008214	metric tonnes CO2e	9455013000	Location-based	22	Decrease	Greenhouse gas emissions per revenue decreased by 22%, in 2015. Major reasons of this decrease is energy reduction activities. This energy reduction activities include the use of the electricity generated by renewable energy resources and energy efficiency projects performed at Plants.

### CC12.3

Please provide any additional intensity (normalized) metrics that are appropriate to your business operations

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.002642848	metric tonnes CO2e	unit of production	29385719	Location-based	17.66	Decrease	Greenhouse gas emissions per unit of production decreased 17.66%. Major reasons of this decrease is energy reduction activities. These activities include energy consumption reduction operations performed at Plants and energy efficiency projects and renewable energy supply.

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**Further Information****Page: CC13. Emissions Trading**

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**CC13.1**

**Do you participate in any emissions trading schemes?**

Yes

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**CC13.1a**

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

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

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**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 tCO<sub>2</sub>e, 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.

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**CC13.2**

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

No

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**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 CO <sub>2</sub> e)	Number of credits (metric tonnes CO <sub>2</sub> e): Risk adjusted volume	Credits canceled	Purpose, e.g. compliance
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**Further Information**

**Page: CC14. Scope 3 Emissions**

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**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	175572	2006 IPPC Guidelines for National Greenhouse Gas Inventories	16.00%	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 (183 suppliers) is considered. 16% 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 2014.
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				Production 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 provided				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
Downstream transportation and distribution	Relevant, calculated	135004	EPA Center for Corporate Climate Leadership GHG Emission Factors Hub Emission Factors for Greenhouse Gas Inventories . The emission factors are taken from Table 9: Product Transport Emission Factors	100%	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 domestic, import and export product transportation activities has been calculated and verified by an independent body in accordance with ISO 14064-1 and ISO 14064-3 in 2015. The calculation methodology is "EPA Center for Corporate Climate Leadership: GHG Emission Factors for Greenhouse Gas Inventories".
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 Scope 3 emissions.
Other (upstream)					



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
Other (downstream)					

**CC14.2**

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

Third party verification or assurance process in place

**CC14.2a**

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

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 3 emissions verified (%)
Annual process	Complete	Limited assurance	<a href="https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC14.2a/SKM_C224e17042710160.pdf">https://www.cdp.net/sites/2017/15/21115/Climate Change 2017/Shared Documents/Attachments/CC14.2a/SKM_C224e17042710160.pdf</a>	Verification Opinion Statement	ISO14064-3	100

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 3 emissions verified (%)
				Page 1-3		

**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	Emissions reduction activities	0.28	Decrease	In 2015, we decreased our Scope 3 domestic product logistic emissions 0.28% with using railway transportation instead of road transportation. In scope of this emission reduction activity approx.160049 km road transportation has not been used.
Downstream transportation and distribution	Change in boundary	190	Increase	In 2015, we have extended our Scope 3 logistic activities boundaries . In 2013 and 2014 our boundary was domestic product logistic activities (The transportation activities held in only Turkey). In 2015 we have also included export and import logistic activities into our scope and that is why our Scope 3 emissions seem like nearly 3 times increased. But the reason

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
				is extending of the verified emission scope.

#### 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

#### 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

Type of engagement	Number of suppliers	% of total spend (direct and indirect)	Impact of engagement
Active engagement	183	80%	"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 's environmental approach can only be achieved by

Type of engagement	Number of suppliers	% of total spend (direct and indirect)	Impact of engagement
			including all the collaborators in the supply chain with in 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.

CC14.4c

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 Council	Chief Financial Officer (CFO)

**Further Information**

**CDP**

