

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

Please give a general description and introduction to your organization.

Akenerji, a member of the Akkök Group of Companies, is one of the largest private electricity producers in Turkey in terms of both installed capacity and number of customers. The company was established in 1989 and formed a strategic equal partnership with one of the largest energy companies in Europe, ČEZ, in 2009. ČEZ Group resolves to improve its energy efficiency and reduce CO2 emissions per MWh generated in the Czech Republic by 46% before 2020 as compared to 2001. ČEZ thus joins other energy companies that declared their specific goals in the context of the Paris climate conference. ČEZ is actively negotiating in Paris for effective carbon pricing and interconnection of CO2 trading, and is one of about 100 international organizations that have already supported “business proposals.”

Akenerji operates at different levels of the electricity supply chain (generation, wholesale and retail) and is pursuing further opportunities to support its leading position through investments in the market. With more than 25 years of experience, Akenerji has maintained steady growth with a balanced portfolio. As of end of 2016, the company has total installed capacity of 1,211 MW, which consists of 1 Natural Gas Combined Cycled Power Plant (NGCCPP) (904 MW), 7 Hydroelectric Power Plants (HPPs) (292 MW) and 1 Wind Power Plant (WPP) (15 MW). We have no thermal power plants operating with coal.

The mission of Akenerji is to make reliable and long-term contribution to Turkey's energy needs by operating with a quality-focused approach at every stage of the energy sector value chain. Therefore, we aim to reach a well-balanced portfolio and manage fuel supply risk by diversifying our energy sources as a part of the strategy of keeping provision of accessible and affordable energy supply for Turkey. Within the framework of this mission, in addition to natural gas-based generation, Akenerji also makes large-scale investments in renewable energy sources. Akenerji started to diversify the sources of its generation portfolio significantly starting in 2005, at which time the company's installed power consisted solely of thermal power plants. In 2009, Akenerji launched its first wind energy generation plant, Ayyıldız WPP. Akenerji has been the first private company to invest in HPP in Turkey, when the Energy Market Regulatory Authority initiated its first tenders for private sector to build hydroelectric power plants. As of the end of 2016, total installed capacity from renewable energy resources is 292 MW with existing 7 HPPs and 1 WPP, which in total corresponds to 25 % of Akenerji's total installed capacity. Akenerji is still investing in renewable, wind energy, by increasing its Ayyıldız WPP's installed capacity by 88%.

Akenerji's Sustainability Approach:

Every year, sustainability is integrated into increasing number of decision making mechanisms within the company. As a tool for managing and maintaining the efforts to reach sustainability, Akenerji gives importance to monitor quality performance in its services together with stakeholder engagement performance.

As a part of monitoring the environmental sustainability performance, Akenerji launched the "Carbon Management Project" which includes regular monitoring of the company's GHG emissions. It is decided to monitor, report and verify the GHG inventory of Erzin NGCCPP in ISO 14064-3 standard for 2016.

We benefit from a variety of dialogue platforms to learn about the sustainability expectations of our stakeholders including employees, customers, creditors, investors, regulatory bodies, suppliers, local communities, local authorities, society, and media as well as to give them information on these issues. The communication channels are Integrated management systems, "We Are the Energy" Employee Suggestion System, Customer satisfaction surveys, Environmental Impact Assessment (EIA) reports, workshops/events etc. Moreover, Akenerji participates to CDP since 2010; prepares annual Environmental and OHS reports since 2010; and submits IFC Annual Environmental and Social Performance Monitoring Reports since 2010. As a part of our communication channels with our stakeholders, we also benefit from sustainability reports. Akenerji published its Sustainability Report according to the Global Reporting Initiative's international reporting standard. We are proud to be the first energy company in Turkey to issue a Sustainability Report (for 2014 reporting period) based on GRI G4. Since 2010, Akenerji has received certification for ISO 9001:2015 Quality, OHSAS 18001:2007 Occupational Health and Safety and the ISO 14001:2015 Environment Management Systems.

Moreover, as of 2015, CDP Water Program has been initiated in our country. We have been among the pioneer companies that started to report to the program in its initial year and conveyed our water management system.

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

Fri 01 Jan 2016 - Sat 31 Dec 2016

CC0.3**Country list configuration**

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

Select country
Turkey

CC0.4**Currency selection**

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

USD(\$)

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.

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.

Further Information

Module: Management

Page: CC1. Governance

CC1.1

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

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

CC1.1a

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

Akenerji has a holistic approach to sustainability, which integrates the environmental, economic and social dimensions of sustainability through the support of various departments. The ultimate responsibility is given to the highest level of decision making authority, and it is the board of directors.

In order to manage and report sustainability efforts and achievements in a more holistic manner, a Sustainability Committee was established within Akenerji in 2013. The business units represented at the Sustainability Committee are as follows:

- Health, Safety, Environment and Quality (Leader)
- Accounting and Tax Management
- Corporate Communications
- Energy Services
- Energy Trade
- Fuel Supply and Performance
- Human Resources
- Legal Affairs
- Procurement
- Projects
- Strategic Planning and Risk Management

All climate change-related efforts and achievements at Akenerji are reported to the CEO. To manage these efforts, Akenerji has a Quality Project Team under the lead of the Health, Safety, Environment and Quality (HSEQ) department. The Quality Project Team consists of 11 employees including environmental engineers, health & safety specialists, and engineers and operators from the power plants.

The Quality Project Team has regular meetings to check the status of our efforts under ISO 9001 (Quality), ISO 14001 (Environment) and OHSAS 18001 (Health and Safety), and ISO 14064-3 Verification to ensure compliance with applicable environmental, health and safety regulations, to make gap analysis, and to plan for continuous improvements.

Our internal auditors were selected to have at least one person from each department, and they have been trained by an external consultancy firm to in order to improve and maintain HSEQ management systems. All departments accept responsibility for climate change and involve the risks and opportunities in their decision making processes, embed them into their sustainability targets. The coordination of efforts for dealing with the risk and opportunities of climate change are coordinated by the Health, Safety, Environment and Quality (HSEQ) department. In addition to internal trainings, to increase the number of our internal auditors and enlarge the internal audit team, 135 man-hours of ISMS Internal Auditor training was provided to 9 more employees in 2016.

In our operating power plants, the Directorates of Health, Safety, Environment and Quality, Fuel Supply and Plant Coordination that operate under the function of the Production Assistant General Manager are responsible for the management of environmental sustainability efforts. Directorate of Health, Safety, Environment and Quality is responsible for the OHS and environmental performance throughout the process starting with project phase until the full operation of plants.

Internal and external communication of sustainability performance is carried out through annual environmental and social performance monitoring reports for creditors, and management systems and annual sustainability reports, and they are reported to the Board of Directors via the Executive Board.

In addition to the Sustainability Committee; the risks and opportunities are also evaluated and managed by the Risk Management Committee, which was established in March 2015 for better evaluation of risks & opportunities and take immediate actions due to the changing market conditions (more liquid and competitive). Climate Change related risks & opportunities could also be evaluated and managed by the Risk Management Committee. The Committee members are General Manager, Deputy General Manager, Assistant General Managers, Directors, and Strategic Planning and Risk Manager. The Committee convenes on a monthly basis, and it is ensured that the necessary actions are taken by discussing the risks that the company incurs/may incur in the changing market conditions.

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
Board/Executive board	Recognition (non-monetary)	Behavior change related indicator Other: Sustainability	Board of Directors has the ultimate responsibility about the overall sustainability performance of Akenerji. The pioneer role of Akenerji in Turkish energy sector could be realized with the vision of the Board.

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
		performance	
Environment/Sustainability managers	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction target Efficiency target Behavior change related indicator Other: Successful implementation of carbon management project	A performance based compensation is available for HSEQ Department staff based on the pre-determined targets. In terms of carbon management performance, Carbon Management Project is one of the key considerations for bonus determination for the Health, Safety, Environment and Quality (HSEQ) Manager and environmental engineer in the HSEQ Department.
All employees	Monetary reward	Emissions reduction project Energy reduction project Efficiency project	All employees have personal performance indicators as well and are rewarded when they reached the target. All employees can suggest improvements to reduce the environmental footprint of the company through filling out questionnaires to be submitted to their supervisors and to HSEQ directly. There is an opportunity for the employees especially for the ones working at the power plants to receive monetary reward, in case their suggestions are considered to have a significant improvement in the company's environmental performance, and are implemented following the evaluation.
Board/Executive board	Monetary reward	Energy reduction target Efficiency target	Board of Directors has the ultimate responsibility about the overall performance of Akenerji and bonus is delivered inline with the achievements of the targets at the year end. Particularly, achievement of energy reduction target and increase of efficiency are of important targets for the Board.
Environment/Sustainability managers	Recognition (non-monetary)	Emissions reduction project Emissions reduction target Energy reduction project Energy reduction target Efficiency project Efficiency target Other: Behaviour change related indicator	HSEQ Manager leads the Sustainability Team of Akenerji and encourages all employees for reduction of emissions, energy used and improvement of efficiency. Beyond achievement of KPIs and monetary rewards; recognition among Akenerji, Akkök Group, ČEZ Group, Turkish energy sector, and energy sector, and worldwide via energy, emission, sustainability dimensions have great importance especially for Environment & Sustainability Managers.

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

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
Six-monthly or more frequently	Board or individual/sub-set of the Board or committee appointed by the Board	Risks are assessed at both country-level (Turkey) and the local facility-level (for our plants across the country). As Turkey is in both Europe and Asia, they are also considered in risk and opportunity assessment. Beyond that Climate Change is a global issue, therefore important issues all over the world is considered in risk and opportunity assessment.	> 6 years	Key risks are reported bimonthly to the Early Determination of Risk Committee and, then, to the BoD. Key risks could include risks and opportunities (if any) related to climate change and climate change associated impacts.

CC2.1b**Please describe how your risk and opportunity identification processes are applied at both company and asset level**

(Please see the attached document for detailed identification process)

For effective management of risks and opportunities; Akenerji establishes systems and monitors actions to define and assess risks and opportunities that could impact the Company's targets. It ensures that they are managed according to the policies set by the Board of Directors.

At company level; in order to manage the risks and opportunities rises by the impacts of climate change, both global and national risks are defined, and responsibilities to manage them are shared among different levels of decision making and implementation bodies within Akenerji. Reputational risks and physical risks are of our company level risks.

The Akenerji Strategic Planning & Risk Management Dept. determines and evaluates the risks in accordance with Company risk procedure and limits, and in coordination with the Unit Risk Responsibles assigned for each unit. The Management prioritizes and monitors the risks in line with the Risk Appetite. While the risks are managed within the framework of Corporate Risk Management. Risk Management Committee was established in March 2015 to take quicker decisions and immediate actions due to the changing market conditions (more liquid and competitive). The Committee members are composed of the General Manager, Deputy General Mng., Assistant General Mng.s, Directors, and Strategic Planning and Risk Managers. The Committee convenes on a monthly basis, and it is ensured that the necessary actions are taken by discussing the risks that the company incurs/may incur in the changing market conditions.

At asset level: risks are assessed and followed up under 5 main headings: Reputational, Compliance, Strategic, Operational, Financial.

Risks associated with climate change are evaluated by related departments in its own risk registers. Risk registers of climate change such as risk of drought, flood and landslide are assessed in each power plant and from head quarters in a holistic approach.

CC2.1c**How do you prioritize the risks and opportunities identified?**

Risks and opportunities are defined within the framework of company's risk procedure. Risk procedure is reviewed, updated and published by Strategic Planning and Risk Management Department each year.

The risk/opportunity identification stage within the risk management process aims to identify a comprehensive list of risks/opportunities, including their root causes and their owners. The risks are documented on functional based risk registers within the company. Risk registers are reviewed and updated for new, revised and obsolete risks/opportunities under the supervision of Business Unit as a part of the identification stage.

During the risk identification stage, Risk Responsible identifies specific risks that would prevent their business units from achieving their stated objectives. Importance is placed on covering the risks related to the key assumptions for core business activities and the strategy. Risks at both the company level and asset

level are prioritized regarding net risk score (risk score is after current controls) which is the multiplication of net risk likelihood and impact value. Risks with net risk score higher than 15 are reported bimonthly to Early Determination of Risk Committee and Board of Directors. Early Determination of Risk Committee meets at least 4 times a year and independent Board members are of its members. In addition to this approach, those risks with a high impact value can be monitored more frequently even though the net risk score is lower than the determined threshold for reporting.

Each risk has its own risk response such as “accept”, “mitigate”, “avoid” or “transfer”. For the risks with the risk response “mitigate”, action plans and action dates are identified by the Unit Risk Responsible and the action plans are also monitored and reported to Risk Management Committee bimonthly by Strategic Planning and Risk Department.

*Please see the enclosed document for the rest of the answer.

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

As an energy generating firm climate change is deeply integrated into our business strategy to mitigate the negative both direct and indirect effects of climate change. Our strategies and outcomes of these processes are as follows:

Akenerji has a holistic approach for sustainability, where climate change has its share as a source of risk and opportunity. Within the framework of Akenerji's mission; risks and opportunities sourced from climate change, are integrated in the business strategy in several ways. Akenerji has a long term (10 years) strategy which is supported by short and middle term (5 years) targets and strategies. We invest in renewable energy, monitor our operational performance continuously and improve the points where efficiency is the least satisfactory.

Quality Project Team under HSEQ leads the efforts of ensuring that the business strategy is influenced by climate change within Akenerji. The team implements projects to monitor GHG emissions both on corporate level and installation level, leads CDP participation and prepares external and internal reports to senior management and relevant departments.

The Strategic Planning and Risk Department considers environmental and climate change concerns in determining the company's energy portfolio. For short-term, Akenerji is focused on energy-efficient production and maintaining a position of sustainability leadership in the sector.

For the long-term, Akenerji seeks to stay ahead of expected regulations, which may include a possible cap and trade system or carbon tax for Turkey. This primarily involves further developing renewable capacity and gaining greater sophistication for management under regulations.

Please find the key strategic priorities of our business influenced by climate change adaptation and mitigation activities:

a. Decreasing emissions and increasing operational efficiency: We do not have any coal thermal power plant. We have 1 Natural Gas Combined Cycled Power Plant, 7 Hydro and 1 Wind Power Plant. Akenerji seeks continuous improvement at all power plants to reduce costs and emissions. We closed the power plants with low energy and emission efficiency and invested in establishing a natural gas thermal power plant equipped with state of the art technology. For example; advanced technology control systems are used; its gas and steam turbines are able to run at the highest efficiency in their class. Besides; a team of experts continuously monitor the plant's chimney gas for carbon emissions data and keep it below thresholds mandated by EU environmental legislation. Therefore, the plant complies with the relevant EU Environmental Aquis beyond the Turkish Environmental legislation. We also took actions to increase the efficiency at HEPPs such as decreasing the friction and heat in the turbines.

b. Tapping the growing market for green energy: Influenced by current and expected future actions to climate change of both consumers and regulators, Akenerji diversified its generation portfolio significantly starting from 2005. In 2005, the company's installed capacity consisted of only thermal power plants. With the aim of portfolio diversification, currently 24% of total installed power comes from renewable sources, both hydro and wind. Another Hydropower Plant is under construction in Kemah-Erzincan, which will have 198 MW of installed capacity. Besides, we are investing to increase the installed capacity of our Wind Power Plant, Ayyıldız, by 88%. We also evaluate new investment opportunities in the renewable energy market.

c. Capturing financial incentives associated with green energy: Influenced by the emergence of the voluntary market for emissions reduction, Akenerji is a pioneer in Turkey regarding certification of emission reductions and emissions trading. Akenerji has been the first company to take part in the National Carbon Registry when it was first established in 2011 in Turkey. Ayyıldız has been registered in the Greenhouse Gas Reduction Project Register as the first project in the Register. Akenerji conducts carbon certification process for all its renewable energy projects. The company has been trading GS (Gold Standard) and VCS (Voluntary Carbon Standard) credits for several years, making it also possible for its customers to offset their own carbon emissions. Please see the attachment as an example for the use of Akenerji carbon credits on offsetting.

c. Stakeholder engagement, capacity building and increasing public and employee awareness: To pioneer the sustainability in Turkey. Every year, all employees of Akenerji have trainings on environmental sustainability, sustainable energy and climate change. Also, over the recent years, Akenerji has been trying to increase awareness among its customers about energy efficiency and sustainable energy consumption through informative booklets and brochures.

Through sustainability reports, and events such as "Stakeholder Analysis and Prioritization" workshop, we interact with our stakeholders and receive feedbacks from them in order to put Akenerji into sustainability track.

d. Environmental sustainability projects: These projects aim at decreasing the environmental footprint of Akenerji. They include decreasing the impact of our

hydroelectric projects with reservoirs on forests, recycling and reusing waste oil from power plants, phasing out some company cars that are used for commuting, and replacing them with service buses in order to decrease the company's Carbon footprint. And through the on-going Carbon Management Project, the company monitors, reports and discloses its CO2 emissions. Akenerji has received ISO 14001 certification with the power plants and its offices over the recent years.

Smart Electricity Solutions provided to our customers are of examples of indirect outcomes of our strategies. With Energy Efficiency Consultancy Services, we aim to decrease our customers' unit energy consumption. Thus, lowering the energy consumption, its cost and emissions. Enterprises can receive consultancy services for their facilities in order to increase efficiency and decrease electricity consumption.

Another solution for our customers is the installation of remote monitoring systems that allow them to monitor and manage their reactive energy consumption. Customers using this system avoid reactive energy consumption hence related monetary penalties and increase the efficiency of the use of electricity.

CC2.2b

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

CC2.2c

Does your company use an internal price on carbon?

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

CC2.2d

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

CC2.3

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

Direct engagement with policy makers
Trade associations
Other

CC2.3a

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

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Mandatory carbon reporting	Support with minor exceptions	Inline with the studies on National regulation regarding GHG emissions; a law put into force about Mandatory Carbon reporting in Turkey. As Akenerji, we supported the law with minor exceptions. According to law Carbon reporting became mandatory since 2015 and we fulfilled the requirements. The details of the implementation phase will be clarified until 2019 and the report mentioned above will be used as the base of implementation procedures.	We support the development of carbon cap & trade schemes and mandatory carbon reporting in Turkey. We are open to put our best effort and accumulated experiences to contribute to these developments. We believe that ensuring a satisfying technical capacity at all levels including governmental units and verifiers has a crucial importance. The price of carbon credits has also vital importance to run the system (market) successfully and effectively.

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 (Turkish Industry & Business Association)	Consistent	TÜSİAD is a voluntary based civil society organization established by Turkish industrialists and business owners in 1971 in order to represent the business world. TÜSİAD aims to contribute to the formation and development of a social order based on the adoption of the universal principles of human rights, freedom of thought, belief and action, a secular state of law, as well as the concepts of participatory democracy, a liberal economy, the rules and regulations of a competitive market economy and environmental sustainability.	All of TÜSİAD's work is essentially carried out through committees made up of TÜSİAD members. TÜSİAD's positions are formed through the work of 11 committees and, 36 working groups under the umbrella of these committees, and special purpose ad-hoc "task force" groups, all of which meet regularly. Akenerji, being a member of the Environment Working Group and also Energy Working Group, takes part in the formation of the association's position.
TÜREB (Turkish Wind Energy Association, RESSİAD (Wind Power and Hydropower Plants Businessmen's Association, HESİAD (Hydro energy Association)	Consistent	These associations are for the companies generating energy from wind and hydropower and aims to foster the development of renewable energy generation. Regulations about renewable energy, tariffs are of the concerns of this association.	We are member of these associations, we can rise any point relevant to the concerns of these associations, debate and also convey it to policy makers

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

Raising Awareness of Local Communities

In locations where Akenerji power plants operate, we aim to raise awareness and provide information to local communities about our operations. Through our video training on clean electricity generation via hydropower plants, environmental and OHS regulations, we inform contractors, visitors, or interns who come to visit our power plants.

Since 2013, a total of 3,914 students and 229 teachers were given informative presentations to local people where we operate. For the sake of informing the local communities living where the HEPPs are, HEPP informative presentations also including how clean energy is generated via Hydropower Plants were realized.

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?

Overall Climate Change Strategy is executed and integrated into our overall strategy by Akenerji Management Committee with the approval of Board of Directors which has the top level responsibility in Akenerji's overall sustainability. The activities are developed and executed by the approval of the Board of Directors, based on company policies and strategical decisions on corporate sustainability.

As an electricity generating company in Turkey; the particular policy making and regulating authorities relevant with our business and climate change strategies are Ministry of Energy and Natural Resources, Energy Market Regulatory Authority (EPDK), Ministry of Environment and Urbanization. Therefore, for Direct Activities; we are frequently in touch with these policy makers and convey our propositions or feedbacks. Supporting the development of renewable energy generation, development on cap and trade schemes, mandatory carbon reporting are some of these examples also mentioned above. Top management of Akenerji and experts from relevant departments are attending the meetings held by decision making authorities and/or sending their opinions where necessary.

For indirect activities; Akenerji is a member of diversified business and sectoral associations. TUSIAD (Turkish Industry & Business Association, TÜREB (Turkish Wind Energy Association, RESSIAD (Wind Power and Hydropower Plants Businessmen's Association, HESIAD (Hydro energy Association) are the most active ones to convey sectoral or industrial opinions to policy makers. Top management of Akenerji and experts from relevant departments are attending the meetings held by these associations and/or sending their opinions where necessary. Other associations and institutions Akenerji is member of and participates to their actions and activities are as follows:

- World Energy Council Turkish National Committee (DEK-TMK)
- Association of Electricity Distribution Services (ELDER)
- Electricity Producers Association (EÜD)
- Energy Traders Association (ETD)
- Petroleum Platform Association (PETFORM)
- Sabancı University İstanbul International Center for Energy and Climate (IICEC)
- Association of Turkish Electricity Industry (TESAB)
- International Investors Association (YASED)

CC2.3g

Please explain why you do not engage with policy makers

Further Information

Attachments

[https://www.cdp.net/sites/2017/12/21112/Climate Change 2017/Shared Documents/Attachments/ClimateChange2017/CC2.Strategy/Akenerji CDP CC 2.1.b Answer of CC Risk_Opportunity Identification.docx](https://www.cdp.net/sites/2017/12/21112/Climate%20Change%202017/Shared%20Documents/Attachments/ClimateChange2017/CC2.Strategy/Akenerji%20CDP%20CC%202.1.b%20Answer%20of%20CC%20Risk%20Opportunity%20Identification.docx)
[https://www.cdp.net/sites/2017/12/21112/Climate Change 2017/Shared Documents/Attachments/ClimateChange2017/CC2.Strategy/Akenerji CDP CC2.1c Prioritization of Risks and Opportunities.docx](https://www.cdp.net/sites/2017/12/21112/Climate%20Change%202017/Shared%20Documents/Attachments/ClimateChange2017/CC2.Strategy/Akenerji%20CDP%20CC2.1c%20Prioritization%20of%20Risks%20and%20Opportunities.docx)

Page: CC3. Targets and Initiatives

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?

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
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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	99%	5%	Metric tonnes CO2e per megawatt hour (MWh)*	2015	0.4095	2016	No, and we do not anticipate setting one in the next 2 years	This is our intensity target from CDP CC 2016 reporting. We are an electricity generation company which operates both thermal and renewable power plants. Our 99% of our overall emissions are sourced from Scope 1 emissions from thermal power plants and this intensity figure target is given to reduce these emissions. Our target is to make this intensity target 0.3890 tCO2e/MWh or less in 2016.

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	3.81	No change	0	Our target was to decrease the emission intensity of Erzin NGCCPP by 5% by decreasing 50,642 tCO2e. This leads 3.81% decrease from our overall Scope 1+2. Our target is to decrease the emission intensity to 0.3307 tCO2e/MWh in Erzin NGCCPP's emissions.

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
RE3	Electricity production	2016	50077	1.35%	2017	2%	Our target is to increase our electricity generation from wind power, therefore we invested in Ayyıldız WPP and increased its capacity. As a result of this, our target is to increase our electricity generation from wind power by 48% until the end of 2017.
RE2	Other: Installed Capacity of Renewable Energy Generation	2015	388	30%	2020	36%	388 MW of our installed capacity is from renewable energy generation and we are investing on both hydro and wind power plants. We aim to increase our renewable energy generation installed capacity to 599,2 MW. 198 MW of increase will come from Kemah HEPP and 13,2 MW increase will come from Ayyıldız WPP.

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
Int1	100%	100%	Our target was to decrease the emission intensity of Erzin NGCCPP by 5% by decreasing 50,642 tCO ₂ e. This leads 3.81% decrease from our overall Scope 1+2. We achieve to decrease the emission intensity to 0.3307 tCO ₂ e/MWh which means 19.2% decrease in Erzin NGCCPP's emissions.

ID	% complete (time)	% complete (emissions or renewable energy)	Comment
RE1	0%	0%	This is a target given and started this year.
RE2	20%	0%	We invested in Ayyıldız WPP and increased its capacity by 88%. Meantime, Akocak HEPP is sold. For that reason; renewable electricity generation ratio is not increased at the first year.

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
Product	Carbon-neutral Certifications: We offer internationally-approved emission reduction certifications to customers through our renewable energy investments. These certifications enable companies to become carbon-neutral in terms of the electricity they consume. This solution helps environmentally responsive companies that would like to mitigate or diminish to “zero” carbon footprints resulting from electricity consumption and other processes.	Low carbon product	Other: Verified Carbon Standard (VCS and Gold Standard (GS)	0.01%	Less than or equal to 10%	We register certificates from the energy we generate from renewable sources. They are our low carbon products. We have been the first company to register to the National Carbon Registry (2011) that was launched by the Ministry of Environment and Urbanization to establish voluntary carbon markets and register ongoing projects. They are registered by Verified Carbon Standard (VCS and Gold Standard (GS).

CC3.3

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

Yes

CC3.3a

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

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation		
To be implemented*		
Implementation commenced*		
Implemented*	1	71456
Not to be implemented		

CC3.3b

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

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	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
Process emissions reductions	We are continuously trying to increase our energy and emission efficiency. For this purpose we installed Operational Flexibility Software for Gas Turbines in 2016 at our Erzin NGCCPP. By the help of opflex software all gas, IGV and IBH valves are moved in coordination to decrease the emissions.	71456	Scope 1	Voluntary	2000000	20000	<1 year	Ongoing	We achieved to decrease 71,456 tCO2e of GHG emissions at our Erzin NGCCPP by our emission reduction efforts and investments.

CC3.3c

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

Method	Comment
Financial optimization calculations	Many emissions reduction activities, especially those related to energy efficiency, (for example, our automatic lighting controls) can have a strong ROI.
Compliance with regulatory requirements/standards	There are increasing numbers of regulations that Akenerji needs to comply with. We have to comply with current MRV Regulation in Turkey (enforced in 2014), which involves monitoring and reporting GHG emissions from our thermal power plant. Also, we are required by Turkish law to recycle waste oil from our power plants.
Employee engagement	Akenerji runs capacity building and awareness raising activities among the employees regarding environmental sustainability, climate change, energy efficiency and energy efficient office practices among all employees every year.
Internal incentives/recognition programs	Monetary based performance evaluations are available for relevant employees in charge of project development, project implementation and corporate environmental sustainability. Also, environmental improvement suggestion system is implemented among the employees, which allow them to have monetary awards for suggestions for increasing environmental performance of the company.
Dedicated budget for energy efficiency	Main source of both our overall and Scope 1 emissions are our Erzin NGCCPP. As Akenerji, we put great importance on energy and emission reduction activities. Therefore, we invested in establishing a state of art high efficient natural gas combined cycle power plant named as Erzin NGCCPP. Even though it has a state of art technology, we are continuously working to improve the efficiency.

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	42, 44	https://www.cdp.net/sites/2017/12/21112/Climate Change 2017/Shared Documents/Attachments/CC4.1/FR_Nihai_Fin_Eng.pdf	We put importance on Carbon Management. Therefore; we share Carbon Management performance in our Annual Report starting from page 42 and Sustainability starting from page 44.
In voluntary communications	Complete	47, 79	https://www.cdp.net/sites/2017/12/21112/Climate Change 2017/Shared Documents/Attachments/CC4.1/AKENERJI_ING_WEB_FINAL_2404.pdf	We share our Climate Change Management and Performance starting from page 47 and 79 at our Sustainability Report.
In voluntary communications	Complete	1-6	https://www.cdp.net/sites/2017/12/21112/Climate Change 2017/Shared Documents/Attachments/CC4.1/AKENERJI_NEWS about CDP and ENVIRONMENT.pdf	Akenerji put great importance on Climate Change Adaptation and Mitigation Activities and in parallel to that Akenerji puts effort on communication on topic. Please find the relevant press releases about Akenerji from the enclosed pdf file. You can find the news about Akenerji's Climate Change Adaptation and Mitigation Activities.

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
Carbon taxes	Turkey develops national emission reduction plan within the framework of EU-ETS Acquis approximation. If Turkey commits to make mitigation, carbon taxes may be introduced to energy intensive	Increased operational cost	3 to 6 years	Direct	Likely	Medium-high	If it is assumed that a carbon tax of 1 US\$/tCO ₂ e will be introduced to the Turkish market, total tax associated with overall emissions of Akenerji will be around US\$	Akenerji develops middle and long term plans for energy generation with reduced GHG emissions per kWh of energy produced. The strategy involves implementing high efficiency gas turbines, phasing	Until to the end of 2016, Akenerji has invested a total of US\$ 700,000,000 in renewable energy production. This includes high technology Gas Turbines with emission limits already satisfying

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	sector at the first attempt and this could adversely affect the operational costs of our thermal power plant.						950,103. Therefore, the estimated negative financial impact could be this value.	out low efficiency/old natural gas power plants and continued investment in renewable energy production.	the European standards. However, estimations about middle and long term costs of management and our investment plan could not be shared here.
International agreements	Turkey develops national emission reduction plan within the framework of EU-ETS Acquis approximation. If Turkey commits to make mitigation at COP meetings and takes measures to limit the emissions from industry, reduction targets may be enforced with a cap system for each plant.	Increased capital cost	3 to 6 years	Direct	Likely	Medium-high	If it is assumed that a carbon tax of 1 US\$/tCO ₂ e will be introduced to the Turkish market, total tax associated with overall emissions of Akenerji will be around US\$ 950,103. Therefore, the estimated negative financial impact could be this value.	Akenerji closely monitors regulatory changes and seeks ways for adaption before any new regulations get into force. Akenerji develops middle and long term plans for energy generation with reduced GHG emissions per kWh of energy produced. The strategy involves implementing high efficiency gas turbines, phasing out low efficiency/old natural gas power plants and investing in renewable energy.	It is not possible to make any calculations before there is any change in the regulations. However, so far total investment cost of high efficient Natural Gas Power Plant project costed approximately US\$ 900,000,000, and Akenerji has invested US\$ 700,000,000 in renewable energy.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Emission reporting obligations	Inline with the studies on National regulation regarding GHG emissions; a law put into force about Mandatory Carbon reporting in Turkey. (Turkish Regulation for Monitoring, Reporting and Verification of Greenhouse Gas Emissions – official journal 28.12.2014 dated and 29219 numbered.)	Increased operational cost	1 to 3 years	Direct	Virtually certain	Low	As a negative financial impact; failure to meet obligations under the Regulation for Monitoring, Reporting and Verification of Greenhouse Gas Emissions could result in a penalty of up to TL 98,198 annually per applicable facility according to the regulation.	According to law Carbon reporting became mandatory since 2015 and we fulfilled the requirements. The details of the implementation phase will be clarified until 2019 and the report mentioned above will be used as the base of implementation procedures. We prepared our report properly in time and submitted to the Ministry.	The cost of the required emission monitoring system has been US\$ 814,150 for Erzin power plant due to installed GHG and exhaust gas monitoring systems

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	Decrease in	Reduction/disruption	Up to 1	Direct	More likely	Medium-	Negative	Energy is a	We prioritized

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
mean (average) precipitation	average precipitation may cause reduced access to water for electricity generation from the hydropower plants. Consequently, this will affect our renewable energy generation targets, costs and the overall energy production and costs.	in production capacity	year		than not	high	financial implications may change according to the magnitude of the drought, so the effect can not be clearly calculated. However, the revenue loss due to drought for the first 3 months of 2014 was roughly US\$ 38,000,000 when it was compared to the same period of the previous year. (Calculation is based on the differences in hydro generation values for the first three months of 2013 and 2014. The average market price for the first three months is used in the calculation.)	vital source for the development of our country and to maintain the modern life style of human beings. Our prior goal is to provide continuous power supply on that purpose. For that reason, we diversify the electricity generation sources by investing in a state of art natural gas combined cycle power plant, which are considered as base load plants for security of supply. Besides, it provides electricity in high emission efficiency according to most of the	to generate electricity from our renewable energy sources. To provide base load capacity we did not invest on coal plants. Instead of that; approximately US\$ 900,000,000 has been invested to establish our state of art Natural Gas Combined Cycle Power Plant to generate high emission efficiency.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								natural gas power plants.	
Change in mean (average) temperature	If summer heat is higher than expected, this would likely increase electricity demand. In such a case Akenerji may need to buy additional electricity from the market to make up for any shortfall in generation. In addition to that we could increase the energy generated from thermal power plants will increase our overall emissions.	Increased operational cost	Up to 1 year	Direct	Likely	Medium-high	If the difference between the market price and the contract of the customer is 5 TL/MWh, then costs would rise by TL 6,500,000. This figure could be used for estimated negative financial impact. (Typically, a 1 degree increase in the temperature results in an 11,000 MWh increase in the daily demand for the summer months.)	This can be overcome by planning the generation based on the weather forecasts and by diversifying the portfolio by investing in gas, hydro and wind in order to decrease the fuel price risk.	Akenerji spends roughly US\$ 15,000 per year on weather reports. Besides employees of Akenerji spends their working days on this purpose.
Other physical climate drivers	Storm, strong wind and strong rain due to climate change may have impacts on all power plants, particularly to	Increased capital cost	Up to 1 year	Direct	Likely	Medium-high	Financial implications have a broad scale of possibilities depending on the impact. Therefore, both	We take precautions by evaluating weather forecasts and maximum flow expectations. Besides;	If we consider the annual average electricity generated by HEPPs of Akenerji, the revenue from

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	hydropower plants. It can damage power generation units and distribution lines of Hydroelectric Power Plants (HEPPs)						the impact and its financial negative implication can differ according to the magnitude of the damage. As of the end of year 2016; Akenerji's Buildings, machinery and equipment, motor vehicles, furniture and fixtures and construction in progress for Erzin NGCCPP have a total value of TL 2,008,712,578. Besides; Akenerji's 2016 year-end market value is TL 619,789,400 (calculated based on the share prices). Therefore, we can assume that the maximum financial implications could go to that extend.	continuous maintenance and repairments are driven in the plants.	the daily electricity generation is roughly TL 316,520 according to the average market spot price of 2016. Therefore, we can assume that if electricity generation at all HEPPs stop for 1 day, that means a loss of TL 316,520.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in precipitation extremes and droughts	There might be flash floods due to sudden melting of snow in mountains or strong rain. Access to operational centers (regulators and valves) may delay which may end with delayed management and increased damage particularly for the Hydroelectric Power Plants (HEPPs) facilities.	Increased capital cost	Up to 1 year	Direct	About as likely as not	Medium	Financial implications have a broad scale of possibilities depending on the impact. Therefore, both the impact and its financial negative implication can differ according to the magnitude of the damage. As of the end of year 2016; Akenerji's Buildings, machinery and equipment, motor vehicles, furniture and fixtures and construction in progress for Erzin NGCCPP have a total value of TL 2,008,712,578. Besides; Akenerji's 2016 year-end market value is TL 619,789,400 (calculated based on the	We take precautions by evaluating weather forecasts and maximum flow expectations. We have our Natural Disaster Plans. In addition to them we took some solid actions to be prevented against the detrimental effects of floods especially at our HEPPs. Examples of these actions are as follows; i. Activating the regulatory pool at the HEPP ii. Building a bypass system to direct the excess water to the river basin.	Until now, Akenerji has invested US\$ 700,000,000 in renewable energy. The investment done to be prevented from detrimental effects of the floods are in that figure, however it is not possible to separate the relevant amount spend on that purpose.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
							share prices). Therefore, we can assume that the maximum financial implications could go to that extend.		
Other physical climate drivers	Akenerji also operates a wind power plant. Storms and strong winds may damage Ayyıldız WPP. Damage in power generation units and distribution lines of Ayyıldız Wind Power Plant may occur.	Increased capital cost	Up to 1 year	Direct	About as likely as not	Low	Financial implications have a broad scale of possibilities depending on the impact. Therefore, both the impact and its financial negative implication can differ according to the magnitude of the damage. As of the end of year 2016;. Besides; Akenerji's 2016 year-end market value is TL 619,789,400 (calculated based on the share prices). Therefore, we can assume that the maximum	i. Akenerji receives weather forecasts for Ayyıldız Power Plant from external consultancies in order to manage the risks ii. In case of wind storm, operation may cease in order to protect the equipment	i. The annual cost of forecast service, for the region where Ayyıldız WPP operates, is approximately 3,000 US\$/year. ii. An opportunity cost occurs during the time when there is no electricity generation. If we consider the annual average electricity generation by Ayyıldız WPP, the revenue from the daily electricity generation is roughly TL 19,300 according to the average market

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
							financial implications could go to that extend.		spot price of 2016. Therefore, we can assume that if electricity generation at Ayyıldız WPP stops for 1 day, that means a loss of TL 19,300.

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
Fluctuating socio-economic conditions	Economic slowdown can cause reduced demand for electricity, which is our product. Consumers with in low economic standards or consumers	Reduced demand for goods/services	3 to 6 years	Indirect (Client)	About as likely as not	Medium-high	Akenerji not only generates electricity but also trades electricity. Its total revenue from both items are roughly 1.42 Billion TL for 2016. As negative	Management of this risk driver is not under the direct control of Akenerji, we manage it by closely monitoring the economic developments and making our plans	Akenerji engages directly and indirectly with policy makers to convey its accumulated experiences and evaluations. Therefore, the cost of management is the working hours spend on this purpose particularly by our Top Management; Strategic Planning and Risk

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	who has difficulties in affording their energy needs could decrease their demands.						financial impact; if we assume that its revenue decreases 1% due to decrease in demand, this means TL 14,200,000 lost in revenue. Therefore, we can say that change in the demand has a considerable effect on Akenerji.	accordingly. In addition to them, we engage directly and indirectly with policy makers to convey our accumulated experiences and evaluations.	Management Directorate; Health, Safety, Environment and Quality Directorate, and Energy Trade Directorate. In addition to that, Akenerji is member of many associations and NGOs to engage indirectly with policy makers. The overall roughly cost as membership fees for these organizations is US\$ 20,000.
Reputation	According to the shareholder structure of Akenerji; main investors are Akkök Group and ČEZ a.s. Akkök Group is a well-known holding in Turkey with high brand value and ČEZ a.s. is also a global brand head quartered in	Reduced stock price (market valuation)	Up to 1 year	Direct	Very unlikely	High	Akenerji's 2016 year-end market value is 619,789,400 TL (calculated based on the share prices). If there will be a 10 % decrease in its market value, it will lead a 61,978,940 TL.	According to its vision; Akenerji is willing to be one of the pioneering companies in the framework of climate change mitigation and adaptation efforts in Turkey. Therefore, it took may leading steps in Turkey such as; establishing a	The cost consists of many items such as the wages of the relevant employees, consultancy fees, services taken on that purposes, PR budget, community investment budget. It is not possible to say the exact cost of management due to confidentiality policy and the difficulty to separate the relevant budget items for these services. However, we can provide an example with the help of a publicly

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>Czech Republic. Both parent companies are willing to pioneer in climate change mitigation and adaptation activities. In addition to that, Akenerji has also shares in free-float. Therefore, realization of any climate change related risk may affect the reputation and market value of the company and its main investors as well.</p>							<p>Sustainability Management Team, Sustainability Reporting in GRI Standards, first company to take part in the National Carbon Registry, responding to CDP Turkey Climate Change Programme, first energy company responding to CDP Turkey Water Programme, etc. Risks and opportunities relevant to climate change are evaluated by diversified methods as mentioned in the related part of this questionnaire.</p>	<p>disclosed figure. The community investment in 2016 is 1.1 Mio TL.</p>

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

CC5.1e

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

CC5.1f

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

Further Information

Page: CC6. Climate Change Opportunities

CC6.1

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

Opportunities driven by changes in regulation

Opportunities driven by changes in physical climate parameters

Opportunities driven by changes in other climate-related developments

CC6.1a

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

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
International agreements	Turkey develops national emission reduction plan within the framework of EU-ETS Acquis approximation. If Turkey commits to make mitigation, sectoral emission reduction targets may be enforced with a cap system for each plant. Akenerji is in the Carbon registry. Therefore in this case; existing and future carbon assets (credits) developed from renewable energy sources could be a source of extra income.	Increased demand for existing products/services	3 to 6 years	Direct	Likely	Low-medium	In case of realization of the opportunity, an additional income will be generated for Akenerji as positive financial implication. According to feasibility reports, the renewable power plants could produce approximately 70,500 tCO _{2e} Gold Standard certificates, 492,000 tCO _{2e} VCS certificates and 126,600 tCO _{2e} Social	We have been the first company to register to the National Carbon Registry (2011) that was launched by the Ministry of Environment and Urbanization to establish voluntary carbon markets and register ongoing projects. They are registered by Verified Carbon Standard (VCS and Gold	Until to the end of 2016, Akenerji invested US\$ 700,000,000 in renewable energy generation. Management cost includes the verification and the issuance costs for the certificates, which amounts to a total of EUR 160,700 approximately until to the end of 2016. The issuance and verification costs of 2016 is roughly

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
							Carbon certificates. The revenue from the sale of renewable certificates could total approximately EUR 200,000 (assuming 0,22 Euro for VCS and Social Carbon, 0,9 Euro for GS) The amount could be clearer, when the carbon price in the new market becomes clearer.	Standard (GS). The carbon assets are sold to customers for offsetting their emissions.	EUR 7,700.
Cap and trade schemes	Within the framework of approximation to EU Aquis, Turkey considers integrating to EU ETS system. If so, Akenerji is already in the Carbon registry and it will have carbon allowances considering power generation from	Increased demand for existing products/services	3 to 6 years	Direct	Likely	Low-medium	In case of realization of the opportunity, an additional income will be generated for Akenerji as positive financial implication. According to feasibility	We have been the first company to register to the National Carbon Registry (2011) that was launched by the Ministry of Environment and	Until to the end of 2016, Akenerji invested US\$ 700,000,000 in renewable energy generation. Management cost includes the verification and the

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	renewable sources and high efficient thermal plants.						reports, the renewable power plants could produce approximately 70,500 tCO2e Gold Standard certificates, 492,000 tCO2e VCS certificates and 126,600 tCO2e Social Carbon certificates. The revenue from the sale of renewable certificates could total approximately EUR 200,000 (assuming 0,22 Euro for VCS and Social Carbon, 0,9 Euro for GS) The amount could be clearer, when the carbon price in the new market becomes	Urbanization to establish voluntary carbon markets and register ongoing projects. They are registered by Verified Carbon Standard (VCS and Gold Standard (GS). The carbon assets are sold to customers for offsetting their emissions.	issuance costs for the certificates, which amounts to a total of EUR 160,700 approximately until to the end of 2016. The issuance and verification costs of 2016 is roughly EUR 7,700.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Carbon taxes	When a carbon law is enacted, the renewable power plants in the portfolio will have a cost advantage compared to thermal power plants and, also, emissions reduction certificates from the renewable power plants can be sold in national/international carbon markets at a more valued price than today.	Reduced operational costs	3 to 6 years	Direct	Likely	Medium	clearer. With its renewable portfolio, Akenerji currently avoids about 690,000 tCO2e emissions. (Calculated by using the feasibility annual generation values of the renewable power plants). If this energy from renewable sources were generated by using thermal sources instead, then Akenerji would pay about US\$ 690,000 of additional carbon tax, if US\$ 1 of carbon tax is introduced. This figure	We have been the first company to register to the National Carbon Registry (2011) that was launched by the Ministry of Environment and Urbanization to establish voluntary carbon markets and register ongoing projects. They are registered by Verified Carbon Standard (VCS and Gold Standard (GS). The carbon assets are sold to customers for offsetting	Until to the end of 2016, Akenerji invested US\$ 700,000,000 in renewable energy generation. Management cost includes the verification and the issuance costs for the certificates, which amounts to a total of EUR 160,700 approximately until to the end of 2016. The issuance and verification costs of 2016 is roughly EUR 7,700.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
							could be considered as positive financial implication.	their emissions. Besides we invest in renewable energy generation.	

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	If summer temperature increases by 1 degree, this increases the daily electricity demand 2%. Akenerji generates more electricity to meet the increased demand. With the help of its renewable energy portfolio,	Increased demand for existing products/services	3 to 6 years	Direct	Likely	Medium	Akenerji not only generates electricity but also trades electricity. Its total revenue from both items are roughly 1.42 Billion TL for 2016. If summer temperature increases by 1 degree, this increases the daily electricity demand 2%. If we assume that its	Akenerji invested in renewable energy generation. Planning for generation using demand forecast modelling and weather forecasts.	Our demand forecast model used in generation planning was developed in-house, so there is no additional cost for demand modelling. Also Akenerji spends roughly US\$ 15,000 per year on weather reports.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	it is also possible for Akenerji to generate the extra demand at low cost.						revenue increases 2% due to increase in demand, this will lead to positive financial implication of TL 28,000,000 additional revenue. Therefore, we can say that change in the demand has a considerable effect on Akenerji.		
Change in temperature extremes	Change in temperature extremes due to global warming causes electricity demand fluctuation. If summer temperature increases by 1degree, this increases the daily electricity demand 2%.	Increased demand for existing products/services	1 to 3 years	Direct	Likely	Medium	Akenerji not only generates electricity but also trades electricity. Its total revenue from both items are roughly 1.42 Billion TL for 2016. If summer temperature increases by 1 degree, this increases the daily electricity demand 2%. If we assume that its revenue increases 2% due to increase in demand, this will lead to positive	Akenerji invested in renewable energy generation. This is managed by using demand forecast modelling and flexible portfolio management.	Akenerji spends roughly US\$ 15,000 per year on weather reports.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
							financial implication of TL 28,000,000 additional revenue. Therefore, we can say that change in the demand has a considerable effect on Akenerji.		

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	Day by day the effects of Climate Change becomes more clear and obvious in our daily life. In parallel to this, awareness is raising. As a consequence, consumers	Increased demand for existing products/services	1 to 3 years	Direct	Very likely	Medium	In case of realization of the opportunity, an additional income will be generated for Akenerji as positive financial implication. According to feasibility reports, the renewable power plants could produce	Akenerji has invested in renewable energy generation and 24% of its installed capacity is from renewable energy sources. By providing carbon neutral electricity to	Management cost includes the verification and the issuance costs for the certificates, which amounts to a total of EUR 160,700 approximately until the end of 2016. The

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	started to prefer cleaner energy sources.						<p>approximately 70,500 tCO₂e Gold Standard certificates, 492,000 tCO₂e VCS certificates and 126,600 tCO₂e Social Carbon certificates. The revenue from the sale of renewable certificates could total approximately EUR 200,000 (assuming 0,22 Euro for VCS and Social Carbon, 0,9 Euro for GS) The amount could be clearer, when the carbon price in the new market becomes clearer.</p>	<p>requesting customers. Carbon neutral electricity involves the sale of reduction certificates in order to neutralize the customer's emissions from their electricity consumption.</p>	<p>issuance and verification costs of 2016 is roughly EUR 7,700.</p>

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

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

CC6.1f

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

Further Information

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

Page: CC7. Emissions Methodology

CC7.1

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

Scope	Base year	Base year emissions (metric tonnes CO2e)
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Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Fri 01 Jan 2016 - Sat 31 Dec 2016	934839
Scope 2 (location-based)	Fri 01 Jan 2016 - Sat 31 Dec 2016	14820
Scope 2 (market-based)	Fri 01 Jan 2016 - Sat 31 Dec 2016	

CC7.2

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

Please select the published methodologies that you use
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
IPCC Guidelines for National Greenhouse Gas Inventories, 2006
ISO 14064-1

CC7.2a

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

CC7.3

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

Gas	Reference
CO2	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	IPCC Fourth Assessment Report (AR4 - 100 year)

CC7.4

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

Fuel/Material/Energy	Emission Factor	Unit	Reference
Natural gas	56152	metric tonnes CO2e per GJ	2006 IPCC Guidelines for National Greenhouse Gas Inventories
Diesel/Gas oil	75946.8	metric tonnes CO2e per GJ	2006 IPCC Guidelines for National Greenhouse Gas Inventories
Electricity	0.44467	metric tonnes CO2e per MWh	International Energy Agency, CO2 EMISSIONS FROM FUEL COMBUSTION
Motor gasoline	70590.9	metric tonnes CO2e per GJ	2006 IPCC Guidelines for National Greenhouse Gas Inventories
Distillate fuel oil No 2	77649	metric tonnes CO2e per GJ	2006 IPCC Guidelines for National Greenhouse Gas Inventories

Further Information

CC8.1

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

Operational control

CC8.2

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

934839

CC8.3

Please describe your approach to reporting Scope 2 emissions

Scope 2, location-based	Scope 2, market-based	Comment
We are reporting a Scope 2, location-based figure	We have no operations where we are able to access electricity supplier emissions factors or residual emissions factors and are unable to report a Scope 2, market-based figure	We use electricity from the grid, other than the electricity we generate.

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
14820		We purchase and consume electricity from the grid.

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
Fugitive refrigerant GHGs from cooling	Emissions are relevant but not	No emissions excluded	Emissions are not relevant	We included the refrigerant GHGs from cooling systems at our Erzin NGCCPP. Emissions sourcing from refrigerants of cooling systems at our other premises are

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
systems.	yet calculated			excluded for three reasons: (1) they are not likely to be a significant source of total scope 1 emissions (less than 1%), (2) there is no reliable method for accurate activity data, and (3) estimation of this source is considered inaccurate.
Fugitive GHG emissions from fire extinguishers.	Emissions are relevant but not yet calculated	No emissions excluded	Emissions are not relevant	We included the fugitive GHGs from fire extinguishers at our Erzin NGCCPP. Emissions sourcing from fire extinguishers at our other premises are excluded particularly for two reasons: (1) they are not likely to be a significant source of total scope 1 emissions (less than 1%), (2) there is inadequate work and budget source to gather.

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 5% but less than or equal to 10%	Assumptions Metering/ Measurement Constraints Sampling	Calculated with GHG Protocol Uncertainty analysis calculation tool. Includes Emission factor uncertainties.
Scope 2 (location-based)	More than 5% but less than or equal to 10%	Data Gaps Assumptions Extrapolation	Calculated with GHG Protocol Uncertainty analysis calculation tool. Includes Emission factor uncertainties.

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
		Metering/ Measurement Constraints	
Scope 2 (market-based)	Less than or equal to 2%	No Sources of Uncertainty	The electricity energy used is taken from the grid therefore it is stated in location based Scope 2 and the market based Scope 2 left blank.

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	https://www.cdp.net/sites/2017/12/21112/Climate Change 2017/Shared Documents/Attachments/CC8.6a/ISO-	1	ISO14064-3	99

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 (%)
			14064_Verification_Statement_2.pdf			

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	https://www.cdp.net/sites/2017/12/21112/Climate Change 2017/Shared Documents/Attachments/CC8.7a/ISO-14064_Verification_Statement_2.pdf	1	ISO14064-3	91

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
Renewable energy products	In 2016, renewable power plants of Akenerji sold 50,200 tCO ₂ e of Gold Standard certificates and 16,194 tCO ₂ e of VCS certificates.
Other: GHG emission monitoring plan	A GHG emissions monitoring plan has been prepared and submitted to the Ministry of Environment within the framework of MRV regulation for our only Thermal power plant which is Erzin NGCCPP. Monitoring plan is verified by the Ministry and the and Mandatory Carbon Report is prepared inline with this plan. Mandatory Carbon Report is ready to be verified by verifiers authorized by the Ministry.

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 2016 - 31 Dec 2016)

CC9.1

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

No

CC9.1a

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

Country/Region	Scope 1 metric tonnes CO2e

CC9.2

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

By GHG type
By activity

CC9.2a

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

Business division	Scope 1 emissions (metric tonnes CO2e)
-------------------	--

CC9.2b

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

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
----------	--	----------	-----------

CC9.2c

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

GHG type	Scope 1 emissions (metric tonnes CO2e)
CO2	933968
CH4	349.77
N2O	521.48

CC9.2d

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

Activity	Scope 1 emissions (metric tonnes CO2e)
Combustion at power plants	934679
Combustion at offices	81.1
Vehicle-based combustion	244.25
Fugitive Gases	79.23

Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2016 - 31 Dec 2016)

CC10.1

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

No

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)
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CC10.2

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

By business division

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)
Electricity use at Plants (purchased from 3rd party)	14656.02	
Electricity use in offices (purchase from 3rd parties)	163.63	

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)
----------	--	--

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)
----------	--	--

Further Information

Page: CC11. Energy

CC11.1

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

More than 75% but less than or equal to 80%

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

CC11.3

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

5149217

CC11.3a

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

Fuels	MWh
Natural gas	5148176
Diesel/Gas oil	897.13
Motor gasoline	127.94
Distillate fuel oil No 4	15.04

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
No purchases or generation of low carbon electricity, heat, steam or cooling accounted with a low carbon emissions factor	0	0	We have no Scope-2 market-based figure.

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
33477	32142	3697678	821748	1335	Total electricity consumed by Akenerji is 33,477 MWh and 32,142 MWh of this is purchased. Total electricity produced by Akenerji is 3,697,678 MWh and 821,748 MWh of it is produced from renewable energy sources.

Further Information

CC12.1

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

Decreased

CC12.1a

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

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Emissions reduction activities	7.52	Decrease	Overall emissions of Akenerji decreased by 39.9% in 2016 in comparison to 2015. Akenerji puts its best effort to attain energy and emission efficiency. As a result of its emission reduction activities, 71,456 tCO ₂ e, which is 7.52% of overall emissions, is reduced. The emission reduction activities are investments in renewable energy power plants, efficiency improvement activities, prioritization of production of renewable energy, efficient use of energy, behavioural change. Akenerji invested in softwares to improve energy generation and emission efficiency.
Divestment	0.02	Decrease	Akenerji sold its Akocak HEPP in 2016 and the emissions sourced from Akocak were 193.6 tCO ₂ e in 2015. Therefor we could assume that 0.02% of the decrease is sourced from the divestment of Akocak.
Acquisitions	0	No change	No acquisitions are made in 2016.
Mergers	0	No change	No mergers are made in 2016.
Change in output	22.79	Decrease	One of the factors that determines the amount of electricity generated by Akenerji is demand. Owing to the decrease in demand in 2016, electricity generated decreased by 842,819 MWh. Therefore, decrease of 216,559 tCO ₂ e, which means 22.79% of overall emissions, are resulted due to decrease in electricity generation.
Change in methodology	9.59	Decrease	As a result of environmental consciousness of Akenerji, Akenerji started to have its emissions sourced from Erzin NGCCPP verified by third party in 2016. Erzin NGCCPP releases 98.4% of Akenerji's overall emissions. Therefore, 9.59% of the decrease, which is 91,121 tCO ₂ e, is resulted from the change in methodology.
Change in boundary	0.04	Increase	As a result of environmental consciousness of Akenerji, Akenerji started to have its emissions sourced from Erzin NGCCPP verified by third party in 2016. Erzin NGCCPP releases 98.4% of Akenerji's overall emissions. Additional sources of emissions were included to GHG Inventory during the verification process. These additional sources releases 407 tCO ₂ e of emissions at Erzin NGCCPP in 2016.

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Change in physical operating conditions	0	No change	No change is resulted from change in physical operating conditions.
Unidentified	0	No change	There is no unidentified reason for change.
Other	0	No change	There is no unidentified reason for change.

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
0.002	metric tonnes CO2e	471000000	Location-based	0.5	No change	Even though scales of economy is lost when electricity generation capacity is decreased due to low demand, emissions released per

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
						Turkish Lira revenue earned are remained almost the same with the help of emission reduction activities such as investments in renewable energy power plants, efficiency improvement activities, prioritization of production of renewable energy, efficient use of energy, behavioural change. PS: Metric denominator: Unit total revenue is TL 1.42 Billion and it is USD 471 Million. If we consider the intensity in TL, then there will be decrease by 9%. For that reason; we could consider that we improved our emission efficiency per revenue gained in TL. As we report in USD, it seems there is almost no change in intensity figure due to high devaluation in TL in 2016.

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
0.2568	metric tonnes CO2e	megawatt hour (MWh)	3697678	Location-based	11	Decrease	Emission released per MWh electricity generated is decreased by 11% with the help of emission reduction activities such as investments in renewable energy power plants, efficiency improvement activities, prioritization of production of renewable energy, efficient use of energy, behavioural change. It is a

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
							huge improvement for an important intensity figure.

Further Information

Page: CC13. Emissions Trading

CC13.1

Do you participate in any emissions trading schemes?

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

CC13.1a

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

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership

CC13.1b

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

Influenced by the emergence of the voluntary market for emissions reduction, Akenerji is a pioneer in Turkey regarding certification of emission reductions and emissions trading. Akenerji has been the first company to take part in the National Carbon Registry when it was first established in 2011 in Turkey. Ayyıldız has been registered in the Greenhouse Gas Reduction Project Register as the first project in the Register. Akenerji conducts carbon certification process for all its renewable energy projects. The company has been trading GS (Gold Standard) and VCS (Voluntary Carbon Standard) credits for several years, making it also possible for its customers to offset their own carbon emissions. Therefore, according to its mission and vision; Akenerji takes the necessary steps to pioneer at the cap and trade schemes. Akenerji not only prepares itself for this process but also puts efforts to help policy makers via direct or indirect interactions.

CC13.2

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

Yes

CC13.2a

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

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits canceled	Purpose, e.g. compliance
Credit origination	Wind	Ayyıldız WPP	Gold Standard	10200	10200	No	Other: Carbon Trading
Credit origination	Hydro	Bulam HEPP	Gold Standard	40000	40000	No	Other: Carbon Trading
Credit origination	Hydro	Uluabat HEPP	VCS (Verified Carbon Standard)	16194	16194	No	Other: Carbon Trading

Further Information

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, not yet calculated	0	Did not calculate yet.	0.00%	We wish to improve our system, however there is insufficient infrastructure and data in Turkey to calculate these emissions. Besides it needs extensive working hours to do so.
Capital goods	Relevant, not yet calculated	0	Did not calculate yet.	0.00%	Life Cycle Assessment is not extensively used in Turkey, therefore at the moment it is so difficult to calculate those emissions.
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Relevant, calculated	328	At RMS, where the pressure of Natural Gas is regulated during NG supply to Erzin NGCCPP.	100.00%	We are willing to enlarge and improve our GHG Inventory system, as a result of this we calculated the GHGs sourced from the RMS (Station to regulate the pressure of Natural Gas during NG supply to Erzin NGCCPP).
Upstream transportation and distribution	Relevant, not yet calculated	0	Did not calculate yet.	100.00%	We wish to improve our system, however there is insufficient infrastructure and data in Turkey to calculate these emissions. Besides

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
					it needs extensive working hours to do so.
Waste generated in operations	Relevant, not yet calculated	0	Did not calculate yet.	0.00%	We wish to improve our system, however there is insufficient infrastructure and data in Turkey to calculate these emissions. Besides it needs extensive working hours to do so.
Business travel	Relevant, calculated	117	Calculations are done by using EPA passenger emissions factors. Flight data gathered from Akenerji's travel agent and the distance of each flight leg was determined. It is calculated with the appropriate emission factor based on the distance of the flight. The flight distance was multiplied by the emission factors to arrive at the Scope 3 business air travel emissions. Emissions factors are from EPA Climate Leaders Optional Emissions from Employee Commuting, Business Travel and Product Transport (May 2008).	100.00%	It covers all of Akenerji employee's business travel by plane. Emissions sourced from company vehicles are included to Scope 1 emissions
Employee commuting	Relevant, not yet calculated	0	Did not calculate yet.	0.00%	We wish to improve our system and we are willing to calculate these emissions in the near future.
Upstream leased assets	Not relevant, explanation provided	0	Not relevant.	100.00%	We do not have upstream leased assets in 2016.
Downstream transportation and distribution	Relevant, not yet calculated	0	Did not calculate yet.		We wish to improve our system, however there is insufficient infrastructure and data in Turkey to calculate these emissions. Besides it needs extensive working hours to do so.

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
Processing of sold products	Not relevant, explanation provided	0	Not relevant.	0.00%	Not relevant.
Use of sold products	Not relevant, explanation provided	0	Not relevant.	100.00%	There is no use of sold products
End of life treatment of sold products	Not relevant, explanation provided	0	Not relevant.	100.00%	There is no end of life treatment of sold products.
Downstream leased assets	Not relevant, explanation provided	0	Not relevant.	100.00%	We do not have downstream leased assets in 2016.
Franchises	Not relevant, explanation provided	0	Not relevant.	100.00%	We do not have franchises.
Investments	Relevant, not yet calculated	0	Did not calculate yet.	0.00%	We wish to improve our system, however there is insufficient infrastructure and data in Turkey to calculate these emissions. Besides it needs extensive working hours to do so.
Other (upstream)	Not relevant, explanation provided	0	Not relevant.	100.00%	We have no other upstream emissions.
Other (downstream)	Not relevant, explanation provided	0	Not relevant.	100.00%	We have no other downstream emissions.

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	https://www.cdp.net/sites/2017/12/21112/Climate Change 2017/Shared Documents/Attachments/CC14.2a/ISO-14064_Verification_Statement_1.pdf	1	ISO14064-3	74

CC14.3

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

Yes

CC14.3a

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

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Business travel	Emissions reduction activities	36.41	Decrease	Business travel by air is calculated and shared in this item. Our emissions decreased due to two particular reasons: The first one is our emission reduction activities and maximum effort driven to use alternative methods like teleconference or videoconference instead of traveling. The second one is our business needs for travel.

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
- Yes, our customers
- Yes, other partners in the value chain

CC14.4a

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

Akenerji engages customers on energy efficiency trainings through publications and on-line materials. In addition to that; to foster the consumer awareness, we provide the amount of GHG emissions released which correspond to their electricity consumption on their monthly energy bills sent to them.

Besides; we provide the opportunity of purchasing carbon neutral electricity to our customers. The number of carbon credits sold or the number of customers bought carbon credits for offsetting could be the measures of success.

Raising Awareness of Local Communities:

In locations where Akenerji power plants operate, we aim to raise awareness and provide information to local communities about our operations. Through our video training on electricity generation, environmental and OHS regulations, we inform contractors, visitors, or interns who come to visit our power plants.

We reached 3,914 students and 229 teachers with our HEPP Informative Presentations tailor-made to inform the local communities on how clean energy is generated at these power plants.

Number of participants trained and number of these informative meetings organized are of the 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	10	4.2%	In 2016, we continued to employ our supplier evaluation process that we initiated in 2015, with the goal of evaluating at least 1 supplier at the plants and 2 at the headquarters, in terms of integrated management systems. The responsible personnel at the Head Office conducted evaluations within the framework of Information Security Management System and Quality, Environment and OHS Management Systems at suppliers. Besides, our teams at the power plants performed 6 supplier evaluations extending beyond our targets for supplier evaluations. We widely enlarged the number of suppliers audited and their share.

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
Serhan GENÇER	Chief Executive Officer	Chief Executive Officer (CEO)

Further Information

Module: Electric utilities

Page: EU0. Reference Dates

EU0.1

Please enter the dates for the periods for which you will be providing data. The years given as column headings in subsequent tables correspond to the "year ending" dates selected below. It is requested that you report emissions for: (i) the current reporting year; (ii) one other year of historical data (i.e. before the current reporting year); and, (iii) one year of forecasted data (beyond 2021 if possible).

Year ending	Date range
2016	Fri 01 Jan 2016 - Sat 31 Dec 2016

Further Information

Page: EU1. Global Totals by Year

EU1.1

In each column, please give a total figure for all the countries for which you will be providing data for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emission intensity (metric tonnes CO2e/MWh)
2016	1211	3698	950103	0.2569

Further Information

Page: EU2. Individual Country Profiles - Turkey

EU2.1

Please select the energy sources/fuels that you use to generate electricity in this country

- CCGT
- Hydro
- Other renewables

EU2.1a

Coal - hard

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
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EU2.1b

Lignite

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
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EU2.1c

Oil & gas (excluding CCGT)

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
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EU2.1d

CCGT

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO ₂ e)	Emissions intensity (metric tonnes CO ₂ e/MWh)
2016	904	2826	948358	0.3356

EU2.1e**Nuclear**

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)
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EU2.1f**Waste**

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
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EU2.1g

Hydro

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)
2016	292	822

EU2.1h

Other renewables

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)
2016	15	50

EU2.1i

Other

Please complete the following table for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
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EU2.1j

Solid biomass

Please complete for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
2016	0	0	0	0

EU2.1k

Total thermal including solid biomass

Please complete for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
2016	904	2826	948358	0.3356

EU2.11

Total figures for this country

Please enter total figures for this country for the "year ending" periods that you selected in answer to EU0.1

Year ending	Nameplate capacity (MW)	Production (GWh)	Absolute emissions (metric tonnes CO2e)	Emissions intensity (metric tonnes CO2e/MWh)
2016	1211	3698	950103	0.2569

Further Information

Page: EU3. Renewable Electricity Sourcing Regulations

EU3.1

In certain countries, e.g. Italy, the UK, the USA, electricity suppliers are required by regulation to incorporate a certain amount of renewable electricity in their energy mix. Is your organization subject to such regulatory requirements?

No

EU3.1a

Please provide the scheme name, the regulatory obligation in terms of the percentage of renewable electricity sourced (both current and future obligations) and give your position in relation to meeting the required percentages

Scheme name	Current % obligation	Future % obligation	Date of future obligation	Position in relation to meeting obligations

Further Information

Page: EU4. Renewable Electricity Development

EU4.1

Please give the contribution of renewable electricity to your organization's EBITDA (Earnings Before Interest, Tax, Depreciation and Amortization) in the current reporting year in either monetary terms or as a percentage

Please give:	Monetary figure	%	Comment
Renewable electricity's contribution to EBITDA			We could not publicise this figure due to confidentiality.

EU4.2

Please give the projected contribution of renewable electricity to your organization's EBITDA at a given point in the future in either monetary terms or as a percentage

Please give:	Monetary figure	%	Year ending	Comment

Please give:	Monetary figure	%	Year ending	Comment
Renewable electricity's contribution to EBITDA				We could not publicise this figure due to confidentiality.

EU4.3

Please give the capital expenditure (capex) planned for the development of renewable electricity capacity in monetary terms and as a percentage of total capex planned for power generation in the current capex plan

Please give:	Monetary figure	%	End year of capex plan	Comment
Capex planned for renewable electricity development				We could not publicise this figure due to confidentiality.

Further Information

CDP