

Welcome to your CDP Climate Change Questionnaire 2019

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

ASELSAN is a face of technology in Turkey for decades and an inspiration for the manufacture of electrical /electronic equipment since its establishment in 1975.

ASELSAN's vision is being a national technology company that maintains its sustainable growth by creating value in the global market; preferred due to its competitiveness, trusted as a strategic partner, and caring for the environment and people.

Today ASELSAN is a world class brand in expanding systematically into the local and global markets, with over \$1 B in revenue and almost 6,000 employees. ASELSAN has become a high technology, multi-product defense electronics company by introducing state-of-the-art equipment and systems solutions for both military and professional applications in 3 continents and 60 countries.

ASELSAN is a technology provider not only for the military but for Turkey in general. Military technologies are translated into novel products in a wide array of areas such as public safety, transportation, health, energy and automation systems, communication and high-end agricultural technologies. In addition to meeting the national technological needs in line with the mission, ASELSAN also enjoys the contribution of its export contracts to the progress of Turkey.

ASELSAN Research Center has been certified as an R&D center by the Ministry of Science, Industry and Technology on 26 October 2016 thus, establishing the 6th R&D center in addition to the already existing 5 R&D centers within the Business Sectors.

ASELSAN operates under five business sectors:

- Communications and Information Technologies Business Sector (HBT): Tactical Radios, Tactical Area Communication Systems, Avionic, Satellite and Naval Communication Systems, Public Safety Communication Systems
- Radar, Electronic Warfare Business Sector (REHIS): Radar Systems, Electronic Warfare Self Protection Systems, Electronic Warfare Intelligence and Attack Programs
- Defense Systems Technologies Business Sector (SST): Weapon Systems, Command Control (C4ISR) Systems, Naval Combat Systems, Air and Missile Defense
- Microelectronics, Guidance & Electro-Optics Business Sector (MGEO): Electro-Optic Systems, Guidance & Unmanned Systems, Avionic Systems, Microelectronics
- Transportation, Security, Energy & Automation Systems Business Sector (UGES): Transportation Systems, Security Systems, Traffic and Automation Systems, Energy Systems, Homeland Security Systems

The Company maintains engineering operations in Ankara, production and engineering operations in Macunköy, Akyurt and Gölbaşı. General Management is located in Ankara Macunköy. Some management offices are located in Istanbul Teknopark.

The Macunköy Facility was established over a total area of 186,000 m2, of which 110,000 m2 is closed. ASELSAN Macunköy Facility is home to the CEO, Communications and Information Technologies Business Sector and Defense System Technologies Business Sector and Transportation, Security Energy and Automation Business Sector.

The Akyurt Facility was established on a total area of 231,000 m2 of which 54,000 m2 is closed. The Microelectronics Guidance and Electro-Optic Business Sector is located in the ASELSAN Akyurt Facility

The Gölbaşı Facility was established in the Gölbaşı district of Ankara, and houses production plants for radar and electronic warfare systems for land, air, sea, space and unmanned platforms. This Facility was established on a total area of 350,000 m2, of which 75,000 m2 is closed. The Facility of which construction began in 2013, was inaugurated in 2015

In ASELSAN, where decreasing carbon emission is one of the strategic goals, carbon emission is monitored since 2009. In 2018 ASELSAN was ranked in A (-) band, she is the first and only company that is ranked with the highest initial score among Defense Industry firms in Turkey and in the Region, participating in CDP survey. ASELSAN has decreased carbon emission significantly through its efforts, and continues its operations by increasing momentum in the fields of increasing energy efficiency in production, giving priority to production technologies that decrease carbon emission, switching to use of energy that does not cause carbon emission. Having certifications for ISO 14001 Environmental Management System and ISO 45001 Work Health and Safety Integrated Management System; ASELSAN will proceed to take part in pioneer applications through actualization of national and international initiatives.

ASELSAN's Corporate Governance rating, which was confirmed as 9.20 out of 10, was published by SAHA on 12 December 2018.

As a result of the evaluation of the ASELSAN Sustainability Report, published in Turkish and English for the first time before the Index assessments back in 2014, ASELSAN was among the 15 firms that were approved to be included in BIST Sustainability Index. ASELSAN has managed to maintain its position in the Index since then.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years
Row 1	January 1, 2018	December 31, 2018	No

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

Turkey

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

TRY

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Operational control

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	<p>The Board Chair who has been assigned as CEO as of April 27, 2018 has a direct responsibility for climate related issues on behalf of the Board and EC. The CEO has also an execution responsibility in the field of social responsibility and environment. All members of the Board are responsible from the economic performance of the Company.</p> <p>The board consider climate-related issues when reviewing and guiding their business strategy. Following the Strategic Plan, the Board carry out oversight power on Sustainability Committee's Program integrated with climate related issues impacting economic, social and environmental performance of the company. In order to conduct its responsibilities ASELSAN's Board of Directors formed three committees:</p> <p>Audit Committee, Corporate Governance Committee, Early Detection and Management of Risk Committee. The 3rd one is comprised of two Board members who ensure the determination of the operational, strategic, financial and other climate related R&Os.</p>

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	<p>Reviewing and guiding strategy</p> <p>Reviewing and guiding major plans of action</p> <p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding annual budgets</p> <p>Reviewing and guiding business plans</p> <p>Setting performance objectives</p> <p>Monitoring implementation and performance of objectives</p> <p>Overseeing major capital expenditures, acquisitions and divestitures</p> <p>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</p>	<p>The Board review and guide, climate related risk management policies as scheduled. The Corporate Management Vice President who leads the Sustainability Committee, briefs the executive committee (EC) of ASELSAN about climate related developments and practices by bringing the attention of the EC to social, legal and environmental R&O's that may have an impact on the Risk Management Policy of the Company. The CEO and the Board of Directors oversee policy by considering global climate related issues, government relations and corporate responsibility including reviewing and providing oversight of the Company's Environmental Sustainability Program. The board consider also climate-related issues when reviewing and guiding the whole business strategy, plans, risk management policies, budget plans as well as, setting organizational performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions and divestitures. In 2018 the following decision was carried out for addressing climate-related risks and opportunities: In order to manage the PMR meetings which will be executed by the Ministry (MoEU), the Board Chair assigned some sustainability committee members to participate the PMR meetings where National Cap & Trade System will be discussed in the workshops.</p>

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
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Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
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C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The direct responsibility for climate change within ASELSAN lies with Executive Committee headed by the CEO representing also the Board Chair.

The CEO informs the board of directors who oversight the company performance on climate related issues. The Board assign strategic and program management responsibility to applicable board committees. In order to conduct its duties and responsibilities in a healthy manner, ASELSAN's Board of Directors formed following committees to ensure the communication based integrated management of risks & opportunities.

Early Detection and Management of Risk Committee is comprised of two Board members. It is chaired by an independent Board member. Committee ensures the determination of the operational, strategic, financial and other climate related risks and those risks are managed in compliance with company's corporate risk-taking profile. The Committee assembles at least six times a year. It oversees the performance of the corporate risk management system.

Audit Committee is comprised of three independent Board members. Its main duties are to ensure disclosure of the financial data and to oversee the functioning and effectiveness of the accounting, independent audit, internal audit and internal control systems of ASELSAN.

Internal Audit Presidency's main duties are to ensure the follow-up of corporate risk management system aligned with ASELSAN's strategy, politics and other process. It oversees the functioning and effectiveness of the risk management system processes. Internal Audit Presidency reports directly to Audit Committee and Board of Directors. The committee assembles at least four times a year

Corporate Risk Management Coordination Committee, is responsible to assign a risk representative who has the duties to prepare risk detection and management documents and to make the coordination of related activities which are reported to Early Detection and Management of Risk Committee. ASELSAN's vision is to be the national defense industry company by maintaining its sustainable growth with creating value in the global market and to be preferred due to its competitiveness, to be trusted as a strategic partner, and to care for the environment and people. In line with this vision, the Company prepare five-year strategic plans that are updated every year, as well as operational plans and three-year budgets. Through this method, the Company's short- and mid-term targets are determined by taking long-term targets into account with resource planning, process improvement and other development activities.

One of the EC core members who is the Vice President of Shared Services presides the Sustainability Committee for sustainability and climate related actions. Vice Presidencies carry out the necessary activities in line with the targets, while their performances are evaluated through the Balanced Scorecard Method.

The Sustainability Committee develops and implements economic, environmental and social sustainability strategies focusing on responsible consumption and production by setting targets

to reduce the impact of identified risks and making performance reviews. The seize of identified opportunities are also discussed in this committee.

The Corporate Management Vice President is the authorized person who drives and adapts climate related decisions of the company. The activities are executed by the following positions in the Sustainability Committee: Management Director of Infrastructure and Facilities who performs energy related legal and operational issues in the operational field.

Finance Director, Strategy Management Director, Investors Relations Manager, Enterprise Risk Management and Internal Control Manager, Supply Chain Management Manager provide all guidance on their own expertise about climate management issues by reporting to Vice President.

The Integrated Management Systems (IMS) Manager works with all facilities' leaders to drive an integrated, enterprise-wide management that includes the products, services, processes, operations, contractors and employees. IMS ensures to drive the calculation of carbon footprint value of the facilities annually in compliance with ISO 14064 International Standard for Greenhouse Gases Emissions Inventories and Verification, making notifications to national/international initiatives in connection therewith. ASELSAN's objective "to minimize the impact on global climate change by monitoring and reporting of greenhouse gas emissions in a transparent approach" was included in the Environmental Management System Policy by the top management of ASELSAN, with the guidance of IMS. The information forming base on climate related R&Os are updated first by the IMS position. With the collaboration of internal control manager, the risk mapping is updated for identifying the potential risks of flooding and storms, but also the consequences of these events: environmental, property damage, impact on the business, etc.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Who is entitled to benefit from these incentives?

Chief Executive Officer (CEO)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

The CEO carry out performance assessments and decisions in line with support to Sustainability and CDP Reporting. Performance of the activities' incentive metrics is reported to the Board of Directors and factor into executive compensation through the Balanced Scorecard Method.

Who is entitled to benefit from these incentives?

Other C-Suite Officer

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

The CEO carry out performance assessments and decisions in line with support to Sustainability and CDP Reporting. Performance of the activities' incentive metrics is reported to the Board of Directors and factor into executive compensation through the Balanced Scorecard Method.

Who is entitled to benefit from these incentives?

Environment/Sustainability manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

Performance indicators cover CO2 emission reduction, energy and natural resources consumption reduction, support for Sustainability and CDP reporting. And these indicators find place as a target in the Balanced Score Card Method. The corporate and personal performance is evaluated through the Balanced Scorecard Method and the realisation scores has a direct impact on the salary increase.

Who is entitled to benefit from these incentives?

All employees

Types of incentives

Monetary reward

Activity incentivized

Efficiency target

Comment

In ASELSAN, there is suggestion system called "Idea Management System" in the intranet since 2013. This system is accessible for all employees. An employee who has an innovative idea on climate change, energy efficiency or improvement on any other topic can send his/her idea note to the Strategy Department through this suggestion system.

The Strategy Department evaluates the idea and if it is feasible, the idea note is shared with the related department. The employee is entitled with a monetary reward if the idea is assessed to be applicable and profitable for the company.

If the proposal results with an emission reduction the reward is 3 gold coins.

Other rewards:

1-In the districts designated in Ankara, together with the Ministry of National Education, we are organizing an environment, energy and climate change painting competition (classes 5.6.7.8). Some gold coin rewards are given to the top three.

2. We hold a Question Cube competition every 3 months among ASELSAN employees. In the Question Cube competition, we ask to the staff 6 questions about climate change and the environment. We reward 3 people chosen by lot from among those who know the questions correctly.

3. The Information Cube is published quarterly. Here we deal with issues such as climate change, cardboard cup reduction, energy reduction

4. We added environmental clauses to the competition held every year among the Sector Presidencies. Thus, we try to improve the employee knowledge in terms of awareness raising.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	0	1	Major global, national and corporate risks and opportunities which have potential impacts on our operations and life of our assets according to the profile of the climate related risks that we may face are considered in 1 year period for short-term time horizon.

Medium-term	1	3	Major global, national and corporate risks and opportunities which have potential impacts on our operations and life of our assets according to the profile of the climate related risks that we may face are considered in 3 years period for medium-term time horizon.
Long-term	3	5	Major global, national and corporate risks and opportunities which have potential impacts on our operations and life of our assets according to the profile of the climate related risks that we may face are considered in 5 years period for long-term time horizon.

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	Climate related risks are identified and tracked by the Sustainability Committee. The risks are first analysed at the facility and activity level as project risks, operational risks, management and adaptation risks. These are assessed according to the methodology given in C 2.2.d The identified risks are then classified to be; very low, low, medium, high and critical. The results of the evaluation are reported to the EC. ASELSAN's overall risk management objective is to reduce controllable risk impacts and minimise the impact of the ones that cannot be controlled. We analyse risks that may arise up to ten years in the future.

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

At both company and asset levels, climate change related risks and opportunities include, changes in fuel and energy prices, climate related laws and regulations, global

competitiveness, changing customer needs, potential threats of national security and employee related issues.

The climate related risks and opportunities at the company level are assessed by the Sustainability Committee. Risks and opportunities associated with the environment or climate change are often coupled with energy-related activity and are subject to our Risk & Opportunity Evaluation Process. The Strategy Department in coordination with the Sustainability Committee is responsible of setting targets to reduce the impact of identified risks and making performance reviews to assess whether the climate related targets are met and also decides on how and when the identified opportunities can be seized. Sustainability Committee and the Early Detection and Management of Risk Committee review and finalize all climate related risk analysis and present the critical risks that are assessed to be of “High” importance to the Board of Directors according to the scoring methodology defined in C2.2d. They also present a report to Board of Directors about the financial and operational measures that need to be taken by ASELSAN to prevent the occurrence of the identified risks. The Board of Directors decides which measures shall be applied and the evaluations are then reported to the Early Detection and Management of Risk Committee to be monitored and brought into action.

Additionally, when the relative significance of climate-related risks is determined by the strategic decision makers after a comparable structured review, they are itemized as implementation plan within the scope of ISO 14001:2015 for a detailed assessment and planning. Annex: Environmental R&Os.

The major climate related risks and opportunities at the asset level are the events that may have a major effect on the GHG emissions of ASELSAN. These events usually are related to energy and fossil fuel consumption. Renovations in product design that lead to less energy consumption may be assessed as an opportunity, and increased consumption of fossil fuel during production is assessed as a major climate related risk.

ASELSAN defines substantive potential impact on her business as the change to operations and cost, and considers reputation risks having negative impact on company’s own business, operations, revenue, profitability and overall market value in Borsa Istanbul. Some foreign continental European institutional investors of ASELSAN are very sensitive to environment related issues and proper reporting related with environment. Taking these concerns into account, we consider the most important aspect of climate change that influences the strategy as the opportunity to develop a green business.

ASELSAN managed to maintain its position on the Borsa Istanbul (BIST) Sustainability Index, where companies are being evaluated on their sustainability performance against some ground rules. ASELSAN was one of the 15 companies to be included in the BIST Sustainability Index at its inception back in 2014 and has been listed on it for four consecutive years in a row.

ASELSAN has been in BIST-50 Index of Borsa Istanbul as well as Corporate Governance Index since 2012 and Sustainability Index since its inception and has also been in BIST-30 Index since April 2017. Corporate governance rating is a prerequisite for presence in Corporate Governance Index of BIST and with the latest revisions in Corporate Governance Principles; sustainability has become a new dimension for corporate governance rating of companies.

Thus, climate change aspect is now embedded in the corporate governance rating.

ASELSAN management values ASELSAN share’s inclusion in prestigious indices of BIST such as BIST-30, Corporate Governance and Sustainability Indices. In addition to this, there are long term institutional investors in ASELSAN’s investor base. The evaluation of corporate governance rating performed by SAHA Corporate Governance and Credit Rating Services were

concluded during the last quarter of 2018. According to the review, the score of 12.12.2017, 9,20 was confirmed as 9,20 out of 10 on 12.12.2018.

C2.2c

(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	<p>ASELSAN is always in compliance with current regulation, when a current regulation- based climate related potential risk is detected, it is forwarded to Corporate Risk Management Coordination Committee Representative via "Risk Cards". ASELSAN management identified with a form the risks and opportunities which have impact on Integrated Management Systems' performance (IMS). This form is called AS-F-81-Environmental Risk and Opportunities Assessment Form. The climate related detailed R&Os (e.g. MRV, PMR activities etc.) are assessed based on the context of the company.</p> <p>Although ASELSAN is not in the scope of MRV, in 2018, Current National MRV regulation was reviewed with an approach of detecting potential risks that our industry may face in mid-term period referring PMR project of the Ministry.</p> <p>Sustainability Committee and the Early Detection and Management of Risk Committee reviews and finalizes all climate related risk analysis, and presents the critical risks that are assessed to be of high importance to the Board of Directors, according to process described in C 2.2b and the scoring methodology defined in C 2.2d. They also present a report to Board of Directors about the financial and operational measures that need to be taken by ASELSAN to prevent the occurrence of the identified risks. The Board of Directors decides which measures shall be applied and the evaluations are then reported to the Early Detection and Management of Risk Committee to be monitored and brought into action.</p> <p>Additionally when the relative significance of current regulation risks are identified and assessed by the strategic decision makers after a comparable structured review, they are itemized as implementation plan within the scope of ISO 14001:2015 for a detailed management.</p> <p>Annex: Environmental R and O's Risk rating is classified as low-medium and high rate. When high rated climate related risks are identified, the action planning commence with the initiation of IMS department. Risks and Opportunities document is annually updated and reviewed with the collaboration of IMS Department and Corporate Risk Management Coordination Committee Representative.</p>

Emerging regulation	Relevant, always included	<p>Emerging Regulatory risks indicate the potential increase in costs (carbon taxes related with energy and raw material or future cap & trade implementation plans) and the discouragement for the establishment of new production facilities. These potential threats are always assessed by the Sustainability Committee who is responsible of bringing attention to these potential impacts. When an emerging regulation-based climate related potential risk is detected, it is forwarded to Corporate Risk Management Coordination Committee Representative via “Risk Cards”. ASELSAN management identified with a form the R&O's which have impact on Integrated Management Systems' performance. (IMS). This form is called AS-F-81- Environmental Risks and Opportunities Assessment Form. The climate related detailed R and O's (e.g. MRV, PMR activities etc) are assessed based on the context of the company. Sustainability Committee and the Early Detection and Management of Risk Committee reviews and finalizes all climate related risk analysis, and presents the critical risks that are assessed to be of high importance to the Board of Directors according to process described in C 2.2b and the scoring methodology defined in C 2.2d. They also present a report to Board of Directors about the financial and operational measures that need to be taken by ASELSAN to prevent the occurrence of the identified risks. The Board of Directors decides which measures shall be applied and the evaluations are then reported to the Early Detection and Management of Risk Committee to be monitored and brought into action.</p> <p>Additionally when the relative significance of emerging regulation risks are identified and assessed by the strategic decision makers after a comparable structured review, they are itemized also as implementation plan within the scope of ISO 14001:2015 for a detailed management. Annex: Environmental R&O's. Risk rating is classified as low, medium and high rate. When high rated climate related risks are identified, the action planning commence with the initiation of IMS department. Risk and Opportunities document is annually updated and reviewed with the collaboration of IMS Department and Corporate Risk Management Coordination Committee Representative.</p>
Technology	Not relevant, included	<p>Substitution of existing products with lower emission options will not cause technology-based climate related risks for ASELSAN. There is a growing potential for low carbon technologies, like smart digital solutions, smart mobility, solar cells, insulation etc. for different sectors. Producing such technologies will enable ASELSAN to differentiate. This potential is always assessed by the Sustainability Committee who is responsible of bringing attention to these potential impacts with the collaboration of research and development,</p>

		<p>production and other related departments. At company level major global and national risks that meet ASELSAN's risk management criteria are included in annual risk assessment reports. The Strategy Department in coordination with the Sustainability Committee is responsible of setting targets to reduce the impact of identified risks and making performance reviews. The Committee decides which risks and opportunities shall be reported to the Board of Directors according to process described in C 2.2b and the scoring methodology defined in C 2.2d These reports are presented to senior executives for subsequent follow-up.</p>
Legal	Relevant, always included	<p>Legal risks indicate increasing pricing of GHG emissions which could result in increased product prices. These potential threats are always assessed by the Sustainability Committee who is responsible of bringing attention to these potential impacts with the collaboration of production and other related departments. At company level low carbon products become more attractive for customers. This is an opportunity for ASELSAN who has the ability to produce technologies for low carbon products. The Strategy Department in coordination with the Sustainability Committee is responsible of setting targets to reduce the impact of identified risks and making performance reviews. The Committee decides which risks and opportunities shall be reported to the Board of Directors according to process described in C2.2b and the scoring methodology defined in C2.2d These reports are presented to senior executives for subsequent follow-up.</p>
Market	Relevant, always included	<p>Market risks indicate increasing production costs due to changing input prices like materials, water, energy, etc. ASELSAN elaborates digital solutions for major defense industry companies in Europe and US. As a sub-contractor ASELSAN realizes the assessments about the effects of the products on climate change in order to be able to compete with the sector peers.</p> <p>These potential threats or opportunities are always assessed by the Sustainability Committee who is responsible of bringing attention to these potential impacts with the collaboration of production, purchasing, marketing and other related departments. At company level low carbon products become more attractive for customers. This is an opportunity for ASELSAN who has the ability to produce technologies for low carbon products. The Sustainability Committee decides which risks and opportunities shall be reported to the Board of Directors according to the scoring methodology defined in C 2.2.d. These reports are presented to senior executives for subsequent follow-up.</p>
Reputation	Relevant, always included	<p>Reputation risks indicate potential impacts associated with negative perceptions experienced by the public around ASELSAN's carbon performance. These potential threats are always assessed by the</p>

		<p>Sustainability Committee who is responsible of bringing attention to potential impacts with the collaboration of production and other related departments. The Sustainability Committee decides which risks and opportunities shall be reported to the Board of Directors according to process described in C 2.2b and the scoring methodology defined in C 2.2d. These reports are presented to senior executives for subsequent follow-up</p>
Acute physical	Relevant, always included	<p>Acute physical risks indicate extreme weather events which can lead to higher operational costs due to supply chain disruption. These potential threats are always assessed by the Sustainability Committee who is responsible of bringing attention to potential impacts with the collaboration of production, utility and other related departments. The Sustainability Committee decides which risks and opportunities shall be reported to the Board of Directors according to process described in C 2.2b and the scoring methodology defined in C 2.2d. These reports are presented to senior executives for subsequent follow-up.</p>
Chronic physical	Relevant, always included	<p>Chronic physical risks indicate changed precipitation and droughts patterns which can have negative impact on energy management in the facilities.</p> <p>These potential threats are always assessed by the Sustainability Committee who is responsible of bringing attention to potential impacts with the collaboration of production, utility and other related departments. The Sustainability Committee decides which risks and opportunities shall be reported to the Board of Directors according to process described in C 2.2b and the scoring methodology defined in C 2.2d These reports are presented to senior executives for subsequent follow-up.</p>
Upstream	Relevant, sometimes included	<p>Upstream risks indicate extreme weather events which can lead to higher operational costs due to supply chain disruption. These potential threats are always assessed by the Sustainability Committee who is responsible of bringing attention to potential impacts with the collaboration of production, purchasing and other related departments. The Sustainability Committee decides which risks and opportunities shall be reported to the Board of Directors according to process described in C 2.2b and the scoring methodology defined in C2.2d These reports are presented to senior executives for subsequent follow-up.</p>
Downstream	Relevant, sometimes included	<p>Downstream risks indicate extreme weather events which can lead to higher operational costs due to downstream activities. These potential threats are always assessed by the Sustainability Committee who is responsible of bringing attention to potential impacts with the collaboration of production, planning and other related departments. The Sustainability Committee decides which risks and opportunities</p>

		shall be reported to the Board of Directors according to process described in C2.2b and the scoring methodology defined in C2.2d These reports are presented to senior executives for subsequent follow-up
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C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

The major climate related risks and opportunities at the asset level are the events that may have a major effect on the GHG emissions of ASELSAN.

These events usually are related to energy and fossil fuel consumption.

Renovations in product design enabling less energy consumption may be assessed as an opportunity.

The process is described as follows:

First, the probability of occurrence of the identified risk is scored as given below:

1. Very low: 0%-10% occurrence
2. Low: 11% - 30% occurrence
3. Medium: 31% - 70% occurrence
4. High: 71% - 90% occurrence
5. Very high: 91% - 100% occurrence

Then, the impact of the identified risk event is determined:

1. Not important: Financial and reputation impact is negligible
2. Low: Reasonable financial and reputation impact
3. Medium: Likely to have moderate financial and reputation impact
4. Important: Material financial and reputation impact
5. Critical: Crucial financial and reputation threat for ASELSAN

The risk rating matrix is compiled according to the combined score (risk level) as shown below.

According to this final score the risks and opportunities are prioritised:

0-2 Very low: No immediate action

3-4 Low: No immediate action but the risk event needs to be monitored annually

5-12 Medium: Actions need to be planned

13-16 High: Poses a threat and shall be dealt with. The risk event and the measures to be applied are reported to the Board of Directors

17-25: Critical: Immediate actions need to be planned.

The risk event and the measures to be applied are reported to the Board of Directors.

Sustainability Committee and the Early Detection and Management of Risk Committee review and finalize all climate change related risk analysis and presents the critical risks that are assessed to be of High importance to the Board of Directors. They also present a report to Board of Directors about the financial and operational measures that need to be taken by ASELSAN to prevent the occurrence of the identified risks. The Board of Directors decides which measures shall be applied and the evaluations are then reported to the Early Detection and Management of Risk Committee to be monitored and brought into action.

The opportunity is evaluated by the related department and reported to the Board of Directors. If there are new opportunities detected for long-term time horizon, they are included in the annual budget planning.

Loss of productive labor force as a consequence of health problems caused by environment and climate related problems is an example of physical risk assessment realized by ASELSAN's OHS department.

Another example for transition risk is to make some additional modifications in the performance parameters of designed products as a consequence of climate related conditions. (Specific confidentiality constraints prohibiting the disclosure)

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Increased pricing of GHG emissions

Type of financial impact

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

The Paris Agreement bears high future possibilities of additional regulations coming into force in the future. The last negotiations of Climate Summit concluded and focused on the "rule book" which will bring along the operation of the compliance matters. Turkey has submitted its Intended Nationally Determined Contribution (INDC) to UNFCCC as part of Paris Agreement and has committed to reduce its GHG emissions by 21% from the Business as Usual (BAU) scenario until 2030. This commitment is going to be revised in the next summit. The cap and trade principle which is the main solution of the EU's policy to combat climate change is adopted by EU-ETS. For the purpose to be

ready to the future commitment, this system was taken in the agenda of Turkish Ministry of Environment & Urbanization who announced that the phase 2 of PMR project studies will be started in 2019 and pilot implementations will be realized between 2020-2021 For 2 years this new system will have uncertainties which may result to pose some potential risks on ASELSAN such as; obligation to reduce the GHG emissions. Additional cost could be associated with "carbon pricing" resulting with an increase in operational cost. ASELSAN is not in the scope of MRV. The National MRV regulation is likely to be revised; which may bring additional emission quotas forcing our industry to face carbon cap allocation

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

399,903

Potential financial impact figure – maximum (currency)

799,807

Explanation of financial impact figure

At present, three-quarters of the global emissions covered by government carbon pricing are priced below US\$10 per ton CO₂-e This is far short of the level needed to drive transformation change to stay well below the 2 C degree target of Paris Agreement.

Estimated levels by the World Bank are: \$40-80 per ton by 2020 and \$50-100 per ton by 2030.

ASELSAN's 2018 total Scope1 CO₂-e emissions were 10737 tons. If we were in the context of MRV system, 8314 tonnes of total Scope1 emissions would be taken into account. As carbon pricing figure, we decided to use \$10-20 in calculations, for 2020 For med-term time horizon financial implication could vary between 83140 USD (399903 TRY) and 166280 USD (799807 TRY) regarding to international cap & trade current system results.

Management method

In order to manage this risk ASELSAN's Board chair assigned some sustainability committee members to participate the PMR meetings executed by the Ministry. This communication will prepare our company to this approaching system. Internally we started to assess our energy saving potential and possible optimization points in our operations. It is planned to set Energy Management System in our facilities. The risk magnitude of impact on our operations will be reduced by these activities. Therefore, this risk will be likely to have less impact on our OPEX even after the foreseen time horizon

Cost of management

90,000

Comment

Cost of managing this risk is approximately 90000 TRY, covering management activities' related expenses to frame up energy management system in our facilities.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Mandates on and regulation of existing products and services

Type of financial impact

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

In ASELSAN one of the primary goals is to increase the activities as a subcontractor for major defense industry companies in Europe and the US by providing services in such a way that enables the company to contribute to the development of global defense industry. However, as the environmental regulation especially in Europe is more advanced than Turkey, soon ASELSAN may face product labeling requirements. Carbon footprint assessment of all the products that is planned to produce as sub-contractors of European and American companies may force the company to perform a more detailed and enhanced analysis of the systems, including assessing the environmental impacts of the products throughout the whole life cycle (i.e. a detailed LCA). ASELSAN may also need to comply with Eco-Labeling standards such as EPD in order to be able to export the products and systems to the US and Europe, which may force to make changes in product design to be able to compete with the sector peers.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

2,434,438

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

It is expected that these types of requirements will not exceed 0.5% of our OPEX.
(ASELSAN Annual Report-2018 Financial Information section for OPEX details)

Management method

We closely follow the Environmental regulations in our target markets, and whenever we see that there is a need for such action, we will perform the related environmental analysis before it becomes a regulatory obligation.

ASELSAN is very meticulous in such actions and in the past many standards and reporting schemes such as ISO 27001, CDP, CMMI (Capability Maturity Model Integration) have been applied even before it was asked for by our clients. LCA thinking which is a new evolving requirement of ISO 14001: 2015 that our company was certified in the reporting year, is inherently in the concern of ASELSAN

Cost of management

250,000

Comment

The cost may consist of acquiring consultancy and verification services regarding "Environmental Product Declaration". This cost of management was calculated for the same product family

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Chronic: Rising mean temperatures

Type of financial impact

Reduced revenue and higher costs from negative impacts on workforce (e.g., health, safety, absenteeism)

Company- specific description

Featured in IPCC assessment reports our country is in a vulnerable location which could be impacted by extreme weather events. Our facilities may potentially be impacted by some big and sudden events due to extreme changes such as: Heat waves, floods, hail storms.

Changes in temperature extremes will result in an increase in cooling demand in the summer period and heating demand in the winter period. The business continuity is ensured by the deployment of specific protection systems.

This change may cause an increase in the energy expenses of ASELSAN.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

2,434,438

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

As the energy expenses constitute approximately 1% of our OPEX, this risk may increase our energy expenses. 50% rise will result in energy expenses to constitute over 1.5% of our OPEX.

ASELSAN Annual Report- 2018 Financial Information section for OPEX details

Management method

In order to manage this risk, we priorities managing the assets in a way to prevent excessive energy consumption by enhancing building and infrastructure insulation to be able to optimize the energy consumption and reduce both cooling and heating demand to an optimum level. With these precautionary projects, ASELSAN tries to be better prepared to temperature extremes.

The business interruption loss insurance is in place. Those risks are managed through our insurance process. Accordingly, other improvement measures will enable ASELSAN to reduce the likelihood of this risk to about as likely as not.

Cost of management

0

Comment

No monetary investments were made regarding managing this risk during the reporting period.

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Acute: Increased severity of extreme weather events such as cyclones and floods

Type of financial impact

Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

Company- specific description

Climate-related risks for natural and human systems depend on the magnitude and rate of warming, geographic location, levels of development and vulnerability, and on the choices and implementation of adaptation and mitigation options. Impacts on natural and human systems from global warming have already been observed. Many land and ocean ecosystems and some of the services they provide have already changed due to global warming. It is determined that the hailstorm or precipitation activities in coastal regions, will arise aridity at internal regions because of extreme changes such as: heat

waves, floods, storms and rises at sea levels. Turkey which is situated in Mediterranean Basin may face some significant impacts due to these conditions. Regional temperature changes will cause sudden and important changes which may pose risks on the assets of our facilities. For the purpose to handle the problem, periodic emergency drills are performed, emergency action plans are prepared and implemented. This factor may increase our operational costs

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

38,829,812

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial impact figure is calculated based on sales or delivery figure of the impacted day. The financial implication of a daily shut-off due to supplier activity disruption would not exceed 38,829,812 TRY

Calculation: (Revenues) 9,008,516,373 / 232 (working days) = 38,829,812 TRY

Management method

Supplier and value chain engagement is the management method of this risk driver.

Those risks are managed through our insurance system. The business interruption loss insurance is in place.

Cost of management

3,500,000

Comment

The cost is related with insurance premium value, covering only physical risk driver.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Markets

Primary climate-related opportunity driver

Access to new markets

Type of financial impact

Increased revenues through access to new and emerging markets (e.g., partnerships with governments, development banks)

Company-specific description

BIST has established the Sustainability Index for companies listed in BIST-30 index, in 2014. ASELSAN was one of the 15 companies listed in this index at its first launch. Since 2015, BIST-50 companies have been subjected to the assessment for Sustainability Index and ASELSAN have managed to maintain its position in the index four years in a row. Our efforts on mitigating operation base emissions played a crucial role in being listed in this index. ASELSAN is ready for future legislative framework that the company may face such as MRV system which the scope may be enlarged in Turkey. ASELSAN is aware of the future ETS mechanism, the organization is handling this issue which is under discussion in Turkey. Our on-going actions on climate related mitigation will result in getting higher scores in the Sustainability Index of BIST. This will increase the interest on the investor's side and will have a positive impact on both our existing and prospective shareholders. In 2018, we aimed to increase our role in world defense markets. In this regard, ASELSAN has strengthened its position in the global league by improving its technological depth, R&D power and design-production competencies. In the reporting year, ASELSAN moved up to 55 th place among the global defense companies, up from 57th place in 2017.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

19,500,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

ASELSAN's efforts on climate change mitigation will help to positively differ from BIST-50 listed companies which are not involved in such projects. The efforts in improving the sustainability performance will positively affect the valuation and investor sentiment of ASELSAN 's institutional investors, especially those located in Continental Europe. GHG related actions have a crucial dimension adding value to sustainability performance. We consider our Company will have a better investment case for possible long-term investors.

A total of USD 4 billion 57 million (19,5 billion TRY) of new contracts/orders were signed in 2018, where the backlog of ASELSAN is USD 9.1 billion. ASELSAN realized 59% of its total sales of TL 9.009 million TL to the Turkish Armed Forces, 31% of its sales to private organizations or other corporate customers, and with 10% of its export

Strategy to realize opportunity

Since the previous reporting period we have included all our facilities in our GHG emissions inventory. In 2015 we have obtained the ISO 14064-1 Certificate for our Scope 1 and Scope 2 emissions. Previous year was the first time our GHG Emissions were subjected to a third-party verification and we have extended the verification boundary to include our Scope 3 emissions in 2016-2017 period. Moreover, as part of ASELSAN's 2014-2019 strategy, we have started the process to execute Energy Management System.

All these implemented measures will potentially enable us to benefit from this opportunity on a medium scale within our defined time-frame.

Cost to realize opportunity

49,000

Comment

The cost of management for this opportunity constitutes of the costs of consultancy services for ISO 14064-1 Reporting, training of the ISO 14064-1 Project team and ISO certification by a third party. Such costs associated with acquiring both consultancy and verification services as part of our CDP response constitutes below 0.01% of our total OPEX. (ASELSAN Annual Report-2018 Financial Information section for OPEX details)

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Markets

Primary climate-related opportunity driver

Use of public-sector incentives

Type of financial impact

Increased revenues through access to new and emerging markets (e.g., partnerships with governments, development banks)

Company-specific description

By following up on all kind of technological developments pertaining to land, air, naval and aerospace platform product/system technologies, the Company not only applies technology but also designs, develops and produces product/system technologies in order to share or sell with/to national and international collaborations.

Projects are striving at maximum level in order to benefit from the technological opportunities existing in the country aiming to increase the national contribution share. For this purpose, cooperation is made with universities and various R&D organizations and importance is given to the use of local suppliers and subcontractors.

As for the projects carried out within the Group, the Research and Development incentive in compliance with the provisions of the Law on Corporate Tax numbered 5520 and Research and Development center application pursuant to the Law regarding the support of Research and Development activities numbered 5746 are being implemented together. As for non-public R&D projects, the approval of TEYDEB (Technology and Innovation Support Programs Directorate) and ARDEB (Research Support Programs Presidency) are received and supported by the institutions. Turkey's 10th Development Plan includes multi programs on different incentives including R&D projects such as Enhancing Energy Efficiency etc. ASELSAN has a chance to benefit from governmental incentives in the scope of this program

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

54,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The incentive obtained consists of the incentives that are accrued in accordance with TÜBİTAK's R&D recognition letter prepared with respect to the Group's ongoing projects
Current government total grants and incentives (1000TL) - 2018 Annual Report
2018-----53.818
2017-----41.643
This figure represents the total grants covering also climate related ones.

Strategy to realize opportunity

The Group obtains capital support from "Support and Price Stabilization Fund" of Central Bank of Turkey via Under secretariat of Foreign Trade's consent. The Scientific and Technological Research Council of Turkey ("TÜBİTAK") and Technology Development Foundation of Turkey ("TTGV") act as intermediary in accordance with Communiqué No:98/10 published by the Money-Loans and Coordination Board. In accordance with Law on Technology Development Zones numbered 4691, Group utilizes withholding income tax incentive, social security premium incentive and stamp tax exceptions. Such incentives are utilized through not paying withholding income tax incentive, social security premium incentive and stamp tax exceptions calculated based on research and development and software personnel payroll. Income generated in accordance with law on Technology Development Zones numbered 4691 is exempt from corporate income tax until 31 December 2023

Cost to realize opportunity

0

Comment

We don't have any cost regarding the management of this opportunity, we strictly monitor the incentive programs and apply to the ones that are related to our scope of business.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Type of financial impact

Better competitive position to reflect shifting consumer preferences, resulting in increased revenues

Company-specific description

As climate change is one of the biggest challenges the humanity has faced, consumers are becoming more and more environmentally aware. At company level low carbon products become more attractive for customers. This is an opportunity for ASELSAN who has the ability to produce technologies for low carbon products.

Activities have been carried out to develop innovative and original technologies which will provide an efficient and uninterrupted supply of electricity from Turkey's extensive renewable energy resources, specifically aimed at solar and wind energy. Critical components have been developed with the maximum national means in order to provide a competitive advantage in micro grid base hybrid renewable energy system solutions. In the field of wind energy, the design, development and production processes of full scale wind energy power converter systems and power grid connection algorithms, which are required by wind turbine manufacturers, have been completed. The first 300 kW power converter systems, which was ordered by the Northel EMK Company, has been successfully commissioned in the field.

In the field of solar energy, very high efficiency c-Si photovoltaic cell and module development studies have been continuing with the IBC (Interdigitated Back Contact) technology. Within the scope of the joint studies carried out with GÜNAM at METU (Middle East Technical University), production infrastructure has been completed and prototype IBC solar cells have been manufactured.

Preliminary work for Renewable Energy Micro Grid System R&D project has been completed. Detailed studies and designs will be performed in 2019.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financial implications of these projects are evaluated. They have the potential to increase our revenue in the med-term. The financial figures are sensitive data. Specific confidentiality constraints prohibiting the disclosure.

Strategy to realize opportunity

ASELSAN's Technology Road Map and Investment Plan is created in line with ASELSAN's Strategic Plan having detailed plans on each technology area (including climate friendly technologies) that will be researched and developed in the next 5 years along with the required investments." The progress of this plan is monitored every year and used as a measure in corporate performance.

In 2018, ASELSAN actively followed a policy that would ensure maximum efficiency and profitability while seizing new opportunities offered by the latest technologies. Research and Development activities for new climate friendly product groups are currently being analysed and planned for implementation such as electric vehicles to be used for public transport as well as portable hybrid electricity generation system using renewable energy sources. We are already on the process of extending our product line to include renewable energy sources' implementation.

Therefore, the time frame of this opportunity is well performed as we can already project an increase in our revenue. And in 2019, the company will improve the competitiveness by upgrading current technologies and by introducing innovative, environmentally-friendly and energy efficient systems and products. Producing new and more climate friendly products is a good opportunity for the company to gain new markets.

Cost to realize opportunity

0

Comment

The Research and Development activities we hold as part of this opportunity has third parties involved to this subject. Within the scope of the joint studies carried out with GÜNAM at METU (Middle East Technical University), production infrastructure has been

completed and prototype IBC solar cells have been manufactured. Specific confidentiality constraints prohibiting the disclosure (cost to realize opportunity) .

Identifier

Opp4

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Type of financial impact

Better competitive position to reflect shifting consumer preferences, resulting in increased revenues

Company-specific description

ASELSAN's Technology Road Map and Investment Plan is created in line with ASELSAN's Strategic Plan having detailed plans on each technology area (including climate friendly technologies) that will be researched and developed in the next 5 years along with the required investments." The progress of this plan is monitored every year and used as a measure in corporate performance. ASELSAN has the ability to produce technologies for low carbon products/ services. In 2019, the company will improve the competitiveness by upgrading current technologies and by introducing innovative, environmentally-friendly and energy efficient systems and products.

ASELSAN, as the leading Turkish company in toll collection systems, has carried out intensive work in this field in 2018 as well. On the Istanbul-Izmir Highway, Yavuz Sultan Selim Bridge and Northern Ring road, along the newly opened road sections, new toll collection stations have been added to the existing tolling systems. The toll collection system for the new ambitious Northern Marmara Highway is provided by ASELSAN. In 2018, ASELSAN's tolling systems achieved a record by collecting tolls from about 300 million vehicles both on the 2,200 km long state operated highways and on the highways operated by private concessions. MLFF Vehicle recognition system, recognizes the license plate of a vehicles on the roadway.

Vehicles of interest are identified and tracked throughout different system locations. MLFF system that allows highway users to pass through tolling point at high speed even when changing lanes without having to slow down to pay for toll. Congestion at MLFF is decreased at about %21 according to toll plazas. MLFF system reduce congestion rate at the Toll Plazas by increasing vehicles' throughput at more than 1500 vehicles per hour. The research shows that the average delay of vehicle is 13 seconds per vehicle per km (comparing to the MLFF). In general, higher penetration rates give better results in term of emission reductions. On the highway road, modeled benefits at the macro level are 1.5% reduction in CO2 emissions for a %20 penetration rate, 4.5% reduction in

CO2 emissions for a %60 penetration rate, 6.5% reduction in CO2 emissions for a %90 penetration rate. Thus MLFF improve public transportation and help to reduce air pollution, NOx and CO2 and road noise via a decline in traffic.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financial implications of these projects are evaluated. They have the potential to increase our revenue in the med-term. The financial figures are sensitive data. Specific confidentiality constraints prohibiting the disclosure.

Strategy to realize opportunity

Research and Development activities for this system is analysed and planned for the implementation Therefore, the time frame of this opportunity is well performed as we can already project an increase in our revenue. The activities for this important tolling project will be continued in 2019 as well. Furthermore, a new contract is signed in 2018 for the Toll Collection Systems on Menemen-Aliağa-Çandarlı Highway. However, the actions to be taken in order to manage this opportunity will consequently cause an increase in our OPEX in the first place. ASELSAN Annual Report-2018 Financial Information section for OPEX details)

Cost to realize opportunity

50,197,216

Comment

The Research and Development activities we hold as part of this opportunity has third parties involved to this subject. In addition to securing tolls for the constructed highways, ASELSAN toll collection systems also play an important role in the revenue

reconciliation and auditing of private concessions by state institutions. For this task, special solutions were developed in order to provide security, integrity, trace-ability and control-ability of the data recorded in the system.

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Impacted for some suppliers, facilities, or product lines	<p>ASELSAN aims to be a responsible producer for a globally responsible consumption. Substitution of existing products with lower emission options does not cause technology base climate related risks. There is an increased demand for new low carbon technologies, materials, products and services such as smart digital solutions, smart mobility, solar cells, insulation etc. for different sectors. ASELSAN aims to be one of the main producers of renewable energy technologies in Turkey. The Electric Vehicle Systems Program Management Department started a project with TEMSA in March 2015 with the aim of producing the first domestic electric bus. Preliminary works related with TEMSA Avenue EV 12 mt. Electric Bus has been completed. The first prototype which was co-developed together with Anadolu ISUZU was showcased in IAA (International Motor Show Germany) Fair.</p> <p>As transportation related GHG emissions account for nearly 14% of Turkey's total emissions, it is aimed to supply necessary electric vehicle systems designed for public transportation of major municipalities in Turkey and to take part in Turkey's National Contribution (INDC) plan to reduce its emissions by 21% from 2030 BAU level by supporting the shift towards low carbon public transportation. Project development and feasibility study activities for electrical public transportation vehicles are jointly performed with local public institutions.</p> <p>ASELSAN focuses on developing hybrid system where both solar and wind power sources can be used interchangeably. While conducting such activities, ASELSAN aims to develop that the hybrid system could be portable and can be used both on-grid and off-grid. The new system will reduce the use of diesel back-up generators and result in energy consumption reduction and therefore GHG emissions. A maximum efficiency and profitability were detected while seizing the new opportunity offered by the latest technology. In 2019, approximately 40 units of hybrid energy source installation will be completed on site. Each system produces an average of 7000 kWh clean energy per year, resulting with 2000 LT fuel saving. As a total 80000 L fuel consumption reduction per year will be realized.</p>

		Therefore, these projects are the most important business decisions executed during the mid-term period and has high impacts on the business strategy.
Supply chain and/or value chain	Impacted for some suppliers, facilities, or product lines	<p>In order to eliminate value chain risks and to meet the needs of all stakeholders in the global energy systems market with efficient, reliable, economic, high quality state-of-the-art products and services in the areas of electricity generation, transmission, distribution, consumption and management, ASELSAN has established Energy Systems Programs for the research and development, design, production, integration and after sales support in the following areas:</p> <ul style="list-style-type: none"> · Energy Management and Smart Grid Systems and · Renewable Energy Systems. <p>Development of system, software and hardware components for national and international markets have been targeted in the field of smart grids, in order to provide solutions for the monitoring, optimization and management of generation, transmission, distribution and consumption of energy.</p> <p>Within the scope of Energy Management and Smart Grid Systems, work has been carried out for development of system, software and hardware components for SCADA / Energy Management System /Distribution Management System, Micro Grid Systems.</p> <p>SCADA systems operating over critical infrastructures like electricity, oil and gas transmission/distribution systems enable system operators to supervise system status in real time. By improving the system observation, SCADA systems increase the control of these infrastructures. Information gathered via SCADA systems can be analysed and used to implement necessary preliminary actions to prevent situations with deteriorating effects on nature. SCADA systems help system operators to manage the load and production balance efficiently in such a manner to maximize the use of renewable energy systems without damaging the sustainability of the system. With the help of efficient SCADA and energy management systems (EMS); the amount of secondary energy reserves which principally rely on natural gas and coal-based generator units, can be significantly lowered. These systems ease the management and integration of renewable energy resources and electric vehicles, thus leads to reducing carbon emissions caused by conventional energy resources like natural gas, coal and fuels.</p> <p>This Program Activities will change the awareness on relative impacts of business decisions executed during the mid-term and long term period and has a high impact on the core business</p>

		starting from the revision of business strategy
Adaptation and mitigation activities	Impacted	<p>For a Nationwide responsible consumption, ASELSAN is focusing on innovative studies on renewable energy systems. Innovative design and development work is being pursued for systems in the renewable energy area that will supply efficient and uninterrupted electric energy while maximizing benefit from Turkey's rich solar and wind energy resources.</p> <p>In the area of solar energy, a project has been initiated for the development of very high efficiency c-Si photo voltaic cells and modules. Furthermore, design and development of hybrid energy systems that aim to minimize the use of diesel generators in off grid applications has been completed. Taking into consideration the needs of the Turkish wind industry, full power wind energy converters have been developed and are being manufactured to be delivered to local turbine manufacturers. Lastly, Research and Development work has been started for the development of converters for use in solar and wind power plants.</p> <p>In the long-term the area has a high positive impact on the companies' business and strategy.</p>
Investment in R&D	Impacted	<p>There is a growing potential for low carbon technologies, like smart digital solutions, smart mobility, solar cells, insulation etc. for different sectors. ASELSAN continued to grow its Research and Development activities in the framework of national goals, in other areas such as energy, transportation, medical systems, and next generation cellular communication. ASELSAN is a technology center providing electronic systems not only for the military but also for Turkey in general. More and more public or private institutions and companies in Turkey depend on ASELSAN for their high-tech system requirements.</p> <p>Military technologies are translated into novel products in a wide array of areas such as public safety, energy and automation systems, civil communication products and high-end agricultural technologies The Group, being a leading defense industry establishment developing advanced technology system solutions on land, air, naval and aerospace platforms, has given importance to Research and Development activities and technological gains and targets since it was founded. Besides, it aims to spend approximately 6% of the annual turnover to its Research and Development activities financed with its own resources. Over three thousand employees work in the six Research and Development Centers within ASELSAN.</p> <p>Research programs are continuing for Bio-diagnosis and CBRN (defense systems against Chemical, Biologic, Radio-logic and</p>

		<p>Nuclear Threats) systems with a view for self-sufficiency in technologies involving the detection, identification, analysis and simulation systems</p> <p>In 2018, ASELSAN actively followed a policy that would ensure maximum efficiency and profitability while seizing new opportunities offered by the latest technologies. ASELSAN has over 100 internally financed R&D projects that comprise both ongoing projects and those launched in new fields. In 2018 the total R&D expenditure was 2.163 million TRY, a 22% increase was detected compared to previous year. The investment in R&D will continue due to these emerging opportunities.</p> <p>And in 2019, we will improve our competitiveness by upgrading our current technologies and by introducing innovative, environmentally-friendly and energy efficient systems and products.</p> <p>In the long-term the area has the highest positive impact on the company business and strategy.</p>
Operations	Not yet impacted	<p>Operations of the company could be impacted by energy prices. This risk is assessed by the company by taking into account energy savings, potential and possible optimization points in the production and other activities. Other physical risks are assessed for our facilities and services. The insurance system is in place. This area could have a low impact on the companies' business strategy and planning, in the long- term.</p>
Other, please specify	Not impacted	There is not any other detected climate change related area which has impact on the business

C2.6

(C2.6) Describe where and how the identified risks and opportunities have been factored into your financial planning process.

	Relevance	Description
Revenues	Impacted for some suppliers, facilities, or product lines	<p>Climate change poses an opportunity for ASELSAN to develop more low-emissions goods and services. This would likely impact the projected revenue in the future that ASELSAN aims to be one of the main producers of renewable energy technologies in Turkey. Due to emerging opportunities to develop low-emission goods and services the investment in R&D will continue</p> <p>The total expenditure on R&D activities was 2163 m TRY, the previous year was 1675 m TRY.</p> <p>In 2018, ASELSAN actively followed a policy that would ensure</p>

		<p>maximum efficiency and profitability while seizing new opportunities offered by the latest technologies. ASELSAN has over 100 internally financed R&D projects that comprise both ongoing projects and those launched in new fields</p> <p>Next year, we will improve our competitiveness by upgrading our current technologies and by introducing innovative, environment-friendly and energy efficient systems and products.</p> <p>Acute and chronic physical climate-related risks don't pose high risk for our direct operations. The risks magnitude would be low in the long term</p> <p>In the long-term the revenue will positively and highly be impacted by the financial planning which includes long-term capital allocation, investment, R&D.</p>
Operating costs	Impacted for some suppliers, facilities, or product lines	Climate related operating costs are factored into our financial planning process which includes long-term capital allocation, investment, R&D and other standard costs. In the long-term the operating costs could be impacted to be overall low to medium through the financial planning which includes manufactured, human and social capital
Capital expenditures / capital allocation	Not yet impacted	<p>Climate-related risks and opportunities are factored into our capital expenditure planning process.</p> <p>In case of any capital expenditure or allocation we consider implementing efficient technologies compatible to reduce the magnitude of climate related potential risks. It is also an opportunity to reduce the costs.</p> <p>While making an investment decision both for a new production facility, a capacity increase (Gölbaşı expansion project) we consider installing the most efficient technologies in order to reduce the risk of high operating costs.</p> <p>In the long-term the capital expenditure/capital allocation could be impacted to be overall low to medium through the financial planning</p>
Acquisitions and divestments	Not impacted	<p>It is assessed that climate change may not pose risks on acquisitions and divestment for ASELSAN in the long term</p> <p>There is no any acquisitions or divestment made in the reporting year and there is no any other long -term planning. In case of any possibility of realizing this condition the climate related R&O s could be assessed before financial planning.</p>
Access to capital	Not impacted	It is assessed that climate change may not pose risks on the access to capital for ASELSAN in the short term. The climate related risks and opportunities are assessed base on changing

		climate circumstances. In case of any occurrence possibility, the climate related R&O s could be assessed before financial planning
Assets	Not impacted	It is assessed that climate change may not pose risks on the Assets for ASELSAN. The climate related risks and opportunities are assessed base on changing climate circumstances. In case of any occurrence possibility, the climate related R&O s could be assessed before financial planning
Liabilities	Not impacted	It is assessed that climate change may not pose risks on the liabilities for ASELSAN. The climate related risks and opportunities are assessed base on changing climate circumstances. In case of any occurrence possibility, the climate related R&O s could be assessed before financial planning
Other	Not impacted	There is not any other detected climate change related area which has impact on the financial planning process. But other areas are assessed internally.

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

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

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

ASELSAN has first reviewed its strategy and operations with respect to climate change after receiving the first invitation from CDP Turkey in 2012. Although energy efficiency was already a focal point for the operations, the effects of the energy efficiency studies on climate change were never assessed. Starting from 2012, ASELSAN Strategy Team has focused on evaluating ASELSAN's operations with regard to climate related issues. One of the first steps taken towards this direction was the calculation of our GHG Inventory. During the initial CDP period, a brief calculation was made for the three consecutive years starting from 2009 for the purpose of reporting to CDP.

As of 2012, we have started evaluating the risks and opportunities related to climate change with a specific risk assessment process aligned with the policies determined by the top management.

As the strategy of ASELSAN was determined over a period of 5 years, climate change related issues could not be included in the strategy up until 2014. However, in 2014, the Strategy Management Directorate has implemented the climate change related issues into the strategy of the term 2015-2019. As part of this strategy ASELSAN has initially planned to reduce the absolute GHG emissions until the end of this term. However, within this period, an additional production facility, Gölbaşı, has become operational and the emissions reduction target was revised accordingly to reflect this change.

In 2018 Energy Management System setup studies has commenced with some meetings. There are some pilot studies that the energy department is planning to put into practice in the med-term. The certification phase will be realized after the materialization of facility base efficiency projects

Turkey's National Contribution (INDC) plan is to reduce its emissions by 21% from 2030 BAU level by supporting the shift towards low carbon economy. ASELSAN closely follows the recent updates on climate change mitigation efforts made both nationally and globally. We support the Paris Agreement and its aim to limit global warming below 2 ° C and potentially keep it below 1.5 ° C. In order to reduce our GHG emissions intensity, we are exploring ways to implement the use of renewable energy sources in our production facilities. **As part of the most important component of our strategy regarding climate change, due to** efficiency of our carbon reduction projects, in the reporting period **we have revised our target's % reduction** from base year; from 4.7% to 64.12%.

The board of directors has ensured strategy and risks do not threaten the long-term interests of the company, and that effective risk management is in place. The agenda and minutes of board meetings indicate that the board of directors discussed and approved strategy, ensured that resources were adequately allocated and the Board also monitored company and management performance in climate related issues.

Climate related short-term and long-term strategy of our Group is aligned with the practices of our Renewable Energy Systems Program Management Department, which is responsible from R&D of renewable energy technologies. The department has started its studies on deploying renewable energy usage throughout our company and products. ASELSAN aims to be one of the main producers of renewable energy technologies in Turkey. Our Electric Vehicle Systems Program Management Department started an R&D project with TEMSA in March 2015 with the aim of producing the first domestic electric buses. Preliminary works related with TEMSA Avenue EV 12 mt. Electric Bus that is powered by ASELSAN electric traction system which will be used on a daily basis in real life conditions, has been completed. The first prototype which was co-developed together with Anadolu ISUZU was showcased in IAA (International Motor Show Germany) Fair. As transportation related GHG emissions account for nearly 14% of Turkey's total emissions, we aim to supply necessary electric vehicle systems designed for public transportation to decision makers of major municipalities of Turkey, and take part in Turkey's National Contribution (INDC) plan to reduce its emissions by 21% from 2030 BAU level by supporting the shift towards low carbon public transportation

While conducting such R&D activities, ASELSAN aims to develop a hybrid system to be portable and can be used both on-grid and off-grid. This new system will reduce the use of diesel back-up generators and result in energy consumption reduction and therefore GHG

emissions. This project that has been influenced by climate change is also the most important business decision made in 2016 and still ongoing while ASELSAN has expanded the scope of its renewable sources related R&D projects by focusing on developing hybrid system where both solar and wind power sources can be used interchangeably. There are plans to remove the obstacles facing the roll-out of electric vehicles by preparing for future battery technologies, ensuring longer range and shorter charging time.

We believe that the brand value and market value of ASELSAN will be positively affected and will gain a strategic advantage over the competitors with the implementation of these decisions ASELSAN was among the 15 firms that were approved to be included in BIST Sustainability Index and has been listed on it for five years in a row.

The Index's criteria on climate change strategy and management is totally aligned with CDP, which gave us an advantage against other listed companies. ASELSAN is placed in the A- list according to 2018 results, among the firms that most successfully manage climate change risks through production process and has the highest performance on GHG emissions. ASELSAN is the first and only company that is ranked with the highest initial score among Defense Industry firms in Turkey by participating in CDP survey. Our share is now favoured by environmentally friendly institutions as well, which provides us an additional advantage among our competitors. ASELSAN has been in BIST-50 Index of Borsa Istanbul as well as Corporate Governance Index since 2012 and Sustainability Index since its inception and was also included in BIST-30 Index in April 2017. Corporate governance rating is a prerequisite for presence in Corporate Governance Index of BIST. Climate change aspect is now embedded in our corporate governance rating. This fact encourages us to persistently increase the value we attach to climate change and energy efficiency. **ASELSAN's Corporate Governance rating, which was confirmed as 9.20 out of 10, was published by SAHA on 12 December 2018.** Our Company posted an exemplary performance in 2018, and climbed to 55th place in the ranking of the world's largest 100 defense industry companies.

C3.1g

(C3.1g) Why does your organization not use climate-related scenario analysis to inform your business strategy?

ASELSAN has initially planned to reduce the absolute GHG emissions in her production facilities. In 2015 Gölbaşı facility has become operational and the emissions reduction target was revised accordingly to reflect this change. In order to reduce our GHG emissions intensity, we are exploring ways to implement the use of renewable energy sources, and energy efficiency in our production facilities. Previous years were the assessment years of the climate related legislative framework for Turkish companies.

This framework was assessed base on emission reporting obligation risk driver, which does not pose additional operational cost hereafter for ASELSAN. Our company has put an emphasize on elements such as board oversight, climate risk assessment and management including integration into the company's business planning processes.

After such an uncertainty management and awareness raising period for the whole company, ASELSAN is ready now to use scenario analysis as a strategic planning tool to help herself understand how she might perform in different future states.

Turkey's National Contribution (INDC) plan is to reduce its emissions by 21% from 2030 BAU level by supporting the shift towards low carbon economy. We closely follow the recent updates on climate change mitigation efforts made both nationally and globally. We support the Paris Agreement and its aim to limit global warming below 2 ° C and potentially keep it below 1.5 ° C. ASELSAN is planning to implement climate-related scenario analysis as a strategic planning tool to explore potential futures and organization's business strategies resilience.

For this purpose, as of January 2018 ASELSAN' s Sustainability Committee started to study on some scenario analysis to inform the business strategy starting from 2019.

To evaluate potential outcomes based on assumptions, and to understand how adjusting one or more of these variables impact the organisation's business, a top-down approach has been chosen. For a suitable strategic thinking and strategy formulation, as a first step the IMS Committee has started the scenarios training in April 2018. Transitional (IEA 450, 2DS, IEA INDC) and physical scenarios were assessed. The discussion on related scenarios was started. After the review of publicly available climate related scenarios and the outcomes of Ministerial studies on Turkey's last NDC which will be revised until the next Climate Summit, we are planning to develop our own organisational and business specific scenarios in 2020. As we are advancing in monitoring our GHG emissions and assessing our emissions trend in a more advanced way, we are planning for taking the low-carbon development scenario into account while planning our future strategies.

The key considerations of assumptions are: Discount rate, carbon price, assumptions about CO2 price via trading scheme, energy demand and mix, price of key commodities/ products & LCA thinking, efficiency, technology, national carbon emission target, subsidies for fossil fuels, temperature increase relative to CO2 increase.

Analytical choices such as timing, scope of application are the main subjects.

Business Impacts/Effects will be studied for different areas such as earnings, costs, revenues, assets, investments, timing etc.

ASELSAN's management is aware that scenario analysis not only identifies potential risks but can also offer insight into opportunities including energy efficiency, changes in energy sources and/or technologies, new products and services, new markets or assets, and increased resilience.

ASELSAN aims to be one of the main producers of renewable energy technologies in Turkey. The most important aspect of climate change that influences our strategy is the opportunity to develop a green business. Although we are not yet influenced by the regulatory changes in Turkey, it is also another aspect of climate change, as we like to be prepared to the changes in regulation. Another important component is that our Renewable Energy Systems Program Management Department, which is responsible of R&D of renewable energy technologies, has started its studies on deploying renewable energy usage throughout our company and products

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Intensity target

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

Int 1

Scope

Scope 1+2 (location-based)

% emissions in Scope

100

Targeted % reduction from base year

64.12

Metric

Metric tons CO₂e per unit revenue

Base year

2016

Start year

2016

Normalized base year emissions covered by target (metric tons CO₂e)

0.000014

Target year

2022

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

% of target achieved

83

Target status

Revised

Please explain

100% of emissions in scope are covered in this target. As a consequence of the effectiveness of our ambitious carbon reduction projects, we revised this target's % reduction from base year; from 4.7% to 64.12%.

There will be an increase in the absolute emissions in the following years as a consequence of our growth and expansion projects. The increase in the absolute emissions will be at minor level compared to our growth in all business dimensions.

Our intensity figure at base year was 0.000014

Our intensity figure 2017 is 0.000011

Our intensity figure 2018 is 0.000006

Our intensity figure at target year will be 0.000005

In the following years there will be a continuous increase at % achieved till target year.

Our revenue and GHG emissions reduction target is monitored and revised regularly.

However, we can only share our projected revenue growth in 1-year forecast periods.

We consider our revenue projections over 5 years as commercially sensitive data.

Specific confidentiality constraints prohibiting the disclosure.

% change anticipated in absolute Scope 1+2 emissions

28.22

% change anticipated in absolute Scope 3 emissions

0

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	2	1,000
To be implemented*	4	1,200

Implementation commenced*	2	500
Implemented*	6	1,143.35
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative type

Energy efficiency: Building services

Description of initiative

Lighting

Estimated annual CO2e savings (metric tonnes CO2e)

39.43

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

26,000

Investment required (unit currency – as specified in C0.4)

54,000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

For the purpose to be efficient in energy consumption, 2000 units of 18 W fluorescent bulbs were replaced with 8W LED bulbs, in Macunköy facility. In this way, 55% savings have been achieved. The CO2-e calculation was verified by third party, for the initiatives implemented in the reporting year.

Initiative type

Energy efficiency: Processes

Description of initiative

Machine replacement

Estimated annual CO2e savings (metric tonnes CO2e)

248.22

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

302,500

Investment required (unit currency – as specified in C0.4)

320,000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

For the purpose to be efficient in energy consumption, compressed air machine was replaced with an efficient one in Akyurt facility. We have achieved a saving of 550000 kWh/year The CO2-e calculation was verified by third party for the initiatives implemented in the reporting year.

Initiative type

Energy efficiency: Building services

Description of initiative

HVAC

Estimated annual CO2e savings (metric tonnes CO2e)

88.48

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

65,000

Investment required (unit currency – as specified in C0.4)

86,580

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Reverse Osmosis" system was installed for the steam boilers' feed water conditioning and the conductivity was diminished. Thus, the amount of boiler blow down was reduced and natural gas and chemical consumption was decreased in the Gölbaşı facility. We have achieved a saving of 45000 m³ NG/year and 3650 m³ water/year. 1,26 tCO₂e of this saving is related to Scope 3.

The CO₂-e calculation was verified by third party, for the initiatives implemented in the reporting year.

Initiative type

Energy efficiency: Building services

Description of initiative

HVAC

Estimated annual CO₂e savings (metric tonnes CO₂e)

571.81

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

420,000

Investment required (unit currency – as specified in C0.4)

128,000

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

The hot water ejected from the blow down of the steam boilers and the heat of the flash vapor release degassed into the atmosphere were recovered by the heat exchanges and transferred to the closed circuit. The project consists of 2 stages. This activity enabled natural gas consumption reduction in the Gölbaşı facility. We have achieved a

saving of 295000 m3 NG/year. The CO2-e calculation was verified by third party, for the initiatives implemented in the reporting year.

Initiative type

Energy efficiency: Building services

Description of initiative

Motors and drives

Estimated annual CO2e savings (metric tonnes CO2e)

180.52

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

175,000

Investment required (unit currency – as specified in C0.4)

288,600

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Energy consumption was reduced by adding inverter system to the cooling towers fan motors in the Gölbaşı facility. We have achieved a saving of 400000kWh/year. The CO2-e calculation was verified by third party, for the initiatives implemented in the reporting year.

Initiative type

Energy efficiency: Building services

Description of initiative

Motors and drives

Estimated annual CO2e savings (metric tonnes CO2e)

14.89

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

38,000

Investment required (unit currency – as specified in C0.4)

67,340

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Energy and oil consumption were reduced by using dry-screw type and inverter vacuum pump instead of oil and pulley type vacuum pump in Gölbaşı facility. We have achieved a saving of 33000 kWh/year. The CO2-e calculation was verified by third party, for the initiatives implemented in the reporting year

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Financial optimization calculations	In ASELSAN, we constantly try to develop projects that increase energy efficiency. When we have a project idea, the related directorate makes a detailed feasibility analysis that shows how much investment is required for a certain project and how much savings (both in terms of energy and financial savings) can be achieved with that particular project. If the payback period of the project is below 5 years and if the project lifetime is over 10 years, a report is prepared and the project is submitted for budget approval. Then this project is included in the budget plans for the upcoming year. In September 2018 the GHG emission target revision was materialized by Corporate Management Committee for the strategic planning covering the period 2018-2022. It is explained with details, in section 4.1 b
Dedicated budget for low-carbon product R&D	ASELSAN aims to be a responsible producer for a globally responsible consumption. Substitution of existing products with lower emission options is aligned with the Research and Development activities. There is an increased demand for new low carbon technologies, materials, products and services such as smart digital solutions, smart mobility, solar cells, insulation etc. for different sectors. ASELSAN aims to be one of the main producers of renewable energy technologies in Turkey in the mid- term. The Electric Vehicle Systems Program Management Department started a Research and Development project with TEMSA in March 2015 with the aim of producing the first domestic electric buses. As transportation related GHG

	<p>emissions account for nearly 14% of Turkey's total emissions, it is aimed to supply necessary electric vehicle systems designed for public transportation to decision makers of major municipalities of Turkey ASELSAN being a leading defense industry establishment developing advanced technology system solutions on land, air, naval and aerospace platforms, has given importance to Research and Development activities and technological gains and targets since it was founded. Besides, it aims to spend approximately 7% of the annual turnover to its Research and Development activities financed with its own resources. More than 3500 employees work in the six R&D centers within the company.</p> <p>ASELSAN's total R&D expense was 2163 TL million in 2018</p>
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C4.5

(C4.5) 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

C4.5a

(C4.5a) 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

Group of products

Description of product/Group of products

Renewable Energy Systems

Activities have been carried out to develop innovative and original technologies which will provide an efficient and uninterrupted supply of electricity from Turkey's extensive renewable energy resources, specifically aimed at solar and wind energy. Critical components have been developed with the maximum national means in order to provide a competitive advantage in micro grid base hybrid renewable energy system solutions. In the field of wind energy, the design, development and production processes of full scale wind energy power converter systems and power grid connection algorithms, which are required by wind turbine manufacturers, have been completed. The first 300 kW power converter systems, which was ordered by the Northel EMK Company, has been successfully commissioned in the field.

In the field of solar energy, very high efficiency c-Si photo voltaic cell and module development studies have been continuing with the IBC (Interdigitated Back Contact) technology. Within the scope of the joint studies carried out with GÜNAM at Middle East Technical University, production infrastructure has been completed and prototype IBC solar cells have been manufactured. The efficiency values of c-Si cells produced in the

existing production lines are mostly around 17-20%. The efficiency of IBC solar cells exceeds 20%. Since IBC solar cells do not have any optical losses due to the metal on the front surface, the light coming to the surface is absorbed with much less loss. As the amount of light absorbed increases, the number of charge carriers to be formed in the cell increases and consequently the amount of current light obtained from that cell increases. For this reason, higher efficiency values are obtained with solar cells connected to the rear. In addition to the reduction of optical losses, IBC solar cells during the modulation process have much less space than standard cells. For this reason, higher module efficiencies are achieved when using IBC solar cells. Hybrid energy system solutions have been developed for military and civilian applications, providing reliable, economical and clean energy from the sun and wind. The design and production of the GURU Kompakt, a hybrid system integrated within a container, was completed and systems are in use in the field.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

2006 IPCC Guidelines for ghg inventories

% revenue from low carbon product(s) in the reporting year

Comment

Preliminary work for Renewable Energy Micro Grid System R&D project has been completed. Detailed studies and designs will be performed in 2019.

These climate resilient goods and services will allow third party to avoid emissions. After serial production the % revenue of these products will be identified as sales figures.

Level of aggregation

Group of products

Description of product/Group of products

Energy Management and Smart Grid Systems

System solutions consisting of critical hardware, algorithms and software for the National Smart Grid Network Management have been developed in order to transmit electricity efficiently, flexibly and effectively from the generation of electricity to its consumption throughout the country. In this context, the following have been carried out through national means in order to reduce external dependency and to provide energy distribution and transmission securely; Development works of Advanced Energy Measurement and Management Unit and Power Quality Measurement Devices, as

smart network power and control equipment, has continued. DEPAR Power Quality Analyzer and Measurement Devices, which were developed under the project implemented together with Boğaziçi Elektrik Dağıtım A.Ş. were installed, tested and commissioned. Development work continued on the National SCADA and National Energy Management systems, including the critical information security algorithms and software required for energy transmission and distribution. The design of the ARTU - Advanced Remote Terminal Unit has largely been completed and preparations for the first experiments in live systems have got underway by continuing algorithm and software development studies. Necessary preliminary studies were carried out for the qualification tests and certification process - which will be carried out in 2019 - of ARTU, which is targeted to be widely used in electricity, natural gas, oil and water transmission and distribution systems. Preliminary work of National SCADA system for crude oil pipeline automation project has been carried out. These systems ease the management and integration of renewable energy resources and electric vehicles, thus leads to reducing carbon emissions caused by conventional energy resources like natural gas, coal and fuels. SCADA systems operating over critical infrastructures like electricity, oil and gas transmission/distribution systems enable system operators to supervise system status in real time. By improving the system observation, SCADA systems increase the control ability of these infrastructures.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

2006 IPCC Guidelines for GHG inventories

% revenue from low carbon product(s) in the reporting year

Comment

These climate resilient goods and services will allow third party to avoid emissions. Detailed studies and designs will be performed in 2019. After serial production the % revenue of these products will be identified as sales figures.

Level of aggregation

Group of products

Description of product/Group of products

Multilane Free Flow Electronic Toll Collection System (MLFF-ETC) which does not affect traffic on the highway during its operation, enables the collection of tolls from highways around large cities such as Istanbul, and also enables applications aimed at

preventing traffic congestion resulting with high ghg emissions in urban roads, by introducing electronic road charging methods.

MLFF Vehicle recognition system, recognizes the license plate of a vehicles on the roadway. Vehicles of interest are identified and tracked throughout different system locations. MLFF system that allows highway users to pass through tolling point at high speed even when changing lanes without having to slow down to pay for toll. Congestion at MLFF is decreased at about %21 according to toll plazas. MLFF system reduces congestion rate at the Toll Plazas by increasing vehicles' throughput at more than 1500 vehicles per hour. The research shows that the average delay on vehicle is 13 seconds per vehicle/ km (comparing to the MLFF). In general, higher penetration rates give better results in term of emission reductions. On the highway road, modeled benefits at the macro level are 1.5% reduction in CO2 emissions for a %20 penetration rate, 4.5% reduction in CO2 emissions for a %60 penetration rate, 6.5% reduction in CO2 emissions for a %90 penetration rate. Thus MLFF improve public transportation and help to reduce air pollution, NOx and CO2 and road noise via a decline in traffic. Activities to install Toll Collection Systems on the newly opened road sections have been continued in 2018 as well. New toll collection stations have been added to the existing tolling systems. In 2018, ASELSAN's tolling systems achieved a record by collecting tolls from about 300 million vehicles both on the 2,200 km long state operated highways and on the highways operated by private concessions. The activities for this important tolling project will be continued in 2019 as well.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

2006 IPCC Guidelines for GHG inventories

% revenue from low carbon product(s) in the reporting year

1

Comment

ASELSAN Toll Collection Systems are also used in Turkey's showcase Public Private Partnership (PPP) highway projects.

Level of aggregation

Group of products

Description of product/Group of products

ASELSAN has begun her activities to develop the energy management system which improves efficiency for railway transportation vehicles and reduces costs. In this system, it will become possible to reduce the electricity consumption of railway transportation vehicles and allow railway vehicles to be operated without a catenary system. With its

modular structure, which can be used in both the vehicle and the station, the Energy Management System (EMS) allows railway vehicles, particularly trams, to be operated without a catenary system, allowing energy savings of up to 30% on public railway lines. In this context, the Energy Management System has been developed in order to store the braking energy in the Hybrid Shunting Locomotive, to achieve emission-free operation in the close areas, to reduce the noise level and to ensure fuel saving.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

2006 IPCC Guidelines for ghg inventories

% revenue from low carbon product(s) in the reporting year

Comment

Development, production and testing activities are carried out with the aim of providing Battery Management System, Traction System (Motor Inverter and Electric Motor), Vehicle Control and Management System, along with vehicle safety software and hardware (Advanced Driving Assistance Systems) - which are the basic critical components for electric vehicles - to vehicle manufacturers and organizations (OEMs and shipyards) in a cost effective manner.

Level of aggregation

Group of products

Description of product/Group of products

Development, production and testing activities are carried out with the aim of providing vehicle safety software and hardware (such as autonomous vehicle control and automatic braking) along with Battery Management System, Traction System (Engine Driver Unit and Electric Engine), Vehicle Control and Management System, advanced sensor (day / night vision camera, LIDAR, RADAR etc.) units - which are the basic critical components for land, sea and airborne electric vehicles - to vehicle manufacturers and organizations (such as factories and shipyards) in a cost effective manner.

Preliminary works related with TEMSA Avenue EV 12 mt. Electric Bus that is powered by ASELSAN electric traction system which will be used on a daily basis in real life conditions has been completed. The first prototype which was co-developed together with Anadolu ISUZU was showcased in IAA (International Motor Show Germany) Fair.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

2006 IPCC Guidelines for ghg inventories

% revenue from low carbon product(s) in the reporting year

Comment

The design activities for electric public transportation vehicles, which are required by public institutions in Turkey, have been carried out at the level of joint feasibility studies with the authorities requiring them. Promotional activities have been carried out at municipalities, especially for electric buses that are needed by municipalities for public transportation. After serial production the % revenue of these products will be identified as sales figures.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1, 2016

Base year end

December 31, 2016

Base year emissions (metric tons CO₂e)

11,999.36

Comment

In 2015, the Gölbaşı Facility has started its operations and the system boundary has been revised accordingly.

Scope 2 (location-based)

Base year start

January 1, 2016

Base year end

December 31, 2016

Base year emissions (metric tons CO₂e)

38,650.54

Comment

Only location-based result has been used, there is no market based figure.

Scope 2 (market-based)

Base year start

January 1, 2016

Base year end

December 31, 2016

Base year emissions (metric tons CO2e)

Comment

There is no market- based figure.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

IPCC Guidelines for National Greenhouse Gas Inventories, 2006

ISO 14064-1

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

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

10,737.51

Start date

January 1, 2018

End date

December 31, 2018

Comment

The data covers the ghg emissions of all the facilities located in Ankara and Istanbul.

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We have no operations where we are able to access electricity supplier emission factors or residual emissions factors and are unable to report a Scope 2, market-based figure

Comment

In ASELSAN, only the electricity purchased from National Interconnected System Grid is consumed.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO₂e?

Reporting year

Scope 2, location-based

37,662.62

Start date

January 1, 2018

End date

December 31, 2018

Comment

This figure represents the purchased electricity from National Interconnected System ASELSAN do not have any source of market based scope 2 emissions.

C6.4

(C6.4) 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

C6.4a

(C6.4a) 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

Temporary Project offices in various locations in Turkey.

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

No emissions from this source

Explain why this source is excluded

We have a small number of temporary offices in various locations in Turkey. However, these offices only operate during particular project period and may not operate throughout the reporting period which makes it hard to monitor or control. Since these offices constitute a negligible operational volume, they are classified as de-minimis GHG emission sources, and are excluded from the boundary.

C6.5

(C6.5) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Not relevant, explanation provided

Explanation

For this source of scope 3 emissions, we are planning to engage with our local main suppliers by training on procurement, quality and environmental management issues. For the time being, activity data gathering is difficult for our suppliers. Green procurement process will be in the concern of our company. We will focus more on these issues in 2020 based on a combination of the energy intensity of the commodities supplied and the business relationship of our main suppliers among others

Capital goods

Evaluation status

Not relevant, explanation provided

Explanation

Green procurement process is in the concern of our company. Due to the complexity of gathering information, the company does not have the information and inventory to

account for the emissions associated with this source. ASELSAN does not predict the full inclusion over a five years period.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Not relevant, explanation provided

Explanation

In the next two years we are planning to obtain data by: Reference to the scope 1 GHG inventory, including sources and types of fuels consumed and collect data from the fuel procurement department. If necessary, collect data from fuel suppliers; and/or reference to life cycle databases and/or GHG Protocol website.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

13.09

Emissions calculation methodology

DEFRA: Freighting goods-2018

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

This data is provided from our main chemical material suppliers who transport chemicals inside our Macunköy Facility by using roadway. The great majority of this transportation's GHG gases comprise CO2 from exhaust emissions (fuel usage). We are planning to have a clear climate change related procurement policy to measure and reduce CO2 emissions generated from upstream transportation of chemicals The verification of this category is fulfilled by the 3rd party audit for 2018 activities.

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

226.88

Emissions calculation methodology

The assessment and the data gathering process is in place. Waste generated in operations is calculated based on Defra 2018 methodology on waste disposal. Waste water generated from operations is calculated based on Defra 2018 methodology on water treatment

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

This data is the sum of hazardous & scrap wastes and waste water.

The first group have an emission of 20.77 tons CO₂-e. This data is provided by ASELSAN and reported to the Ministry in the reporting year.

Waste water having an emission of 206.11 tons CO₂-e is discharged into the municipal sewer system. The verification of all the categories is fulfilled by the 3rd party audit for 2018 activities.

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

6,194.64

Emissions calculation methodology

The assessment and the data gathering process is in place. Air travel based emission is calculated based on DEFRA 2018 methodology for business travel-air.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

The data is provided by ASELSAN's travel supplier. The verification of this category is fulfilled by the 3rd party audit for 2018 activities.

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

740.89

Emissions calculation methodology

The assessment and the data gathering process is in place. Employee commuting based data is calculated based on Defra 2018 methodology for business travel- land

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

This data covers the emissions from transportation of employees to and from work. The FTE number has increased in 2018. The verification of this category is fulfilled by the 3rd party audit for 2018 activities.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Explanation

We did not use upstream leased assets in 2018.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Explanation

We are planning to focus on improving our data collection system with lowest possible uncertainty in 4 years. Base on emissions calculation methodology, we can focus on Supplier-Specific Method

Processing of sold products

Evaluation status

Not relevant, explanation provided

Explanation

Our products are not processed or re-processed any further after they have been sold. Consequently the scope 3 category "Processing of sold Products" is not relevant for ASELSAN

Use of sold products

Evaluation status

Not relevant, explanation provided

Explanation

This emission source is out of the boundary due to data gathering problem in the usage phase of sold products

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Explanation

This emission source is out of the boundary due to the lack of data about the end of life treatment of sold products

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Explanation

There are not any leased downstream assets in ASELSAN This emission source has been excluded from the boundary

Franchises

Evaluation status

Not relevant, explanation provided

Explanation

ASELSAN has no franchises This emission source has been excluded from the boundary

Investments

Evaluation status

Not relevant, explanation provided

Explanation

No investment related emissions realised within the reporting year. In case of any new investment we can focus on Supplier- Specific Method

Other (upstream)

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

7,824.24

Emissions calculation methodology

The assessment and the data gathering process is in place. In addition to food and beverage consumption, Glass and Paper consumption data is calculated based on methodology for DEFRA: Material Use – 2018.

Water supply data is calculated based on methodology for DEFRA: Water Supply – 2018.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

The boundary of other upstream scope 3 emissions is enlarged by ASELSAN We have assessed and revised the data quality of our food and beverage, glass and paper consumption. The data is procured from the suppliers.
The water supplied by ASKİ- mains supply network, is added to the boundary

The emissions in metric tonnes CO₂-e are as follows: 7613.23(F&B), 0.87(Glass),
74.93(Paper), Water Supply (135.21)

The verification of all the categories is fulfilled by the 3rd party audit for 2018 activities

Other (downstream)

Evaluation status

Not relevant, explanation provided

Explanation

There are no additional other downstream emission sources for the reporting year

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO₂e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.000006

Metric numerator (Gross global combined Scope 1 and 2 emissions)

48,400.13

Metric denominator

unit total revenue

Metric denominator: Unit total

7,594,791,351

Scope 2 figure used

Location-based

% change from previous year

40.94

Direction of change

Decreased

Reason for change

The main reason of intensity figure reduction is the revenue growth compared to previous year.
Secondly, the other emission reduction activities implemented during 2018 (question 7.9a).

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO ₂ e)	GWP Reference
CO ₂	9,658.49	IPCC Fifth Assessment Report (AR5 – 100 year)
CH ₄	6.36	IPCC Fifth Assessment Report (AR5 – 100 year)
N ₂ O	24.46	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	1,048.2	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO ₂ e)
Turkey	10,737.51

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By facility

By activity

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Macunköy	3,296.91	39.96763	32.76631
Akyurt	2,932.43	40.08628	33.02409
Gölbaşı	4,304.43	39.71837	32.81612
Teknokent	154.69	39.89353	32.77346
Şişli	9.2	41.05613	28.98536
Teknopark	39.85	40.8513	29.28764

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO2e)
Natural Gas Consumption for heating, boilers and kitchen	7,969.21
Diesel consumption for generators and fire pumps	342.81
LPG consumption at kitchen	1.81
CNG consumption in the production process	0.05
Gasoline consumption for company cars	78.26
Diesel oil consumption for company cars	1,290.59
Diesel oil consumption for forklifts	6.19
Fugitive emissions from air conditioning system	579.06
Fugitive emissions from fire extinguishers	469.52

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons 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)
Turkey	37,662.62		83,453.63	

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By facility

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2 location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Macunköy	15,434.14	
Akyurt	11,525.83	
Gölbaşı	10,241.09	
Teknokent	405.96	
Şişli	0.63	
Teknopark	54.96	

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) 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.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change		
Other emissions reduction activities	1,142.09	Decreased	2.36	Other emission activities implemented during 2018 have been resulted with a reduction of 1,142.09 tons of CO2-e. The total scope 1 and scope 2 emissions in the previous year was 48,403.37 tons of CO2-e. We arrived at 2.36% through $(-1,142.09/48,403.37)*100 = -2.36\%$
Divestment	0	No change		
Acquisitions	0	No change		
Mergers	0	No change		

Change in output	0	No change		
Change in methodology	548.12	Increased	1.13	Previous year the electricity emission factor used in the calculation referred to IEA 2015 Report. This year in line with the update of IEA, we started to use, IEA 2016 Report emission factor in our inventory calculation. In IEA 2015 Report, the emission factor was 0.000444732 and in IEA 2016 Report, the emission factor is 0.0004513. Calculation $(548.12/48,403.37) * 100 = 1.13\%$
Change in boundary	0	No change		
Change in physical operating conditions	0	No change		
Unidentified	0	No change		
Other	590.73	Increased	1.22	Due to changes in the amount of usage of the emission sources. The major items which has the highest impact on the change are electricity and natural gas consumption. The electricity consumption is 3.14% more compared to previous year. On the other side the natural gas consumption is 15.67% less compared to previous year.

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

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

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	No

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	0	50,105.11	50,105.11
Consumption of purchased or acquired electricity		0	83,453.63	83,453.63
Total energy consumption		0	133,558.74	133,558.74

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	No
Consumption of fuel for the generation of heat	Yes

Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

43,744.84

Comment

The natural gas is consumed for heating purpose in the facilities of ASELSAN.

The verification of the total fuel consumed by the organization is fulfilled by the 3rd party audit for 2018 activities

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

6,045.46

Comment

In the organization, diesel/ gas oil is consumed in 3 different activities that the calculation is the sum of these activities.

Diesel/Gas oil for stationary activities

Diesel/Gas oil for mobile activities

Diesel/Gas oil for Off Road activities

The verification of the total fuel consumed by the organization is fulfilled by the 3rd party audit for 2018 activities

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

7.98

Comment

The verification of total fuel consumed by the organization is fulfilled by the third party audit for 2018 activities.

Fuels (excluding feedstocks)

Motor Gasoline

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

306.56

Comment

The verification of the total fuel consumed by the organization is fulfilled by the 3rd party audit for 2018 activities.

Fuels (excluding feedstocks)

Compressed Natural Gas (CNG)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

0.28

Comment

CNG is consumed in Akyurt facility.

The verification of total fuel consumed by the organization is fulfilled by the third party audit for 2018 activities.

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Compressed Natural Gas (CNG)

Emission factor

0.00194

Unit

metric tons CO2 per m3

Emission factor source

IPCC Chapter 2 Stationary Combustion (Table 2.3).

The verification of this emission factor is fulfilled by the third party audit for 2018 activities.

Comment

CNG is consumed in Akyurt facility.

The verification of this emission factor is fulfilled by the third party audit for 2018 activities.

Diesel

Emission factor

0.0029

Unit

metric tons CO2e per liter

Emission factor source

IPCC Chapter 2 Stationary Combustion (Table 2.3)

IPCC Chapter 3 Mobile Combustion (Table 3.2.1 and 3.2.2)

IPCC Chapter 3 Mobile Combustion off road (Table 3.3.1)

The verification of these emission factors is fulfilled by the 3rd party audit for 2018 activities.

Comment

Diesel/ Gas oil is consumed in 3 different activities that the calculation is based on following tables and the result is the sum of these activities for all facilities.

Diesel/Gas oil for stationary activities IPCC Chapter 2 Stationary Combustion (Table 2.3)

Diesel/Gas oil for mobile activities IPCC Chapter 3 Mobile Combustion (Table 3.2.1 and 3.2.2)

Diesel/Gas oil for Off Road activities IPCC Chapter 3 Mobile Combustion off road (Table 3.3.1)

The verification of these emission factors is fulfilled by the 3rd party audit for 2018 activities.

Liquefied Petroleum Gas (LPG)

Emission factor

0.00288

Unit

metric tons CO₂e per metric ton

Emission factor source

IPCC Chapter 2 Stationary Combustion (Table 2.3)

The verification of this emission factor is fulfilled by the third party audit for 2018 activities.

Comment

IPCC Chapter 2 Stationary Combustion (Table 2.3)

The verification of this emission factor is fulfilled by the third party audit for 2018 activities.

Motor Gasoline

Emission factor

0.00227

Unit

metric tons CO₂e per liter

Emission factor source

IPCC Chapter 3 Mobile Combustion (Table 3.2.1 and 3.2.2)

The verification of these emission factors is fulfilled by the 3rd party audit for 2018 activities.

Comment

IPCC Chapter 3 Mobile Combustion (Table 3.2.1 and 3.2.2)

The verification of these emission factors is fulfilled by the 3rd party audit for 2018 activities.

Natural Gas

Emission factor

0.00194

Unit

metric tons CO₂e per m³

Emission factor source

IPCC Chapter 2 Stationary Combustion (Table 2.3)

The verification of this emission factor is fulfilled by the third party audit for 2018 activities.

Comment

The verification of this emission factor is fulfilled by the third party audit for 2018 activities.

C8.2f

(C8.2f) Provide details on the electricity, heat, steam and/or cooling amounts that were accounted for at a low-carbon emission factor in the market-based Scope 2 figure reported in C6.3.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description

Waste

Metric value

967.72

Metric numerator

Tonnes of waste

Metric denominator (intensity metric only)

% change from previous year

17

Direction of change

Increased

Please explain

The previous years' metric value was 826.44 tonnes of waste generated from the locations in Ankara.

ASELSAN manages the waste generated from its operations by taking the waste management hierarchy into account in a manner that minimizes their environmental impacts. This management approach starts by reducing waste at the source and continues with waste reuse, recycling and disposal as a last resort.

The verification of regularly reported wastes to MoEU is fulfilled by the 3rd party audit for 2018 activities.

Detailed information about all waste categories : ASELSAN Sustainability Report 2018
Page 42-43

Description

Other, please specify

Waste water discharged into sewer system

Metric value

291,111

Metric numerator

Cubic meter of waste water

Metric denominator (intensity metric only)

% change from previous year

11

Direction of change

Decreased

Please explain

The previous years' metric value was 324048 m3 waste water discharged into the sewer system. The verification of this data is fulfilled by the 3rd party audit for 2018 activities.

Despite the increase in FTE and other activities the waste water generated was reduced 11%

As in all environmental activities, water management practices in ASELSAN are conducted fully in compliance with the legislation and the wastewater discharge standards are determined in accordance with ASKI Wastewater Sewerage Network Discharge Regulation.

Description

Energy usage

Metric value

50,105.11

Metric numerator

MWh from non-renewable sources

Consumption of fuel

Metric denominator (intensity metric only)

% change from previous year

6

Direction of change

Decreased

Please explain

The previous years' metric value was 53094.69 MWh, as energy use
Despite the increase in FTE and other activities the energy used was reduced 5.63%

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 and/or Scope 2 emissions and attach the relevant statements.

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

 2018 ASELSAN Carbon Footprint Verification Opinion Statement Scope 1 and 2.pdf

Page/ section reference

2018 ASELSAN Carbon Footprint Verification Opinion Statement Scope 1 and 2 (Page 1)

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

 2018 ASELSAN Carbon Footprint Verification Opinion Statement Scope 1 and 2.pdf

Page/ section reference

2018 ASELSAN Carbon Footprint Verification Opinion Statement Scope 1 and 2 (Page 1)

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope

Scope 3- all relevant categories

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Attach the statement

 2018 ASELSAN Carbon Footprint Verification Opinion Statement Scope 3.pdf

Page/section reference

2018 ASELSAN Carbon Footprint Verification Opinion Statement Scope 3 (Page 1)

Relevant standard

ISO14064-3

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

No, we are waiting for more mature verification standards and/or processes

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

No, but we anticipate being regulated in the next three years

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

Utilization of carbon pricing options offer the most cost-effective way of mitigating climate change and can be helpful for countries in upholding their mitigation commitments or potentially exceeding them. The two main policy options that are being used as carbon pricing mechanisms are carbon taxation and emissions trading systems (ETS).

While Turkey does not yet have carbon pricing systems in place, it has started to explore opportunities to implement a National Emissions Trading Scheme.

Within the scope of the Partnership for Market Readiness Project (PMR) Turkey, “Modelling of Financial, Economic and Sector Impacts of Carbon Pricing in Turkey” component, which was implemented as of March 2017 has been completed. In this context, results of modelling studies were evaluated with public and private sector representatives on March 15, 2018.

The functioning of “CGE-computable genetic equilibrium” and IMM-Industrial Market Modelling models were analysed through exercising different carbon pricing policies on the model. The outputs of modelling studies will be developed with valuable opinions acquired at the meetings and will take place in the “Synthesis Report” which is the final output of the PMR Project.

The set up of a pilot ETS in Turkey – comes within political reach.

Based on its own operational and technological capabilities, the energy sector has some concerns about ETS, carbon tax and other market based instruments and activities.

In Turkey, emission data is reported to the Ministry annually by high energy intensive sectors according to the MRV regulation. ASELSAN is not in the scope of this regulation yet. However, since we have established our ISO 14064-1 system and have been calculating our emissions and processing verification by accredited third parties, we are ready to report our emissions. We anticipate that Ministry will include in three years, probably at the second quarter of 2020 the sectors which are in the scope of MRV Regulation first.

We are ready to comply with the schemes when the market is once established in Turkey. National ETS or taxation system can influence our company in 2022.

As part of our involvement in this new upcoming system, we plan to upgrade our energy efficiency with Energy Management Systems.

After 2019 renewable energy systems will be established starting from Macunköy Facility. For the purpose to drive opportunities in this new system, ASELSAN has already begun to position as a leader in technology base projects in order to meet the needs of all stakeholders in the global energy systems market with efficient, reliable, economic, high quality state-of-the-art products and services in the areas of electricity generation, transmission, distribution, consumption and management.

ASELSAN has established programs for the R&D, design, production, integration and after sales support in the following areas:

- Energy Management and Smart Grid Systems and
- Renewable Energy Systems.

Development of system, software and hardware components for national and international markets have been targeted in the field of smart grids, in order to provide solutions for the monitoring, optimization and management of generation, transmission, distribution and consumption of energy systems for energy sector.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

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

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers

Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Compliance & onboarding

Details of engagement

Included climate change in supplier selection / management mechanism

% of suppliers by number

16

% total procurement spend (direct and indirect)

6.4

% Scope 3 emissions as reported in C6.5

5

Rationale for the coverage of your engagement

All our activities are carried out by focusing on the "sustainability" approach embedded in our strategy and business model. Our suppliers' performance has a significant impact on the management of economic, social and environmental issues of our company. The main contractor companies play an important part in providing deepening to the industry. To build an effective supply chain; the creation of qualified subcontractors/suppliers is highly critical in terms of sector productivity and sustainability.

Our first achievement was awareness raising on GHG emissions tracking of our main suppliers. The topics of GHG emissions measurement and climate change strategies are added into environmental management questionnaire and our suppliers are monitored and scored according to their replies.

The rationale for the coverage of this survey is Assessment of main suppliers having an impact on total procurement spent. We believe that this ratio will be extended in the next years. For our 2018 inventory, as a pre-assessment, we have requested data from our main subcontractors and 16 of them submitted their electricity and fossil fuel consumption data that corresponds to their production for ASELSAN. The figure is the same as the previous year's data, for the next year it is planned to use another data request system for the purpose to reach a high submission rate

Impact of engagement, including measures of success

ASELSAN works with a large number of domestic and foreign suppliers and subcontractors, it is of utmost importance to ensure material quality and supply continuity. Having a strong subsidiary infrastructure is among the elements that will support the company's business continuity, steady growth and global competitiveness. Besides, development of local subsidiary industry which is especially competent, reliable and value-added in the direction of national and local product development vision is important. In order to reduce the risk arising from the failure of suppliers and subcontractors to achieve the required technical competence, expertise, quality and climate related performance, the performance of suppliers is continuously measured and analyzed, and also to improve this performance, the Company supports, developments and implementations training and programs.

As for our suppliers, in order to provide efficient information transfer, ASELSAN Supplier

Portal started to be used in 2018, and by this way, monitoring and reporting of the data process/content between ASELSAN and its suppliers has been provided within Enterprise Resource Planning (ERP) system. On the other hand, information is also shared by ASELSAN website, joint organizations/workshops and face to face meetings. Our measure of success is to increase the response rate from suppliers and increase the rate of suppliers status from admissible to acceptable. We do not work with high risk level suppliers.

As an assessment result, we have seen that our suppliers' energy consumption is a Scope 3 GHG emission source that needs to be investigated further.

Therefore, not only do we plan to communicate with an increasing number of suppliers to collect data for the next reporting period, but also we aim to identify a key supplier group and seize opportunities to provide training for them for the purpose to better manage their energy performance and consequently reduce their GHG emissions, including target setting.

Comment

To ameliorate climate change related issues, ASELSAN is planning focusing on the lead players of her value chain: People, Customers and Suppliers. Employees training on climate issues, customers needs understanding and Suppliers capacity building development will be ASELSAN's method of engagement in 3 years. A contractual document intended to align all suppliers' policies and internal processes with all the principles that ASELSAN commits to respect is in place. Potential suppliers' environmental maturity assessment revision is in place.

ASELSAN has created an ecosystem with its subcontractors that "enables growth for others while self-growing". In line with the activities carried out by the Committee established in 2018 to further activate this ecosystem, ASELSAN held the 1st Power Union Summit in February 2019 with the goal of increasing interaction by sharing road maps and targets.

At the Summit, products to be developed with subcontractors are published and shared in the form of brochures. The companies that aspire to develop these products apply to ASELSAN and explain their competencies and infrastructure. Product feasibility, necessities and sales objectives for these products are finalized through mutual evaluations

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Education/information sharing

Details of engagement

Share information about your products and relevant certification schemes (i.e. Energy STAR)

% of customers by number

31

% Scope 3 emissions as reported in C6.5

0

Please explain the rationale for selecting this group of customers and scope of engagement

Adopting a strategy in harmony with its vision and mission, ASELSAN aims to grow, embrace globalization, create value for its customers, conduct R&D studies, remain competitive and efficient, and improve its human capital and financial structure. In this respect, we have built a Strategic Plan covering a five-year period. Accordingly, we have developed a compliance monitoring program within the Strategic Management System. We also carry out examinations, analyses and reporting to support our strategic decisions.

World's leading defense industry companies, who provide the major portion of the defense needs of their country, lack of customer diversification caused by selling to mainly a single customer. The main client of the Company is the Public Institutions and Organizations, especially the Turkish Armed Forces. This situation is accompanied by the fact that the activities of the Company are generally directed towards the public demands of our country.

It is aimed to reduce this risk by working on increasing the sales abroad and carrying the existing know-how to the civilian sectors. Such as: Civilian satellites, surface and underwater technologies, railway signalling and modernization, health systems, naval electro-optical systems, unmanned vehicle systems, advanced material for the energy systems covering electricity generation; transmission, distribution, consumption and management areas.

ASELSAN realized 59% of its total sales to the Turkish Armed Forces, 31% of its sales to private organizations or other corporate customers, and with 10% of its exports.

We engage and raise our customers' awareness by information sharing on our products with the activities to offer system solutions, covering R&D, design, production, integration and after-sales support by focusing on Energy Management and Smart Grid Systems and Renewable Energy Systems (solar, wind and hybrid systems).

Impact of engagement, including measures of success

High quality standards and high technological solutions are offered for services or delivered products with regard to customer needs and expectations so as to meet customer satisfaction. Requirements of these quality standards are met and inspections, tests are applied through every process from projects' start till the delivery phases. Our all processes are administered by directives, quality plans, standards, audits and test instructions. Our processes have been certified by internationally accepted standards such as

AS 9100, ISO 9001, ISO 14001, ISO 14064, ISO 45001, AQAP and CMMI so that our products and services are secured to protect quality standards. These certificates are

renewed every year with the audits performed. Changes and improvements of international standards are being followed and our processes are developed accordingly. Customer satisfaction, which is the primary objective, is evaluated and reported for the access of related executives. In addition, results and trends are evaluated by the upper management in an annual basis and required recovery activities are planned.

In the reporting year; the company measured its customer satisfaction, and operated to ensure full customer satisfaction. Customers are notified of any delays in handling their requests. The company complied with the quality standards with respect to its products and services.

C12.1c

(C12.1c) Give details of your climate-related engagement strategy with other partners in the value chain.

ASELSAN's vision is to be a reliable, competitively preferred, environment-friendly and human conscious technology firm which preserves its sustainable growth in the global market via the values created for stakeholders, as well as serving its establishment purposes.

In order to achieve the sustainable growth:

- The quality and technological perspectives of the cooperation formed with the universities have been increased.
- ASELSAN employees are provided with the opportunity to study in the work environment with the initiation of ASELSAN Academy Postgraduate Training Program. The program serves the purpose of having the necessary technologies and developing existing technologies.
- The efforts to form an Eco-system with the sub-industry companies and SME's have continued.
- Company is continuing its operations in civil electronic areas which requires high technology.
- Inorganic expansion will be also evaluated as well as organic expansion

Implemented with the mission of increasing ASELSAN personnel's knowledge of the Company's field of activity, contributing to the applied academic development of the other stakeholders (universities, R&D center, institutions, subcontractors, etc.) that operate in our country, the ASELSAN Academy has become a new and innovative model of tremendous importance for Turkey which commands very high expectations.

Several universities were brought together through the ASELSAN Academy under the coordination of Council of Higher Education (YÖK), which became operational in 2017-2018 Fall Semester, forming a cooperation model in a single program. The ASELSAN Academy Model allows the applicant (the ASELSAN employee), who applies for the graduate program and fulfills the necessary conditions, to take courses and conduct R&D activities about the projects they involve as part of their engineering roles within the company.

In 2018, ASELSAN continued to grow its R&D activities in the framework of national goals, in areas such as energy, transportation, medical systems, and next generation cellular communication. ASELSAN aims to become a leading solution provider in these fields and continues innovative R&D projects in GaN Based Power Switching Elements, the fault detection solutions for traction systems, Contactless Power Transfer Technologies as a future solution for charging electric vehicles (EVs), under the university-industry collaboration

programs. In these studies, the goal is to develop efficient, compact and lightweight systems that aim to distinguish themselves.

DEPAR Power Quality Analyzer and Measurement Devices, which were developed under the project implemented together with Boğaziçi Elektrik Dağıtım A.Ş. were installed, tested and commissioned. Development work continued on the National SCADA and National Energy Management systems, including the critical information security algorithms and software required for energy transmission and distribution. The design of the ARTU - Advanced Remote Terminal Unit has largely been completed and preparations for the first experiments in live systems have got underway by continuing algorithm and software development studies. Necessary preliminary studies were carried out for the qualification tests and certification process - which will be carried out in 2019 - of ARTU, which is targeted to be widely used in electricity, natural gas, oil and water transmission and distribution systems.

The systems developed will aid in securing the energy supply for efficient and uninterrupted electric energy generated from Turkey's rich solar and wind energy resources. The critical components are developed with maximum national resources to be competitive in the local market. In the field of wind energy, the design, development and production processes of full scale wind energy power converter systems and power grid connection algorithms, which are required by wind turbine manufacturers, have been completed. The first 300 kW power converter systems, which was ordered by the Northel EMK Company, has been successfully commissioned in the field.

In the field of solar energy, very high efficiency c-Si photo voltaic cell and module development studies have been continuing with the IBC (Interdigitated Back Contact) technology. Within the scope of the joint studies carried out with GÜNAM at METU (Middle East Technical University), production infrastructure has been completed and prototype IBC solar cells have been manufactured.

- Hybrid energy system solutions have been developed for military and civilian applications, providing reliable, economical and clean energy from the sun and wind. The design and production of the GURU Kompakt, a hybrid system integrated within a container, was completed and systems are in use in the field.
- Preliminary work for Renewable Energy Micro Grid System R&D project has been completed. Detailed studies and designs will be performed in 2019.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

- Direct engagement with policy makers
- Trade associations

C12.3a

(C12.3a) 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	We follow the implementation of the regulation on monitoring and reporting of GHG emissions that was published on 2012 and revised in 2014 very closely. Although ASELSAN is not yet included in the scope of this regulation, we still participate in meetings and our Sustainability Committee is ready to send our comments about the Communiqués that are related to this regulation.	For the moment we support the legislation and the communiqués related to this legislation with no exceptions.
Energy efficiency	Support	We have sent our comments for the energy efficiency law no 5627 by the Ministry of Energy and Natural Resources during its preparation stage. We fully support this law.	We fully support the energy efficiency law and the related by-laws
Cap and trade	Support	The cap and trade principle which is the cornerstone of the EU's policy to combat climate change is adopted by EU-ETS. For the purpose to be ready to the future commitment this system was taken in the agenda of Turkish Ministry of Environment & Urbanization who announced that the phase 2 of PMR project studies will be started in 2019 and pilot implementations will be realized between 2020-2021. In order to manage this risk ASELSAN's Board chair assigned some sustainability committee members to participate the PMR meetings executed by the Ministry. This communication will prepare our company to this upcoming system	For the moment we closely follow up the PMR activities of MoEU

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

No

C12.3f

(C12.3f) 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?

Adopting a strategy in harmony with its vision and mission, ASELSAN aims to grow, embrace globalization, create value for its customers, conduct R&D studies, remain competitive and efficient, and improve its human capital and financial structure.

In this respect, we have built a Strategic Plan covering a five-year period.

Accordingly, we have developed a compliance monitoring program within the Strategic Management System. We also carry out examinations, analyses and reporting to support our strategic decisions.

According to our new corporate communication strategy, all communication activities have to be approved by our CEO/ Board Chairman who is the highest level of executive in ASELSAN, Our CEO/ Board Chairman is fully aware of our general corporate strategies and our overall climate change strategy. Moreover, our Sustainability Committee together with our Strategic Planning and Corporate Performance Directorate are responsible of setting and tracking actions to ensure our direct and indirect activities are consistent with our overall climate change strategy.

ASELSAN is placed in the A- list according to 2018 results, among the firms that most successfully manage climate change risks through production process and has the highest gas emission performance on the outcome of the research conducted by evaluating big firms including firms listed on Borsa İstanbul.

In ASELSAN, where decreasing carbon emission is one of the strategic goals, carbon emission has been monitored since 2009. Also, ASELSAN is the first and only company that is ranked with the highest initial score among Defence Industry firms in Turkey by participating in CDP survey.

ASELSAN has decreased carbon emission significantly through its efforts, and continues its operations by increasing momentum in the fields of increasing energy efficiency in production, giving priority to production technologies that decrease carbon emission, switching to use of energy that does not cause carbon emission.

Having certifications for ISO 14001 Environmental and OHSAS 45001 Work Health and Safety Integrated Management System; we will proceed to take part in pioneer applications through actualization of national and international initiatives.

In November 2014, Borsa Istanbul (BIST) has launched Sustainability Index that display the performance of January-March 2014 time period for BIST-30 firms in the fields of financial, environmental, social issues and corporate governance. With respect to that, as of this date, ASELSAN started publishing sustainability reports. As a result of the evaluation of our Company on the ASELSAN Sustainability Report, published in Turkish and English for the first time before the Index assessments, ASELSAN was among the 15 firms that were approved to be included in BIST Sustainability Index. In November 2018, ASELSAN kept its place in the index as a consequence of the re-evaluation of ASELSAN Sustainability Report which was published in June 2018.

C12.4

(C12.4) 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

In mainstream reports

Status

Complete

Attach the document

 ASELSAN Annual Report 2018.pdf

Page/Section reference

ASELSAN Annual Report 2018

Pages: Governance: 20-21, Strategy: 30-33

https://www.aselsan.com.tr/Annual_Report_2018_8711.pdf

Content elements

Governance

Strategy

Comment

Publication

In voluntary sustainability report

Status

Complete

Attach the document

 ASELSAN Sustainability Report 2018.pdf

Page/Section reference

ASELSAN Sustainability Report 2018 Pages: 22-30 & 36-45

Reliable Operations Management 22, Corporate Governance 22, Internal Audit 12, Risk Management 27, Sustainability Management 28, Corporate Sustainability Approach 28, Material Sustainability Issues 30, Shareholders and Communication Methods 30, Environmental Management 36, Climate Change and Carbon Management 37, Emissions and Energy 38, Water Management 41, Waste Management 42, Environmental Compliance 43, Green Solutions in Operations 44.

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Comment

C14. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

ASELSAN Sustainability Report 2018 file is annex of C0, C1, C2, C3, C4, C6 and C12.

ASELSAN Annual Report 2018 file is the annex of C0, C1, C2, C3 and C12.

ASELSAN Environmental R and O's file is the annex of C2.

2018 ASELSAN Carbon Footprint Verification Opinion Statement Scope 1 and 2 file is the annex of C10.

2018 ASELSAN Carbon Footprint Verification Opinion Statement Scope 3 file is the annex of C10.

 2018 ASELSAN Carbon Footprint Verification Opinion Statement Scope 1 and 2.pdf

 2018 ASELSAN Carbon Footprint Verification Opinion Statement Scope 3.pdf

 ASELSAN Environmental R and O's.xlsx

 ASELSAN Sustainability Report 2018.pdf

 ASELSAN Annual Report 2018.pdf

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Corporate Management Vice President	Board/Executive board

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	Public or Non-Public Submission	I am submitting to
I am submitting my response	Public	Investors

Please confirm below

I have read and accept the applicable Terms