TALANOA SUBMISSION OF TÜSİAD

Where are we?

We are going through a period in which climate change, with its growing repercussions for multiple issue areas, has become one of the most critical agenda items in the world.

In this respect, we, as TÜSİAD, espouse, as one of our strategic priorities, the Paris Agreement that represents a key consensus on climate change mitigation. "TÜSİAD Position Paper on Addressing Climate Change[1]" was prepared in 2017, with the aim of sharing TUSIAD's understanding of the critical agenda items with the public. Moreover, we actively take part and submit TÜSİAD's opinion in the policy-making process, as a member of the Climate Change and Air Management Coordination Board.

Awareness for the risks associated with climate change has reached a considerable level not only among governments but also among the business world. In today's world, there exists the need to resolutely put into perspective an economic transition that centers around climate change mitigation.

Given the climate zone Turkey is located in, it is imperative to focus on policies that seek to enhance low-carbon development and climate change resilience. In this framework, all stakeholders should work on adjustments that would unravel the potential to integrate the ecosystems and business models of public and private sectors into an energy efficient, low-carbon economy.

The Paris Agreement marks the beginning of a new era in the international climate regime. The principal feature of this new era is the stipulation that all state parties, both developed and developing should take measures to reduce emissions in accordance with the Agreement's principle of "common but differentiated responsibilities and respective capabilities." On the other hand, however, uncertainty still prevails under the Paris Agreement regarding the status of Turkey, a country whose special circumstances had been recognized, after long negotiations, under the UNFCCC.

TÜSİAD unwaveringly supports the process through which Turkey steadfastly develops national policies on climate change mitigation and effectively pursues their implementation. In this process, we believe it is of utmost importance that initiatives regarding Turkey's status under the Paris Agreement be resolutely continued with the contribution of all stakeholders.

The private sector in Turkey is developing many successful practices that will reinforce public policies towards climate change mitigation. Some of the best practices of TÜSİAD members are listed[2] in Annex-I:

Where do we want to go?

The Paris Agreement restructures the existing components of the global climate policy, such as mitigation, adaptation, financing, and technology, while adding new components, including loss and damage. More

[1] TUSIAD Position Paper on Addressing Climate Change, 2017. https://tusiad.org/tr/cevre-iklim-degisikligi-cg/item/9933-iklim-degisikligiyle-mucadele-alaninda-tusiad-tutum-belgesi

[2] In alphabetical order

importantly, the Agreement signifies a transition from absolute emissions delimitation or reduction targets that were binding only for the developed countries under the UNFCCC to a new cooperation system where all parties specify their own contribution to emissions reduction on the basis of their respective national circumstances. With the implementation of this new structure, a new process has thus been initiated to identify detailed implementing rules for ensuring the effective functioning of the system. Undoubtedly, it is of utmost importance for Turkey to reinforce its role in the process by way of participating in the relevant negotiation mechanisms.

Schemes for circular economy, resource efficiency and, low-carbon development should be designed with the collaboration of all stakeholders, and an integrated approach should be given primacy. During these evaluation processes, growth targets should be revised, and concrete goals should be set for all sectors.

Proposed policy instruments for addressing climate change and reducing emissions should secure the competitiveness of the Turkish economy and prove to be predictable. In this regard, a viable model policy set for Turkey should be built on the example of international "best" practices.

Turkey demonstrated its resolve to address climate change by ratifying the Kyoto Protocol. On the other hand, climate change mitigation has also been linked, in today's world, to a new development model. It is important for Turkey to reap the benefits of this model in terms of climate change mitigation, and at the same time, protection of economic competitiveness. The environmental and economic policy framework should encourage businesses to plan their future on the basis of this new development model, and on the other hand, be designed in a way to enable Turkey to effectively convey to the global audience its determination to address climate change.

How do we get there?

Low-carbon development entails legislative amendments that should accommodate sectoral practices and international competitiveness. Undoubtedly, these arrangements should incorporate measures to ensure energy supply security and energy resource diversity, given Turkey's growing energy demand.

Becoming a country where new technologies are developed by improving the innovation and research-development capacities is the only way to achieve a viable and sustainable transition to a low-carbon economy. Besides, mechanisms to produce and disseminate new technologies that will expedite Turkey's transition to low-carbon development should be worked on and developed in all aspects. Incentive mechanisms should be set up for companies that undertake industrial symbiosis research so that they can carry out their R&D activities and proceed to the field application of such research.

Energy efficiency is another critical aspect of low-carbon development. Turkey should particularly focus on energy efficiency when framing its climate change mitigation policies, as this matter closely concerns Turkey's increasing energy demand. In order to improve energy efficiency, sector-specific roadmaps should be revised in cooperation with the public and private sector.

Moreover, raising awareness among all stakeholders and putting into practice policies and incentive mechanisms to promote low-carbon investments will play a significant role in achieving a low-carbon future.

During these stages, a close dialogue to be forged between the public and private sectors will prove profoundly instrumental for effective implementation.

While Turkey's transition to the low-carbon development model will create new economic and employment opportunities, capacity- and technology-building investments will require considerable financial sources. Access to global funds (including GCF, GEF, and MDB) will certainly play a critical role as it will facilitate the preferential transfer of large sums of funds and provide an impetus for investors. In this process, the size of the investment portfolio required for achieving emissions reduction and climate change adaptation will constitute an essential element of the communication strategy that needs to be elaborated on relevant public and business platforms. Given that Turkey's special circumstances have already recognised by UNFCCC, access to international funds for mitigation and adaptation efforts, capacity building, and technology transfer should be ensured since it will act as a catalyst towards the country's low carbon development.

Turkey needs to realize its energy efficiency potential to the fullest, and the incentives mechanisms to be introduced should be oriented towards addressing climate change, contribute to national plans and programmes, and stimulate stakeholders' will to take part in these efforts.

Restructuring incentives and devising long-term policies will considerably boost the transition of businesses to the low-carbon development model and increase their appetite for investing. Resting these support mechanisms on the principles of competitiveness and sustainability and framing them in a complementary fashion so as to enable basic and supporting industries to further develop are key elements for coherence and efficiency.

ANNEX-I

- **Akçansa**

Mitigation:

Reducing carbon emissions by replacing fossil fuels with alternative fuels is the biggest opportunity for the cement sector in combatting climate change. Akçansa aims to keep the highest possible use of alternative fuel in its factories by considering the economic conditions of the era. Maximizing alternative fuel use is one of the company's 2020 sustainability goals. The alternative fuel use rate, on a calorific basis, in the Büyükçekmece plant was 7.5% in 2016 and 9.8% in 2017; while the values were 6.0% in 2016 and 8.4% in 2017 across Akçansa.

Moreover, Akçansa carries out energy management processes in cement plants in accordance with ISO 50001 Energy Management System Standard. Waste heat energy recovery systems, loss leakage tracking, efficient equipment use, and process improvement are among the methods to increase energy efficiency. The 15 MW power plant that was established within the scope of the "Waste Heat Recovery Project" conducted at the Çanakkale Factory meets one-third of the factory's total annual power demand. Power generation at the plant has grown over the years, the amount of recovered energy has reached 366 thousand GJ in 2016, and 339 thousand GJ in 2017.

In addition to the above-mentioned measures, Akçansa's 2.35 MW wind turbine has started operating at the Çanakkale Factory in 2016 and can produce 7,844 MWh of electricity annually. This amount meets 1.8% of the factory's total annual power consumption. The wind turbine generated 6763 GJ of electricity in 2016 and 24161 GJ in 2017.

Thanks to all investments and improvements in energy efficiency and alternative energy sources; 67185 tons of CO2 emissions were prevented in 2016, and 51640 tons of CO2e in 2017.

R&D and Innovation:

Within the scope of a project developed in collaboration with Çanakkale Onsekiz Mart University, microalgae are produced at a pilot plant set up at the Çanakkale establishment. Microalgae are microorganisms that contain carbohydrates, proteins, lipids and vitamins. They consist of around 15-77% lipids in varying degrees and use CO_2 as the inorganic carbon source they require for growing and accumulating lipids in their bodies. Benefiting from this feature of microalgae, this system is unprecedented in the cement sector. The system allowed for feeding microalgae repositories with the flue gas from the clinker production line. In this way, it became possible to eliminate the flue gas emissions, and at the same time, to produce microalgae, an asset with multiple uses, in an economical way. The pilot plant aims to produce 5 kg of microalgae daily and as a result, to eliminate 25,360 kg of CO_2 emissions annually.

- **Arçelik**

R&D and Innovation:

Arçelik considers climate change as a fundamental risk for the sustainability of its activities. In this context, Arçelik makes utmost efforts to minimize environmental impacts throughout the product life cycle in line with its commitment to combat climate change. With the results obtained from its practices, Arçelik aims to

"contribute to a sustainable world by protecting the environment and natural resources" by steadily reducing its environmental impact.

Arçelik designs all business processes within the framework of international product and management standards including ISO 14001 Environmental Management System and ISO 50001 Energy Management System which are integrated with ISO 9001 Quality Management System.

Arçelik participates in national and international initiatives to combat climate change and achieves practices that set an example for all of its stakeholders, especially regarding the value chain. Pioneering its sector on a global scale in combating against climate change, Arçelik participates in climate conferences and shares its experiences since COP17. Arçelik also participated in the last Climate Change Conference (COP23) at several panels.

Arçelik, a signatory of the Science Based Targets initiative jointly launched by the Carbon Disclosure Project (CDP), United Nations Global Compact (UNGC), World Resources Institute (WRI), and World Wildlife Foundation (WWF), is committed to determine targets for greenhouse gas emission reduction based on scientific evidence and to reduce emissions.

Arçelik has been participating in CDP, the largest climate change initiative in the world since 2012, and has received top awards every year from CDP as a result of its success in combating climate change. In 2017, Arçelik received the "A performance score" in both CDP Climate and CDP Water and entered in the Global A List in both programs, and become one of the 25 companies in the world that achieved this success.

Mitigation:

Arçelik A.Ş. implements energy efficiency projects and practices in its operational processes, thereby both minimizing the environmental impacts generated by these processes and achieving significant savings in energy costs. Only in 2017, 235 energy efficiency projects are carried out in Arçelik Global operations. Thanks to these projects realized, 112K GJ annual energy saving was achieved while preventing 11K ton CO_2e in greenhouse gas emissions. The resulting savings correspond to the total annual electricity consumption of 10,800 households. With the help of energy efficiency projects and energy management activities, Arçelik has decreased its energy consumption per product in Turkey, Romania, China and Russia operations by 40.7% in 2017 when compared with 2010. Arçelik's goal is to increase this figure to 45% by 2020.

Arçelik aims to establish renewable power plants with a total capacity of 6 MWp by the end of 2020 as part of its 2020 energy targets. The first power plants with 1,63 MWp capacity will be commissioned till the end of 2018.

Greenhouse gas emissions generated by the production operations of Arçelik have been calculated and verified by an independent accredited institution in accordance with ISO 14064-1 Standard since 2010 in Turkey operations, since 2015 in Romania operation and since 2016 in Russia operation.

Adaptation:

Arçelik considers all stages of value chain in combating climate change. In this context, greenhouse gas emissions generated by domestic, import and export logistics operations of Arçelik products are calculated in accordance with ISO 14064-1 standard, and verified by an independent accredited institution.

Arçelik fulfills its obligations of Greenhouse Gas Emissions Monitoring and Reporting Regulation and is audited and verified by an independent accredited institution.

Arçelik became the only Turkish manufacturer with Waste Electrical and Electronic Equipment (WEEE) recycling facilities in 2014. Arçelik has prevented 178 GWh of energy consumption in total by replacing and recycling the old products in the market with environmental-friendly new products at its own WEEE facilities in Eskişehir and Bolu since 2014. In this respect, these savings equal to the annual energy generation of 29 wind turbines with the capacity of 2.5 MW, the daily energy consumption of 22 million households, thus 88 thousand tons of CO_2 emissions were prevented.

- **Çimsa**

Mitigation:
At the cement factory in Eskişehir, alternative fuels substitute for conventional ones, such as coal and petroleum coke, thus enabling emissions reduction. Alternative fuels coming from various industries are processed at the Refuse-Derived Fuels (RDF) preparation plant located at the factory site.

RDF production is carried out in accordance with CIMSA Waste Acceptance Criteria and with relevant regulations and communiqués. The RDF produced are burned in a Hotdisc combustion device, a first in Turkey, and later in a rotary furnace together with other fuels.
By using RDF at the plant, waste management processes of other industries have been supported, and at the same time waste-induced environmental effects have been minimized. The RDF use has led to a total CO_2 emissions reduction of 50,000 tonnes over the years 2015-2017. Alternative fuel usage rate is intended to be increased to be over 40% in 2018.

At the Mersin facilities, projects on energy efficiency and on power generation from waste gas heat have been carried out. The project on power production from waste gas heat generated by rotary furnaces came into effect in 2012. Having an installed capacity of 9.8 MW, the plant meets about 20% of the factory's total annual power demand. The project allowed for a CO_2 emissions reduction of 24,502 tonnes in 2016, and 20,808 tonnes in 2017.

- **Garanti Bank**

Reduction:
Garanti Bank discloses its Scope 1, 2 and 3 GHG emissions annually since 2010. Following its ISO 14001 accreditation in 2012, the Bank started to determine targets to improve its environmental performance. In 2016, the Bank set a long-term target, which was 50% reduction in its carbon intensity from 2012 to 2020 and committed to set a Science-based Target (SBTi). Garanti exceeded this target with 60% reduction in 2017. In addition to its outstanding A List performance in the CDP Climate Change Program over the years, Garanti became the only financial institution worldwide to be listed in the CDP 2017 Water A List.

Adaptation:
Garanti aspires to advance in sustainable banking through technological innovations, managing the environmental footprint of its operations and developing sound E&S risk assessment as part of its risk management framework. In 2015, the Bank published its Climate Change Action Plan to support Turkey's

transition to a low-carbon economy focusing on 4 areas, prioritizing low-carbon investments by carbon pricing and renewable energy finance, reducing deforestation, managing water-related risks due to climate change, and establishing green office standards. In line with its Plan, Garanti provided over USD 4.9 billion in loans to renewable energy to date and is the market leader with a 30% share in Turkey's operating installed wind power capacity. In 2017, Garanti avoided 5.4 million tCO2e through its renewable energy financing activities, while the Scope 3 emissions of its energy generation portfolio has been 0 in new PF commitments since 2014.

Research & Development:
Garanti also led the efforts to build capacity in the Turkish finance sector. Since 2013, the Bank participates in organizing Sustainable Finance Forum each year in collaboration with BCSD Turkey, UNEP FI, and UNGC Network Turkey. In 2017, the V. Sustainable Finance Forum's main theme was "The Role of Finance Sector in Combating Climate Change", and the groundbreaking Declaration on Sustainable Finance was launched. It aims to integrate the E&S risks in lending activities. Garanti led the efforts to develop this Declaration as the Chair of Sustainable Finance Working Group.

In 2018, leading banks from all around the world gathered to prepare the UN Banking Principles to define the role of the global banking sector for sustainable development in line with the UN Sustainable Development Goals (SDGs) and Paris Agreement. Garanti is the only bank from Turkey to be part of this global effort.
In July 2018, Garanti launched the "Green Loan" agreement where the margin of the loan is linked to the Environmental, Social, and Governance (ESG) performance of the borrower; meaning the interest rate will be lowered if the borrower increases its ESG performance. This historic achievement is Turkey's first and the world's fifth "ESG linked bilateral Green Loan" agreement. Additionally, Garanti Bank was involved as the 'green loan coordinator' in Turkey's first green loan agreement signed in October 2018, with Akfen Renewable Energy.

- **Industrial Development Bank of Turkey (TSKB)**

Adaptation and Mitigation:
TSKB was the first bank in Turkey to grant a loan linked to environmental protection and industrial pollution control in 1990s. Then, TSKB has started intensive renewable energy (RE) financing in mid 2000s. Within this scope, TSKB provides international funds, most of which are aimed to use climate-friendly investments in order to mitigate global climate change.

For renewable energy finance, TSKB financed 245 projects varying from hydro to solar, wind, biomass and geothermal, with a 5693 MW total installed capacity representing 15% of Turkey's total installed capacity as of 2017. The total investment of projects funded between 2003 &2017 was $9.6B of which $4.1B was committed by TSKB. As of 2017 year end, the Bank extended a funding of approximately $900M for 131 projects on energy & resource efficiency.

By help of Renewable Energy investments, resource efficiency & energy efficiency projects, TSKB has contributed to the acceleration of transition to a low-carbon economy through the prevention of 12 Million tons carbon emission on an annual basis.

In line with the targets of Sustainability Committee, TSKB has set an example in the industry in tackling climate change with a new product. TSKB issued its first Green/Sustainable Bond in Turkey & CEEMEA in 2016. The

bond has a size of $300M & a tenor of 5 years. The framework of the Bond has been designed to fund climate change mitigation, adaptation & sustainable infrastructure projects. TSKB has been awarded for the SRI Bond of the Year' by the IFR, Thomson Reuters Awards 2016 & EMEA Green/SRI Bond Deal of the Year in the CEEMEA region by the Global Capital Awards. In 2017, TSKB has published the Impact Report of the Bond which contains the information about the projects financed by the Bond, the CO2 emissions & the KPI's.

Research and Development:
In 2017, TSKB issued Basel 3 compliant Sustainable Tier 2 Bond worth $300M which was the first "Subordinated Sustainable Bond" issuance in the world.

Consequently, the collaboration with stakeholders in its value chain enables TSKB to access both climate specific loans & investors in its long-term competitive success. TSKB expects to increase the number & size amount of the sustainability thematic loans. The share of sustainability-themed loans is 68% of the portfolio as of 2017 year-end.

TSKB is very well aware of the fact that both slow and rapid onset extreme events with significant adverse impacts on economies already taking place all over the world. The Bank acknowledges that mitigating short-term risks associated with unavoidable climate change require sophisticated tools and skills other than scenario-based assessments which are used for assessing longer-term time horizons. TSKB will use the next two years to determine such short-term risks and draft building blocks of its strategy to adequately address them. The bank already uses in-house tools such as its Environmental and Social Risk Assessment Tool (ERET) and would like to expand its capabilities to address the needs associated with climate-related risk assessment.

- **Koç Holding**

Mitigation:
Projects oriented towards energy intensity and greenhouse gas emissions reduction constitute an important part, and a priority area, of the Koç Holding's efforts towards devising environmental policies, and long-term environmental and climate change strategies. These projects have a positive impact both on environmental and climate performance, and on costs owing to the operational efficiency achieved.

The energy efficiency projects conducted by the Koç Group companies between 2012 and 2016 (i.e. over the last five years) yielded energy savings of over 13.4 million GJ in total and prevented greenhouse gas emissions of over 940 thousand tonnes.

Adaptation:
Water efficiency in production, wastewater recycling, and relieving pressure on resources by increasing resource reuse and diversification are among the priority areas within the scope of the Koç Holding's environmental strategy.

When the total water use values over the last five years are assessed, it can be observed that the share of the use of surface and underground waters in the total water consumption fell from 91.1% to 59.2% by 2016. In 2016, over 106.34 million m^3 of water was recovered and used in production by way of recycling and reuse, thus making the share of recycled water use in production 72.3%.

***Research and Development*:**
The Koç Group companies manage their climate change mitigation and adaptation efforts, which include promotion of emissions reduction and of energy efficiency, wise use of water resources and waste management, on the basis of their long-term environmental strategies. The total value of environmental investments made by the Group companies in the period between 2012 and 2016 amounted to more than one billion TL.

- **OYAK**

Mitigation:
The OYAK Group successfully implements circular economy practices and low-carbon solutions embracing the principle "more value with fewer resources". The energy efficiency projects, conducted in the last three years by the OYAK Group's mining, metallurgy, cement and concrete companies, have yielded energy savings of over 2.3 billion kWh, and have facilitated, since 2013, renewable energy production of 2.2 million kWh. Since 2013, an annual reduction of 200,000 tonnes of CO_2 equivalents has been achieved through eight C-certified projects alone.

Adaptation:
With its efforts towards the use of alternative raw materials/fuels and the minimization of natural resource use, the OYAK Group has conserved 17.3 million m^3 of soil over the years 2015-2017. In 2016, the OYAK Group issued its Biodiversity Policy that rests on the Group's multi-sectoral structure and its sensitivities regarding biodiversity and rehabilitation. With the purpose of creating a guiding document for the sectoral and general use, a Biodiversity Handbook was prepared for the first time in the private sector, and was submitted, in 2015, to the 12th Conference of the Parties of the United Nations Convention to Combat Desertification.

R&D and Innovation:
The OYAK Group encourages R&D and innovation efforts of all its companies in order to increase its competitiveness on the global and national scale and respond to the needs and expectations of its shareholders. An amount of 154.3 million TL was invested in R&D between 2015 and 2017. Moreover, the OYAK Group spent 327.1 million TL on environmental investments in the period between 2014 and 2017.

- **TÜPRAŞ**

Mitigation:
Operating in the high energy-consuming refinery industry, Tüpraş prioritizes energy-efficiency projects in line with its sustainability objectives. Thanks to company's investment on energy efficiency, the company has decreased its Energy Intensity Index (EII) to 102.2 from 105.2 in the past five years. The Index makes a comparison of the performance by Tüpraş possible. The decline represents an energy savings of approximately 1 850 000 Gcal. During the same period, the company has reduced its greenhouse gas emissions by 522,000 tons and have generated $75.9 million.

Adaptation:
Tüpraş also works to adapt to the impacts of climate change. As such, it has taken action to mitigate water risks, a vital source for its operations, and support an effective use of natural resources. Tüpraş has launched the Urban Wastewater Recycling Project in collaboration with the Körfez Municipality, the local authority

closest to its facilities. As part of the project, between 2014 and 2015, the company invested $24.8 million for the urban wastewater recycling facilities at the Izmit Refinery. The total production capacity at the facility is 1,500 m^3/hour. Subsequently, 97 percent of the water used at the Izmit Refinery now comes from the wastewater of the Körfez Municipality. In three years, 19.9 million m3 of water have been recycled as a result of the project, one of the very few initiatives around the world that aims to recycle urban waste water. This figure corresponds to annual water consumption of a city or town with a population of almost 495,000. The Tüpraş Izmit and Izmir refineries are also conducting work to recycle industrial wastewater and reuse the processed wastewater in the intermediate stages. In 2017, all Tüpraş refineries recycled 25.7 million m^3 of water.