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**Türkiye at the Center of the Climate Crisis**

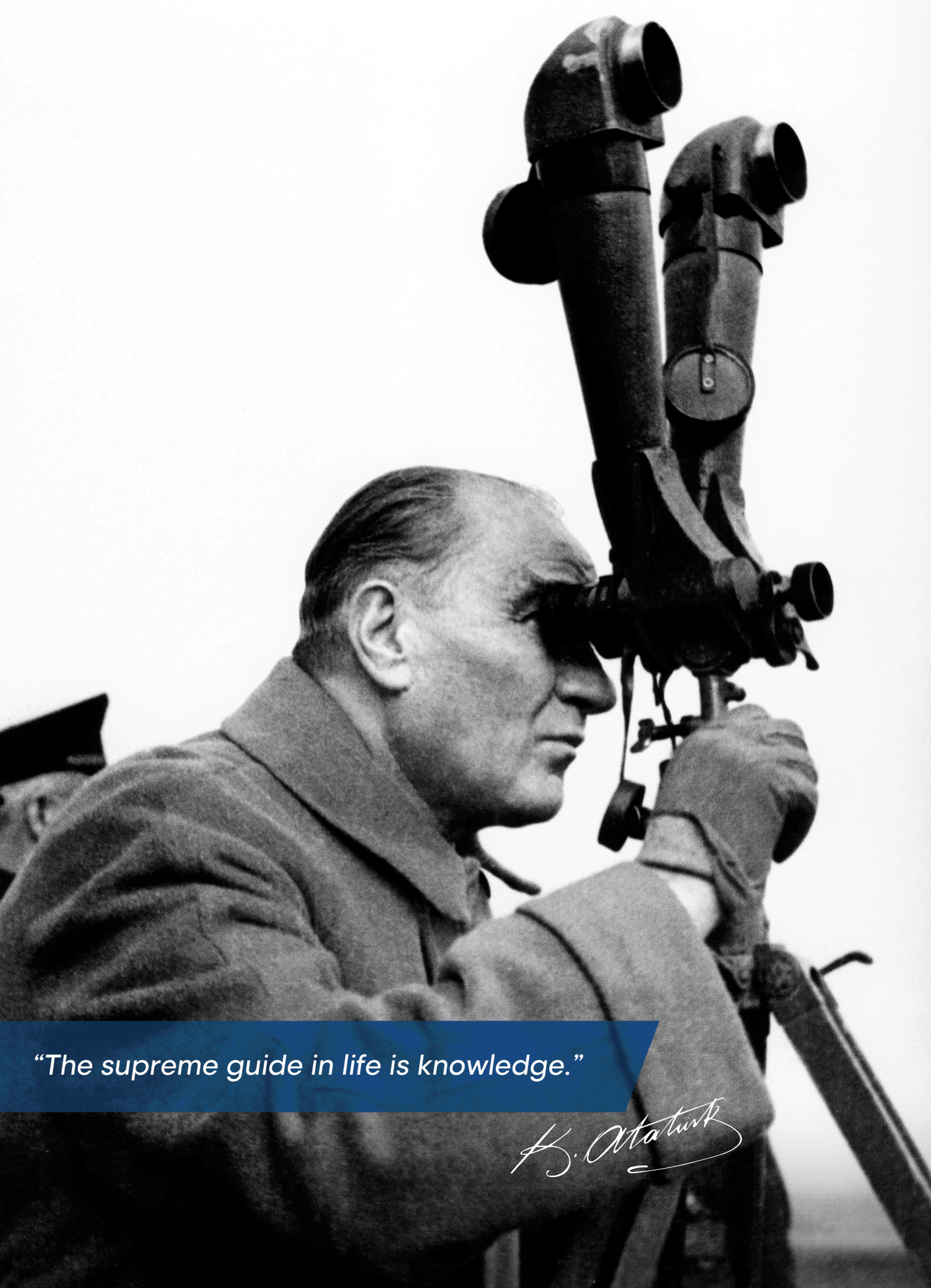
Lawyer Murat BAKAN - Izmir MP, CHP Spokesperson for the Environment Commission

**Türkiye's National Energy Plan in respect of Renewable Energy Sources**

Dr. Murat DURAK - Chairman of the Board of Directors of the Offshore Wind Energy Association

**Türkiye Energy Transition Outlook**

Ahmet ACAR - Civil Engineer SHURA Energy Transformation Center Analyst



“The supreme guide in life is knowledge.”

*H. Atatürk*

Tunc SOYER

Mayor of Izmir Metropolitan Municipality

## Izmir, City of Unity and Harmony

**Dear Readers,**

I am proud to welcome you with the 10th issue of IZENERGY magazine, which includes the activities and projects of IZENERGY, one of the subsidiaries of our municipality, and valuable academicians and valuable names of the sector.

We continue to carry out our work through each of our units and companies with the concept of sustainability, which has become the principle of our service understanding.

IZENERGY INC play an important role in our fight against the climate crisis with its activities. It is accelerating this transformation in Izmir by starting to realize renewable energy projects one by one.

We were selected for the Climate Neutral Cities EU Mission and the 60 CrAFt Cities platform within this mission, and we started our work in this respect. We have once again emphasized how determined we are in our fight against climate change with our goal of becoming a "Climate Neutral City". Not only that, but we are moving forward decisively with our effective process management for the mission that will bring together all stakeholders of the city.



We continue to inform NGOs, professional chambers, academics, national and international financial institutions to include them in the process.

Izmir, as a city of unity and harmony, will continue to do its duty on climate change. We continue to protect the right to life of all living things in line with our goal of becoming cleaner, more resilient and more respectful to nature as our city continues to change and develop.

We continue to present Izmir to the world and maintain our collaborations. We continue our activities in every field and work with increasing energy for a stronger world city. Likewise, we are increasing this change and development with our ongoing cooperation with world cities in every field.

We will continue to share this pride that Izmir will experience with an understanding of unity with all our fellow citizens.

I would like to thank all my colleagues for their efforts and extend my respect and love to our readers.

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## A. Ercan TURKOGLU Engineer Msc.

Chairman of the Board  
of Directors of IZENERGY INC.

### Dear Izmir Residents;

We are pleased to bring you the 10th issue of our company's sectoral magazine, IZENERGY.

With the visionary management approach of Mr. Tunc SOYER, Mayor of Izmir Metropolitan Municipality, as IZENERGY, we continue to carry out and deliver to you our project studies on renewable energy resources and combating climate change.

In our magazine, we include all stakeholders of the city as well as our work. We endeavor to include and deliver to you our academicians who work in our fields of activity, politicians who develop policies in our field of activity, professional chambers, NGOs and other stakeholders.

In our 10th issue, the political perspective section includes an article titled Türkiye at the Center of the Climate Crisis by our esteemed Izmir MP Mr. Lawyer Murat BAKAN. Also in this issue, we featured the Sponge City Izmir Project, which was launched on 26.12.2022 by our Water Resources and Water Engineering Research and Application Center, one of the units of our company.

In this issue, we also featured a speech by Mr. Murat DURAK, Chairman of the Board of Directors of the Offshore Wind Energy Association (DURED). In this issue, we have mediated Murat DURAK's article titled Türkiye's National Energy Plan in respect of Renewable Energy Sources to reach you with valuable information.



In our voice of the sector section, Ahmet ACAR, Civil Engineer and Energy Transformation Center Analyst from SHURA Energy, reaches you with his article titled Türkiye Energy Transformation Outlook.

We continue to publish the booklets prepared by IMM Department of Environmental Protection and Control on GCAP, SECAP, Izmir's Strategy for Living in Harmony with Nature and Izmir Plastic Waste-Free City Action Plan, which is being implemented by IMM Department of Climate Change and Zero Waste.

Thanks to the devoted, disciplined, and diligent work of all our employees in their respective fields, our company continues to expand its service area. As we mentioned in our previous issue, IZARITMA (Izmir Treatment Technologies INC.), which we established in partnership with IZDOGA, another municipal subsidiary of ours, we will be ready to take responsibility for the construction and operation of treatment plants.

Another important development that we will present in this issue is that we have established IZGUNES company in partnership with our municipality, its affiliated institutions and subsidiary companies and city stakeholders to fulfill the important task of implementing solar energy power plant projects.

We have been awarded the title of Leading City in the European Commission's Climate Neutral and Smart Cities Mission. On this occasion, under the leadership of Izmir Metropolitan Municipality, we continue to successfully carry out the mission process in cooperation with all stakeholders representing our city -professional chambers, associations, NGOs, universities - and to knit relationships for our city on behalf of our Presidency.

Until we meet again in our 11th issue...  
To bright sunny days in harmony with nature...

## Türkiye at the Center of the Climate Crisis

I think I was around 18–20 years old when I read Stephen Hawking's A Brief History of Time. Until that moment, space, black holes, astrophysics were subjects I was very far away from, and Hawking took me into that world in a very understandable way. When Hawking died, he did not just pass away as one of the most important physicists of all time. He also answered many of the questions ordinary people like me had about the universe. That's why what he said in his interviews before his death also affected me deeply. He said: "I fear that evolution has built greed and aggression into the human genome. There is no sign of a reduction in conflict, and the development of militarized technology and weapons of mass destruction could lead to a catastrophe. The best hope for the survival of the human race may be independent colonies in space." In another interview with the BBC, Stephen Hawking stated that humanity's time on Earth is shortening and claimed that climate change, asteroid impacts, epidemics and overpopulation will destroy humanity if it remains on Earth.

I think no one has expressed the problem of the existence of the earth and the creatures on it better than this, especially the conservatives who attribute global warming to the cycle of the sun and refuse to take any steps, obviously have no problem with the climate crisis. Just 10 years ago, almost all Republican senators of the US, the country with the highest greenhouse gas emissions per capita in the world, were rejecting the climate crisis. Michele Bachman, one of the senators who thought it might be possible, said, "Yes, it might be real, and if so, it is God's punishment for allowing gay marriage." Fortunately, in Türkiye, none of the 5 political parties with a group in the Turkish Grand National Assembly has ever said 'there is no climate crisis'. Even if we disagree on terminology from time to time, everyone is aware that something is wrong. But this awareness is not enough. The government is aware but does not care. We are aware and concerned about the future of our country and our planet.

### Lawyer Murat BAKAN

Izmir MP,  
CHP Spokesperson for the  
Environment Commission



In fact, this difference in terminology determines both your awareness and intellectual level on the subject. Although the world commonly refers to it as 'climate change', there has been a significant change in the last two years. Activists such as Greta Thunberg, newspapers such as The Guardian and many other individuals and institutions have stated that the term 'climate change' no longer reveals the gravity of the situation, that change can also be positive, and that concepts such as 'climate crisis,' 'climate destruction' or 'climate emergency' should be used for humanity to grasp the urgent situation. This view has become increasingly widespread, I have been saying 'climate crisis' for the last two years and I think this also determines your attitude towards climate. If you are a political party that wants to play a leading role in this issue, or if you are a scientist or a non-governmental organization working on climate, you should have this awareness and adopt this change in terminology.

### The World is Warming Rapidly

The sun is our source of life. But it is not only the sun's rays that keep the earth at a livable temperature; carbon dioxide, methane, water vapor, nitrous oxide and similar gases in the atmosphere prevent the sun's rays from reflecting off the earth, returning to space and sending them back to the earth. Thus, the world continues to be at a temperature where we can all live. What we call the greenhouse effect, on the one hand, provides the heat we need to live, and on the other hand, if these gases in the atmosphere increase, it ensures that the earth continues to warm up.

In fact, this is exactly what we are experiencing today. Greenhouse gases are necessary for us to live on earth, but the gradual increase in greenhouse gases with human influence has started to warm the earth and this situation has become a risk not only for human life but

for all living life on our planet. It is not my personal opinion that global warming poses a risk to our planet and our country and that this is due to human influence; two scientists, Chemist Paul Crutzen and Biologist Eugene, who say that a new era began with the industrial revolution, say that the era we live in is the era with the highest human influence and that it shapes the planet, so it should be called the 'Anthropocene Era'. By the end of 2020, the weight of man-made objects reached 1 trillion tons. That's more than the live weight of all plants and animals on the planet. These figures were released by the Weizmann Institute of Science in Israel to illustrate the human impact on the planet. At this rate, by 2040 the weight of man-made objects will reach 3 trillion tons. These figures are a stark reminder of the human impact on the environment and climate. But it is the IPCC that we should really turn to in this regard. The IPCC, or the Intergovernmental Panel on Climate Change, has been publishing reports every 5 to 7 years since 1988, when it was established by the World Meteorological Organization and the United Nations Environment Program to investigate the effects of global warming on climate.

The IPCC's sixth report shows how little time we have left to take action on this issue.

In August last year, the IPCC published the first part of its more than 3,000-page 6th Assessment Report, which analyzed more than 14,000 scientific studies by 243 scientists. Just three months before the 26th Negotiating Conference of the United Nations Framework Convention on Climate Change in Glasgow in November. In this very comprehensive report, they say that the 1.5 degree threshold will be exceeded in the next 20 years. The same report states that the climate crisis is clearly and unequivocally human-caused. In 5 different scenarios, depending on the rate of reduction of carbon emissions, the report said that the world would warm up by 1.5 degrees by 2030.

When we read the headlines in the IPCC's press release, we can better understand what we are facing.

- The climate crisis is affecting the water cycle. This will lead to more and more flooding. There will be more droughts in many regions.
- The climate crisis is affecting precipitation patterns. Rainfall may increase in high latitudes, but it is projected to decrease in large parts of subtropical regions. Changes are expected in monsoon rainfall, which varies by region.
- Coastal regions will witness continuous sea level rise throughout the 21st century, leading to more frequent and severe coastal flooding and coastal erosion in low-lying areas. Extreme sea level events, which previously occurred once every 100 years, could occur every year by the end of this century.
- Further warming will increase permafrost melting and loss of seasonal snow cover, melting of glaciers and ice sheets, and loss of summer Arctic Sea ice.
- Changes in the ocean, including warming, more frequent marine heatwaves, ocean acidification and declining oxygen levels, are clearly linked to human influence. These changes affect both ocean ecosystems and the people who rely on them. This will continue for the rest of the century.
- For cities, the impacts of climate change, such as heat (as urban areas are often warmer than their surroundings), flooding from intense rainfall events and sea level rise in coastal cities, could be exacerbated.
- The report also presents five different scenarios depending on how much the world reduces carbon emissions: massive reductions that are acted upon quickly, intensive but not massive reductions, a moderate reduction scenario, a scenario of little reduction where existing cutback plans continue, and finally a future scenario of continued increases in carbon emissions.

After this report was published, UN Secretary-General António Guterres called it a "code red" for humanity. "Let's stop killing ourselves with carbon, stop treating nature like a toilet. We are digging our own grave." But day after day, month after month, year after year, all these eloquent words fail to mobilize the family of nations to act faster.

Weren't there big, grandiose words in Glasgow? Yes. But apart from the coalition on deforestation and coal phase-out, we saw nothing of substance. 200 countries showed up at Head of State and Ministerial level. Eyes were also on President Erdogan of Türkiye, one of the last 5 countries to ratify the Paris Agreement, but since Scotland, which provides security for 200 heads of state and ministers, could not provide security for Mr. Erdogan, he did not attend the meeting. I think even this is enough to summarize where Türkiye stands on the climate issue.

The world is moving towards a new order, a new order where fossil fuels no longer exist. But today, even if the whole world took a joint decision and turned off the switches at the same time, even if not a single airplane flew, not a single gasoline-powered vehicle turned its key, even if all the light bulbs went out - which we all know is not possible - the world has warmed up enough and the climate crisis has progressed to the point of irreversibility. What we are trying to do now is not to return the world to the pre-industrial revolution, we all know that is not possible for now. Our goal is to prevent the worst from happening.

## Where is Türkiye in the fight against the climate crisis?

Different countries are tackling the climate crisis in sometimes similar and sometimes different ways. While some are reducing their emissions, others are working on carbon sequestering technologies - even if we do not approve of them.

Türkiye, responsible for 1 percent of the world's greenhouse gas emissions, has its head in the sand. While the world is rapidly moving away from fossil fuels and shutting down coal-fired power plants, Türkiye is following China in this regard and is planning over 20 new power plants. Since the Minister of Energy and Natural Resources did not respond to our questions, we do not know which projects have been shelved, which are ongoing, which are looking for financing... What we do know is that Türkiye does not give up on projects that are hostile to nature even at a time when it is almost impossible to find resources for projects hostile to nature, when all the world's financing has turned to climate financing. This shows where we stand. The most concrete example of this is the Eskisehir Alpu Thermal Power Plant, which was tendered 7 times but canceled due to lack of financing.

Increasing the share of a source like coal, which causes the highest greenhouse gas emissions among energy sources, as any child who knows addition and subtraction can calculate, also shows that Türkiye's "2053 carbon neutrality" target is a dream with this government and this perspective.

Another way for Türkiye to reduce its carbon emissions is to increase the capacity of carbon sinks. I am talking about seas, lakes, wetlands, marshes and forests, but what is the situation here? Türkiye has lost its most valuable wetlands such as Eregli Reeds, Salt Lake, Lake Akşehir, Lake Seyfe and many more that we cannot name here. These areas, which are breeding and living spaces for millions of birds, make a great contribution to the ecosystem and stabilize the climate, are no more there.

At COP 26 in Glasgow, more than 100 countries made a commitment to reverse and end 'Deforestation' by 2030. We are among them. But does the Ministry of Agriculture and Forestry know that the climate negotiator made this pledge on behalf of the state? I don't think so! Bekir Pakdemirli, the former Minister of Agriculture and Forestry, who asked for his dismissal but was humiliatingly dismissed without his knowledge, said in October 2019, "We will close the current account deficit by reducing imports of forest products by 1 billion dollars with the products we will produce." In order to close the current account deficit, the General Directorate of Forestry slaughtered trees in protected forests, remaining forests and national parks. In other words, they work like an institution that increases deforestation rather than preventing it. The government looks at forests not as a source of life but as a source of timber, logs, wood and chips.

Türkiye has only one option. We have to put climate policies at the top of the political agenda, not only to protect the planet, but also to save the future of our country. The upcoming elections will not only determine the government that will govern Türkiye, but also whether we will leave the future generations of this country a country like the one we inherited from our predecessors. We did not rent this country from someone for 49 years. We have to leave this Republic, which we founded with blood and tears, to future generations not only with its regime but also with its nature, seas, lakes, rivers, mountains and forests. That is why the first elections we will enter are the struggle for the existence of our country in every respect.

# Izmir Metropolitan Municipality Izmir Sustainable Energy and Climate Action Plan

Excerpted verbatim from the Sustainable Energy and Climate Action Plan (SECAP), which includes actions for greenhouse gas mitigation and adaptation to the impacts of climate change, which is one of Izmir Metropolitan Municipality's efforts to leave a cleaner and more livable city for future generations, such as the issue of energy and resource consumption for Izmir's urban sustainability and combating the climate crisis, and is funded by the European Union and supported by the European Bank for Reconstruction and Development (EBRD);

### 3.1.2. Increased intensity, magnitude, and frequency of extreme rainfall and storm events:

The occurrence of intense, high magnitude extreme rainfall events, including storms, can be observed to act as a catalyst for other cascading hazards such as flooding and landslides. By understanding Izmir's historical context, the impacts of climate change projections and its physical and social characteristics, it enables the analysis of how the hazards associated with extreme rainfall and storm events will evolve in the future

#### Historical Context:

The General Directorate of Meteorology for Türkiye collates baseline historical data for rainfall within Izmir as portrayed in Table 6. This shows an

annual average of 711 mm over 78 rainy days for the period of 1938 – 2019.

During this time, the highest daily total rainfall recorded was 145.33 mm, occurring in September 2006.

**Table 6: Monthly baseline climate for Izmir for a measurement period of 1938-2019.**

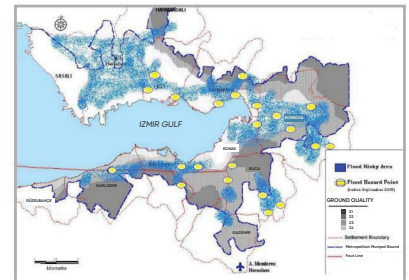
	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
Average Rainy Days	12,7	10,8	9,2	7,9	5,3	2,2	0,5	0,5	2,0	5,4	8,8	12,8	78,1
Average of Total Monthly Rainfall Amount (mm)	136,1	102,3	75,6	46,0	31,3	11,6	4,1	5,7	15,8	44,6	93,7	144,3	711,1

Over the past 70 years, Izmir's extreme rainfall events have damaged approximately 250,000 residential in Izmir due to flooding, which is only second to earthquakes in terms of hazard impact. Some of the most recent example of flooding in Izmir include:

- A flash flood in May 2017 which resulted in up to 1-meter deep water flowing through the streets of the Municipality, inundating houses, damaging infrastructure, and sweeping away cars<sup>33</sup>.
- Coastal flooding due to storm surges caused by 100km / hr winds also occurred in January 2018, disrupting marine transport and damaging coastal properties<sup>34</sup>.

● One of the biggest events in recent history in Izmir was the flash floods in 1995. This event was a result of a heavy and intense rainstorm over the Aegean coast, this flooding from which caused 61 fatalities and approximately \$50 million worth of damage<sup>35</sup>. A large proportion of these impacts were focused within the Karsiyaka district.

Figure 11 below demonstrates 22 different locations of known flood events across Izmir, as well as portraying those areas considered to be at risk of flooding.



**Figure 11: The left map demonstrates locations within the area of Izmir Gulf that are at risk to surface water flooding (blue areas) and the location of known events (yellow squares)<sup>36</sup>.**

Unlike flooding, landslides often result in a more localized impact on

buildings, the transport network and infrastructure and Table 7 below demonstrates the latest accessible figures of buildings known to have been damaged by landslide per district in Izmir.

**Table 7: Major landslide areas in Izmir City (2008)<sup>36</sup>**

Region	Damaged Buildings
Cigli-Guzeltepe	440
Konak-Gurcesme	10
Kadifekale	3162
Altindag-Merkez/ Kuyu Camdibi	86
Hakimiyeti Milliye	64
Narlidere-Narkent	800

SOURCE: <sup>33</sup><https://www.mgm.gov.tr/veridegerlendirme/il-ve-ilceler-istatistik.aspx?m=IZMIR>

<sup>34</sup>Kutluca, AK (ND) Izmir Şehri ve Doğal Afetler Riski, Şehir ve Bölge Planlama Bölümü

<sup>35</sup><https://www.dailysabah.com/turkey/2018/01/18/floods-hit-izmir-coastline-as-storm-causes-seas-to-surge-canceling-ferries-in-istanbul>

<sup>36</sup>Kömüşçü, Ali Ümran (1998). Izmir'de Ani Taşkınlar Yol Açan Meteorolojik ve Arazi Özelliklerinin Analizi, 3-4 Kasım 1995. Doğal Tehlikeler. 18. 1-25. 10.1023/A:1008078920113.

<sup>37</sup>Kutluca, AK (ND) Izmir Şehri ve Doğal Afetler Riski, Şehir ve Bölge Planlama Bölümü

<sup>33</sup><https://watchers.news/2017/05/31/severe-flash-flood-izmir-turkey/>

<sup>34</sup><https://www.dailysabah.com/turkey/2018/01/18/floods-hit-izmir-coastline-as-storm-causes-seas-to-surge-canceling-ferries-in-istanbul>

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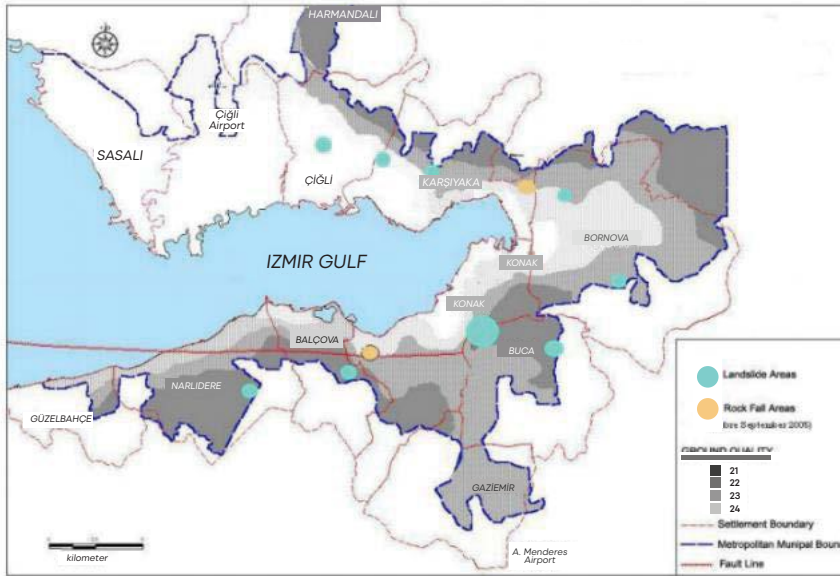


Figure 12 demonstrates the 11 areas across Izmir where landslides and / or rockfalls have been known to occur, showing a predominant North / South focus around the Gulf of Izmir.

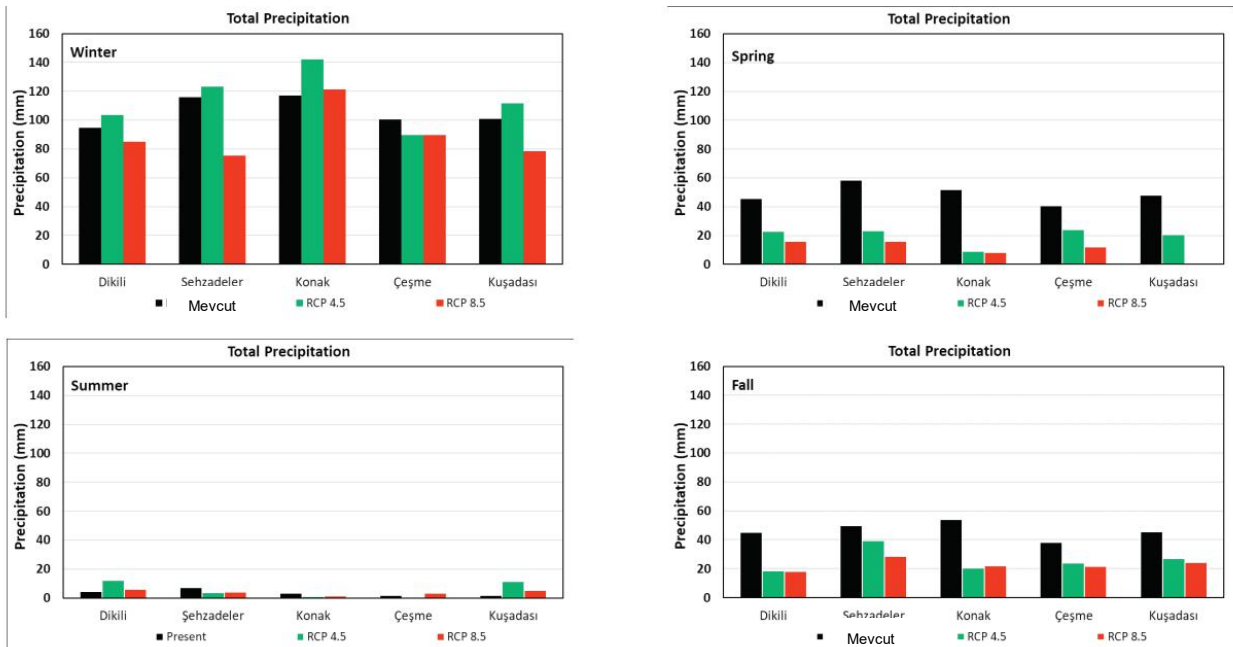
**Climate Change Projections**

The occurrence of flooding and landslides in Izmir is expected to only become more frequent and intense. Climate projection trends, such as those developed in Türkiye’s National

Communications (NC) to the UNFCCC up until 2100 (i.e., general direction of change only), demonstrate an increase in the number of days that experience maximum precipitation events as well as a predicted increase in intensity, magnitude and frequency of storm events, and a predicted decrease in total annual rainfall. This is demonstrated in Figure 13, which shows that despite an expected increase in extreme precipitation events, in spring summer and autumn periods it is expected that precipitation will decrease by 50% between 2050-2100 compared to the baseline<sup>38</sup> for both RCP4.5 and RCP8.5 scenarios. For winter, an overall increase in total annual precipitation anticipated for RCP4.5, whereas RCP8.5 demonstrates a decrease, in-line with the other seasons.



**Figure 12: A map of known landslide and rockfall areas within Izmir<sup>37</sup>.**



**Figure 13: Total annual rainfall in Izmir climate stations for current (1971-2000) and future (2050-2100) period considering seasonality<sup>38</sup>.**

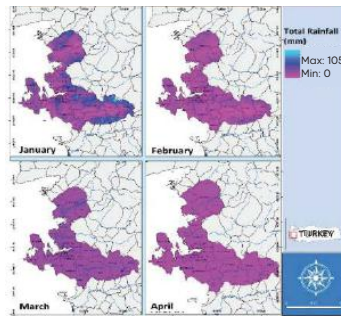
SOURCE: <sup>38</sup>İklim Değişikliğine Dirençli Kentler için Bir Çerçeve: Yeşil Odaklı Uyarılama Kılavuzu, 2019.

**Table 8: A summary of Precipitation projections for Türkiye, rainfall change (%) per season<sup>39</sup>.**

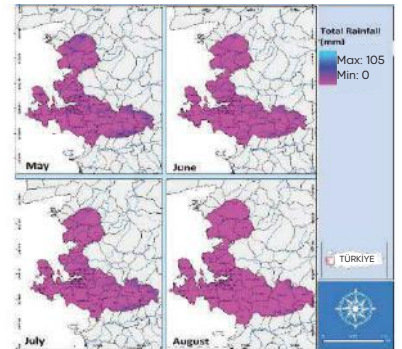
Model	Periods	RCP 8.5			
		Winter	Spring	Summer	Autumn
HadGEM2-ES	2016 - 2040	-20,+30	-30,+30	-40,+50	-40,+40
	2041 - 2070	-20,+30	-40,+40	-60,+60	-40,+40
	2071 - 2099	-30,+40	-40,+40	-60,+60	-50,+40
MPI-ESM-MR	2016 - 2040	-30,+30	-40,+40	-60,+50	-40,+40
	2041 - 2070	-30,+30	-40,+30	-60,+50	-40,+40
	2071 - 2099	-40,+50	-50,+30	-60,+30	-40,+40
GFDL-ESM2M	2016 - 2040	-40,+40	-30,+20	-30,+40	-40,+30
	2041 - 2070	-40,+30	-30,+40	-40,+30	-40,+20
	2071 - 2099	-40,+40	-40,+40	-50,+30	-40,+40

This is also demonstrated by the prediction in the change the number of consecutive wet days (greater than or equal to 1mm of precipitation) for Izmir, as seen in Figure 14. This shows a decrease under RCP4.5, but an increase under RCP8.5 for all districts except Dikili, Konak, Cesme, Kusadası. Data is included for Manisa and Aydin is due to meteorological stations being located there.

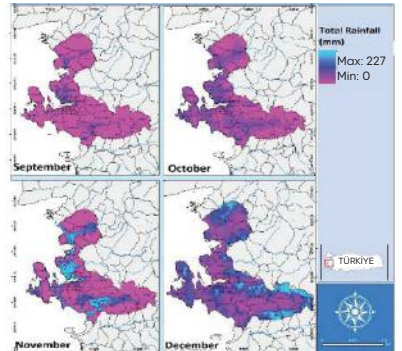
MEAN TOTAL RAINFALL MAP OF IZMIR (2050-2100 RCP8.5)



MEAN TOTAL RAINFALL MAP OF IZMIR (2050-2100 RCP8.5)



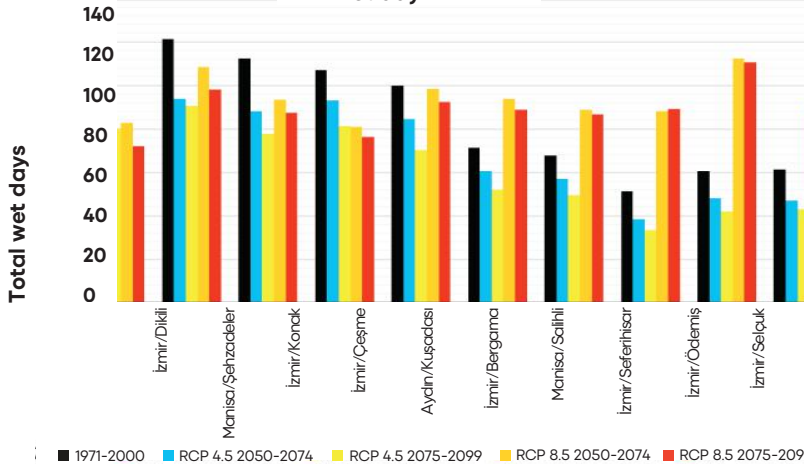
MEAN TOTAL RAINFALL MAP OF IZMIR (2050-2100 RCP8.5)



**Figure 15: Long term (2050 - 2100) total precipitation maps of Izmir province using HadGEM-ES model and RCP8.5 Scenario<sup>41</sup>**

The already fragile slopes, a characteristic geological feature of Izmir, become unstable under extreme rainfall, leading to landslides, as rocks containing micro-fractures and existing fault lines weaken rock strength in places. When extreme rainfall events occur, increased erosion rates and saturated soil reduce the strength of the soil, removing soil particles or other materials and making already weak spots even more fragile.

**Wet day**



**Figure 14: Long term total consecutive wet days for Izmir region under climate change**

The predicted change in mean total rainfall for Izmir is also demonstrated in the below figure on a monthly basis, under the high emission scenario RCP8.5 for 2050 - 2100. This demonstrates the extremes that will be experienced annually within Izmir, peaking at 105mm of rainfall during the winter months; October through to January, with prolonged periods of minimal to zero rainfall between February and September.

**From IMM Action Plans**

Izmir's topographic and geological characteristics of steep and urbanized slopes bordering low-lying coastal and deltaic plans, located upon a major fault system that runs beneath the City, lends itself to be sensitive to both landslides and flooding.

SOURCE: <sup>39</sup>Demircan ve diğerleri, (ND) Türkiye için İklim Değişikliği Projeksiyonları: Modeller ve İki Senaryo.

<sup>40</sup>İklim Değişikliğine Dirençli Kentler için Bir Çerçeve: Yeşil Odaklı Uyarılama Kılavuzu, 2019.

<sup>41</sup>İklim Değişikliğine Dirençli Kentler için Bir Çerçeve: Yeşil Odaklı Uyarılama Kılavuzu, 2019.

The influence of extreme rainfall events on landslides is enhanced through the destabilization of already vulnerable slopes, a characteristic of Izmir's geology due to the rock containing microfractures and existing faults lines, which leads to plains of weakness within the rock strength. When extreme rainfall events occur, increased erosions rates and saturated ground reduces soil strength, removes soil particles or other materials, and lubricates the existing points of weakness.

As well as the steep sloped topography, Izmir has over 60 km of coastline along deltaic plains and wetlands which is predominantly urbanized and home to growing industrial activity, residential buildings, and a growing number of informal settlements. The city's geography and continuously developing urbanized form will continue exposed Izmir to three key types of flooding: fluvial, surface/urban and coastal.

Izmir's current stormwater management infrastructure has limited capacity, with it being designed to collect both stormwater and wastewater simultaneously. IZSU reports an average of 1146 stormwater or sewerage overflow events per year along the 100km network.

In regard to fluvial flooding in Izmir, there is a particular focus on three key river basins<sup>43</sup>: Little Maeander Basin, Gediz Basin and North Aegean Basin. Academic research undertaken in 2018 demonstrates the number inhabitants at risk of fluvial flooding in these key areas consist of nearly 6% of the total population of Izmir (Table 9).

**Table 9: Number of inhabitants at risk to flooding within province of Izmir in 2018<sup>43,44,45</sup>**

River Basin,	Number of Inhabitants at Risk - 2018
KÜÇÜK MENDERES BASIN	195.841
GEDİZ BASIN	45.03
KUZEY EGE BASIN	12.927
Total popolation of the Basins	253.802
Izmir Province Population	4.320.519
% of Population At Risk	<b>% 5,87</b>

The Flood Management plans for these basins also demonstrate the economic loss that could be associated with flood events of various recurrence intervals (Q50, Q100 and Q500) across the relevant sectors. It is estimated that in present day condition due the occurrence of a

1 in 500-year flood event, Little Maeander Basin could suffer an economic loss of nearly €8 million, Gediz Basin nearly €9 million and North Aegean just over €3 million. Sector specific information can be found in Table 10.

**Table 10: Estimated economic loss (Euros) due to flooding across key sectors within the Little Maeander, Gediz and North Aegean basins. Q50 = 1 in 50-yr, Q100 = 1 in 100-yr. and Q500 = 1 in 500-yr. recurrence intervals.**

	Kucuk Menderes Basin <sup>44</sup>			Gediz Basin <sup>45</sup>			Kuzey Ege Basin <sup>46</sup>		
	Q50	Q100	Q500	Q50	Q100	Q500	Q50	Q100	Q500
Agriculture	93.434.221	104.689.225	-	31.370.457	-	113.277.045	114.872.155	-	-
Building	41.146.022	65.919.695	136.823.409	52.394.574	79.089.441	5.244.699	6.583.399	10.936.475	
Infrastructure (road)	42.872.220	57.636.671	112.306.692	20.838.930	31.168.803	5.746.587	7.820.950	15.785.982	
Vehicle	46.261.364	63.184.091	168.782.576	27.750.000	38.529.545	2.413.636	3.436.364	6.484.091	
<b>Total</b>	<b>223.713.827</b>	<b>1.429.682</b>	<b>7.912.676</b>	<b>2.353.961</b>	<b>8.787.789</b>	<b>6.681.968</b>	<b>2.712.868</b>	<b>3.206.548</b>	

SOURCE<sup>43</sup>British Geological Society ([https://www.bgs.ac.uk/research/engineeringGeology/sgallowGeogazardsAndRisks/landslides/How\\_does\\_BGS\\_dassify\\_landslid\\_des.html](https://www.bgs.ac.uk/research/engineeringGeology/sgallowGeogazardsAndRisks/landslides/How_does_BGS_dassify_landslid_des.html))

<sup>44</sup>Little Maeander Basin Flood Management Plan, Republic of Turkey Ministry of Agriculture and Forestry, General Directorate of Water Management, 2019, Ankara

<sup>45</sup>Gediz Basin Flood Management Plan, Republic of Turkey Ministry of Agriculture and Forestry, General Directorate of Water Management, 2019, Ankara

<sup>46</sup>North Aegean Basin Flood Management Plan, Republic of Turkey Ministry of Agriculture and Forestry, General Directorate of Water Management, 2019, Ankara

<sup>46</sup>Lindsey, R & Dahlman, L (2020). iklim Değişikliği: Küresel Sıcaklık. <https://www.climate.gov/news-features/understanding-dimate/dimate-change-global-temperature>



For the first time in Türkiye, the European Bank for Reconstruction and Development (EBRD) provided a grant of €300,000 to Izmir to prepare a "Green City Action Plan". All stakeholders of the city were involved in the preparation of the Green City Action Plan. Excerpted verbatim from Izmir Green City Action Plan which was prepared with the contribution of more than 100 participants from Izmir Metropolitan Municipality departments, public institutions, non-governmental organizations, universities, and professional chambers, and approved by the city council on 16 December 2020;

## Basket 1: Accelerate transition to low emission vehicles

### Transport: T1.1.3, T1.5

There is a need to increase and generalize the use of environmentally friendly and low emission vehicles due to the impacts that are being experienced from fossil fuel vehicles regarding rising GHG emissions and poor air quality.

As of the Izmir GHG emissions baseline calculated for 2018 in Izmir's SECAP report<sup>11</sup>, the municipalities transport sector contributes to 23.1% (5,780,293 tCO<sub>2</sub>e) of its total emissions. The biggest contributor to the transport sector emissions in Izmir is private vehicles, at 19.9% (Private cars, minibus, bus, truck, pickup and motorcycle). Most of the vehicles are

old (over 13 years) and nearly all fossil fuel powered. Approximately 46% of vehicles are diesel powered which also contributes high volumes of other harmful emissions that reduce air quality. The actions in this basket specifically focus on stimulating a transition away from fossil-fuel vehicles towards low-emission alternatives such as electric, covering both private use and municipality bus fleet and service vehicles.

### What is already being done?

As the use of vehicles in cities increases drastically, local, and central governments as well as international unions, have been searching for and implementing prudential solutions in order to decrease the harmful emissions and decrease the effects of global warming caused by them. IMM has put into practice and is implementing the following Action Plans and Strategic Plans in order to address this challenge:

- Türkiye launched a scheme through the government-supported venture for the first domestically produced electric car. Production is expected to begin in 2022.
- The share of electric and hybrid vehicles is a proportion of the total number of vehicles in Izmir increased by nearly 90% between 2015 to 2018, rising from 772 to 1,884.

- There are currently a total of 46 electric vehicle charging stations in Izmir operated by 4 private companies; Zorlu Energy solutions<sup>12</sup>, Voltrun<sup>13</sup>, Sharz<sup>14</sup>, Eşarj<sup>15</sup> and 1 Municipality affiliated company, Izelman INC.<sup>16</sup>.

- ESHOT, a public transport bus company affiliated with IMM, purchased 20 electric buses in April 2017. These were introduced in 2017 as part of a Zero Emission Community Transportation Project, an award-winning scheme which is reported to be the first of its kind in Türkiye. Charged in part using solar power, they demonstrate the first step towards electrifying the bus network for the province, with a commitment to purchase a further 380 e-buses by 2024.

- Izmir Clean Air Action Plan sets out a range of measures for the City to take to address the issues of high levels of fossil fuel transport and involves projects to generalize public transport, railway, subway, and marine transport, encourage citizens to use public transport and increase vehicle emission inspection<sup>17</sup>.

- Izmir Transportation Master Plan (UPI 2030) has set targets to increase the use of public transportation and non-motorized vehicles, while decreasing the use of private vehicles and shuttles. The transportation modal shares for 2030 is expected be 25.5% of private cars, 42% of public transportation (bus, tramline, metro, commuter rail and service cars), 31% of by foot and 1.5% of bicycle<sup>18</sup>

Izmir Sustainable Energy Action Plan (SEAP) has been prepared which includes significant actions towards energy efficiency measures on transport:

- Purchasing 400 electrical buses for ESHOT bus fleet,
- Replacing 25% of ESHOT bus fleet with new, fuel-efficient vehicles,
- Making 25% of the municipal car fleet, electrical and hybrid cars.

SOURCE: <sup>11</sup>Izmir Sustainable Energy and Climate Action Plan, 2020 <sup>12</sup><https://zes.net/sarj-noktaları.html> <sup>13</sup><https://www.voltrun.com/?gclid=EAlalQobChMI5pGama2x6glVht4YCh3GrgU9EAAAYaAAAEgJarfD BwE> <sup>14</sup><https://www.sharz.net/elektrikli-arac-sarj-sistemleri/?gclid=EAlalQobChMI5pGama2x6glVht4YCh3GrgU9EAAAYASAAAEgJfD BwE> <sup>15</sup><https://esarj.com/harita> <sup>16</sup><https://www.izelman.com.tr/17/elektrikli-arac-sari-istasvanlari> <sup>17</sup>Izmir Clean Air Action Plan, 2016 - [https://webdosva.csb.gov.tr/db/izmir/edittordosva/THEPd\).pdf](https://webdosva.csb.gov.tr/db/izmir/edittordosva/THEPd).pdf) (1) <sup>18</sup>Izmir Transportation Master Plan (UPI 2030) Executive Summary

## Specific Strategic Plan Objectives of IMM

The following strategic objectives and goals have been selected from the IMM Strategic Plan 2020-2024 as the actions developed around low emission vehicles. Strategic goal 2.4 includes "Installation of EV Charge stations" as one of the proposed activities and projects.

**Table 11: Priority Environmental Challenges**

State Indicator	Priority Environmental Challenges
GHG Emissions	Reducing the Municipalities emissions as part of the city's commitment to a 40% reduction in emissions against the 2018 baseline by 2030.
Air Quality	Diesel vehicles constitute 46% of all cars within Izmir, with an increasing trend. The particulate emissions originating from diesel vehicles are transferred by either wind or water and are spread, polluting the soil. Electric and hybrid vehicles represent only 0.04% of total vehicles in Izmir

**Table 10: A summary of IMM Strategic Plan 2020-2024 objectives addressed by this basket**

Strategic Heading	Strategic Goal	Strategic Objective
Quality of Life - Urban Transportation	2. Making Izmir a Smart City with a High Level of Quality of Life and A Well - Developed Transport Network	<b>2.2.</b> A Sustainable Transport System Will Be Created With a Harmonious Interaction Between Different Modes of Transport, Offering Different Options
Quality of Life - Accessible and Clean Energy	2. Making Izmir a Smart City with a High Level of Quality of Life and A Well - Developed Transport Network	<b>2.4.</b> Access to Reliable, Sustainable and Affordable Energy by Everyone Will be Promoted

## Priority Environmental Challenges Addressed

The following key findings from this study were presented at the Challenge Prioritization Workshop, at which the Technical Committee and stakeholders were consulted to verify the findings and prioritize the challenges. These priority environmental challenges have been identified as exacerbating the need to transition to low emission vehicles:

### Actions

The Green City actions around transition to low-emission vehicles across the municipality are summarized below (Table 12). Detailed descriptions of each action are presented where they were identified to be detailed by the municipality.

**Table 12: Actions within basket**

Action I.D	Action Headline	Action Type	Priority Challenges	Level of Impact of the Action	Indicative Cost
T1.1.3	Promote a Step Change in the Uptake of Privately and Municipality Owned Low Emission Vehicles	Capital project	Proportion of diesel vehicles	Medium-high	<b>CAPEX:</b>
					A total of 50 rapid charging points: € 17,000 A total of 50 slow charging points: € 11,000
T1.5	Municipal Fleet and Service Vehicles: Electric Vehicle Purchase	Capital project	Municipal mitigation planning	High	<b>CAPEX:</b> € 400.0.000 - € 600.0.000 <b>OPEX:</b> € 78.000 - € 96.000 <b>Desing / Development:</b> € 64.000 - € 80.000

### Case Study, learning from other cities 20

## Clean Vehicles in Rotterdam

In 2012, Rotterdam embarked on a 12-month project to test the overall feasibility of electric vehicles, during which it monitored 75 electric vehicles and 129 charging points. This project

assessed the performance of fully electric and plugin hybrid vehicles, but it also focused on the efficiency of the whole chain of electric vehicle technological components, from

distribution transformers to charging points. The tank-to-wheel results showed that the electric vehicles reduced direct CO<sub>2</sub> emissions by 67% and particulate emissions by up to 20%.

SOURCE: <sup>20</sup>Compiled from the following sources: Paris Process on Mobility and Climate (PPMC) Article, <http://www.ppmc-transport.org/rotterdams-commitment-to-electric-mobility/>. Success Stories: Rotterdam City, <https://eevbox.com/en/success->. Clean Vehicle Procurement in Rotterdam Presentation by Rotterdam Climate Initiative. [https://civitas.eu/sites/default/files/3b\\_national\\_framework\\_nl\\_messemaker.pdf](https://civitas.eu/sites/default/files/3b_national_framework_nl_messemaker.pdf)

**The expansion of its electric charging infrastructure:**

Municipality provides electrical charging infrastructure according to consumer demand. If an electric vehicle owner cannot have a charging station on their property, the city will install a public charging station within 250 meters of their home or business. Rotterdam Municipality also provides charging infrastructure in its public carparking facilities.

**Revision of its municipal fleet, favoring electric vehicles:**

In 2014, the municipal fleet had 25% electric vehicles. The new challenge is to increase the whole municipal fleet to 50% clean vehicles by 2018.

**Funding innovative projects to attract business/private sector interest in electro mobility and new charging technology:**

Rotterdam's current pilot projects include projects on smart charging, inductive charging, battery improvement, infrastructure improvement to increase the business case for charging facilities, and pilot projects on the feasibility of electrical buses and garbage trucks.




**Creating Green Deals with urban logistics companies to encourage zero emission deliveries:**

Together with big frontrunner freight companies such as TNT and DHL, the city aims at zero emission goods delivery in the city by 2020.

IMM are striving to replace and expand their existing fleet with a low-emission alternative, whilst encouraging a private uptake of EV's. This case study demonstrates successful approaches taken to both funding opportunities, pilot studies, infrastructure development and fleet technologies that are available.

<b>T1.1.3: Promote a Step Change in the Uptake of Privately and Municipality Owned Low Emission Vehicles</b>	
Strategic Plan Objectives	<p><b>2.2</b> A Sustainable Transport System Will Be Created With a Harmonious Interaction Between Different Models of Transport, Offering Different Options</p> <p><b>2.4</b> Access to Reliable, Sustainable and Affordable Energy by Everyone Will be Promoted</p>
Description	<p>This action will help İzmir take advantage from being at the forefront of the transition to electrified mobility through measures to that support electric vehicle use including:</p> <ul style="list-style-type: none"> <li>● Priority parking for electric vehicles;</li> <li>● The provision of new and smart electric vehicle (EV) charging infrastructure;</li> <li>● To promote and encourage commercial buildings to have EV charging stations, with business licences granted by IMM</li> <li>● Install EV charging stations for all municipal buildings and municipal parking area</li> </ul> <p>Introduction of an all-electric / hybrid car club pool</p>
Rationale	<p>Emissions from fossil fuel degrade İzmir's air quality, which is significantly poorer in the city centre, and contribute to climate change. EV have several advantages, including lower emissions, noise and vibration levels. The environmental impact of fossil fuel vehicles is leading to stricter EU emissions standards leading to several major automotive producers have announcing they will stop working on diesel engines and concentrate on hybrid and electrical vehicle engines in the first half of the next decade. A local brand of e-vehicle is under development. Mass production will start in the next 3-5 years. Furthermore, EVs typically have lower the operating costs of the municipal fleet over time, with generally lower maintenance costs, and EVs will not be dependent on the volatile prices of oil. Promoting hybrid and electric vehicles in the city is also one of the actions planned in İzmir Transportation Master Plan (2019). Supporting the uptake of EVs will help improve İzmir's environment and benefit from being at the forefront of the transition</p>
Steps for Implementation	<p><b>Priority parking and EV charging infrastructure:</b></p> <ol style="list-style-type: none"> <li>1.Undertake mapping of dedicated parking areas and street parking</li> <li>2.Develop provision standards for EV charging sites (including catchment / distribution density), charging capacity (speed), type of charging connections.</li> <li>3.Identify spaces within municipal buildings, municipal parking areas and streets which have beneficial positioning / access that can be reserved for EVs.</li> <li>4.Re-paint parking spaces and add install new signage.</li> <li>5.Work with GDZ Electricity for a feasibility study to evaluate grid capacity for installation of charging infrastructure.</li> <li>6.Monitor and enforce correct use of parking spaces.</li> <li>7.Work with EV charging operators to fund, install and operate charge points. These could be connected to other municipal infrastructure such as lighting columns.</li> <li>8.Work with private parking operators to encourage their support of priority parking for EVs and installation of charging infrastructure.</li> <li>9.Develop policies for EV parking and charging within new development</li> <li>10.Stakeholder engagement consultations and public awareness campaigns for the use of EVs</li> </ol>

**T1.1.3: Promote a Step Change in the Uptake of Privately and Municipality Owned Low Emission Vehicles (Continued)**

	<p>11.To promote and encourage commercial buildings to have EV charging stations through business licences granted by IBB.</p> <p><b>Introduce EV / Hybrid vehicle car club:</b></p> <p>1. In conjunction with identifying EV priority parking, identify locations for positioning EVs to be used as part of a shared pool 'car club'. These could be specific locations on residential streets, or within development areas.</p> <p>2.Set up carpool club sharing company or working with existing car club operators to provide EVs.</p> <p>3.Promote benefits of scheme</p>										
Type of action	Capital projects										
Environmental values positively affected	  										
Vulnerabilities addressed.	-										
Potential Emissions Savings	Is is assumed that 30 % of private cars will be switched to electric vehicles by 2030 335.686 tCO <sub>2</sub> e n2030i										
Plan for delivery	<table border="1"> <tr> <td><b>Action owner</b></td> <td>IMM</td> </tr> <tr> <td><b>Stakeholders</b></td> <td>                     İzelman INC.                      Ministry of Transportation and Infrastructure                      GDZ Electricity                      NGOs                      District Municipalities                      Citizens                      Entrepreneurs, start-ups, EV retailers, car club operators                      Developers                 </td> </tr> <tr> <td><b>Financing options</b></td> <td>Municipal budget, IFIs, private finance (charging companies, car companies etc), PPP, İbank,</td> </tr> <tr> <td><b>Revenue/savings opportunities</b></td> <td>Electric vehicles will lower OPEX of the municipal fleet over time as EVs will not be dependent on the volatile prices of oil and generally have fewer associated maintenance costs. Air quality benefits may also lead to avoided healthcare costs.</td> </tr> <tr> <td><b>Timeline</b></td> <td>2021 - 2030</td> </tr> </table>	<b>Action owner</b>	IMM	<b>Stakeholders</b>	İzelman INC. Ministry of Transportation and Infrastructure GDZ Electricity NGOs District Municipalities Citizens Entrepreneurs, start-ups, EV retailers, car club operators Developers	<b>Financing options</b>	Municipal budget, IFIs, private finance (charging companies, car companies etc), PPP, İbank,	<b>Revenue/savings opportunities</b>	Electric vehicles will lower OPEX of the municipal fleet over time as EVs will not be dependent on the volatile prices of oil and generally have fewer associated maintenance costs. Air quality benefits may also lead to avoided healthcare costs.	<b>Timeline</b>	2021 - 2030
	<b>Action owner</b>	IMM									
	<b>Stakeholders</b>	İzelman INC. Ministry of Transportation and Infrastructure GDZ Electricity NGOs District Municipalities Citizens Entrepreneurs, start-ups, EV retailers, car club operators Developers									
	<b>Financing options</b>	Municipal budget, IFIs, private finance (charging companies, car companies etc), PPP, İbank,									
	<b>Revenue/savings opportunities</b>	Electric vehicles will lower OPEX of the municipal fleet over time as EVs will not be dependent on the volatile prices of oil and generally have fewer associated maintenance costs. Air quality benefits may also lead to avoided healthcare costs.									
<b>Timeline</b>	2021 - 2030										
Impact measures	<ul style="list-style-type: none"> <li>● All air quality indicators</li> <li>● Concentration of heavy metals in soils (zinc, cadmium)</li> <li>● Annual CO<sub>2</sub> equivalent emissions per capita</li> <li>● Annual CO<sub>2</sub> emissions per unit GDP</li> <li>● Average age of car fleet total and by type</li> <li>● Share of total passenger car fleet run by electric hybrid fuel cell Liquefied Gas LPG and Compressed Natural Gas CNG energy total and by type</li> <li>● Number of private EVs</li> <li>● Number of charge points delivered</li> </ul>										
Estimated cost	<p><b>CAPEX:</b> €17,000 for 50 rapid charging points. €11,000 for 50 slow charging points.</p> <p><b>OPEX:</b> N/A</p> <p><b>Design/development costs:</b> N/A</p>										
Estimated benefits	<p><b>Health Impacts:</b> Public health – reduced pollution</p> <p><b>Economic Development:</b> Increased economic efficiency; economic growth; employment creation, Revenue/savings generating activities</p> <p><b>Social Inclusion:</b> Access to basic services</p> <p><b>Environment:</b> Reduced pollution, mitigation of GHG emissions..</p>										
Existing Work Leveraged	İzmir SEAP 2016										
1/25,000 scaled IMM Environmental Plan Alignment	<ol style="list-style-type: none"> <li>1. İzmir Bay</li> <li>2. Central City</li> </ol>										

# Izmir's Strategy for Living in Harmony With Nature

The main lines of the process are set out in figure 2 according to the CoM methodology intended as a guide for all the local administrations involved in the development of SECAP in signature cities to the Pact of Mayors.

The first and second steps of this process fall under the aegis of SECAP. During this process managed in line with the Pact of Mayors reporting scheme and accompanying management report, there will be:

- 1.The creation of an inventory of current greenhouse emissions with an examination of the current situation including an assessment of risks and vulnerabilities.
- 2.The monitoring of practical actions undertaken in order to obtain more information concerning emissions.

Excerpted verbatim from Izmir's Strategy for Living in Harmony with Nature.

## Boxed Insert 5.1 The Izmir GCAP and SECAP Methodologies

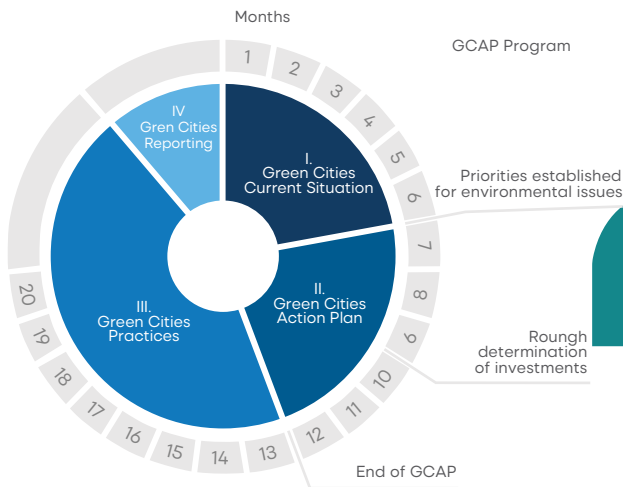


Figure 1. GCAP steps

The Green Cities process has been prepared according to a consistent methodology utilized by all the cities preparing and implementing YSEP. This methodology has been developed by the EBRD in collaboration with the Organization for Economic Cooperation and Development (OECD), and International Council of Local Environmental Entrepreneurs (ICLEI).

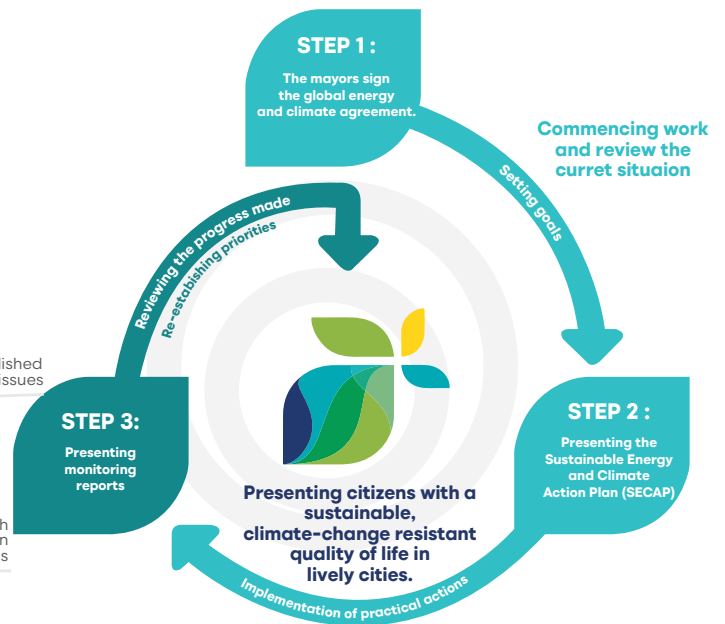


Figure 2. SECAP steps

The methodology consists of four main steps:

- 1-An evaluation of the current Green Cities status
- 2-The Green Cities Action Plan
- 3-The Green Cities implementation stage
- 4-The Green Cities reporting stage

reduce emissions, and increase resilience vis-à-vis climate change.

The third step consists of implementation and monitoring. SECAP requires regular monitoring (once every two years) and should be revised when necessary.



## Boxed Insert 5.2 Izmir's Greenhouse Inventory

Izmir's greenhouse emissions in 2018 were calculated at 25 million 62 thousand 569 tCO<sub>2</sub>e (equivalent to tons of carbon dioxide). The largest share of this was attributed to industry, at 31.4%. This was followed by

transport, at 23%, domestic buildings, at 14.3%, and agriculture, at 8.2%.

As of 2018, Izmir's greenhouse emissions have been at 14.319.706

tCO<sub>2</sub>e annually. According to a scenario in which everything continues on its current course (BAU), by 2030 Izmir's annual emissions will be at 17.691.125 tCO<sub>2</sub>e.

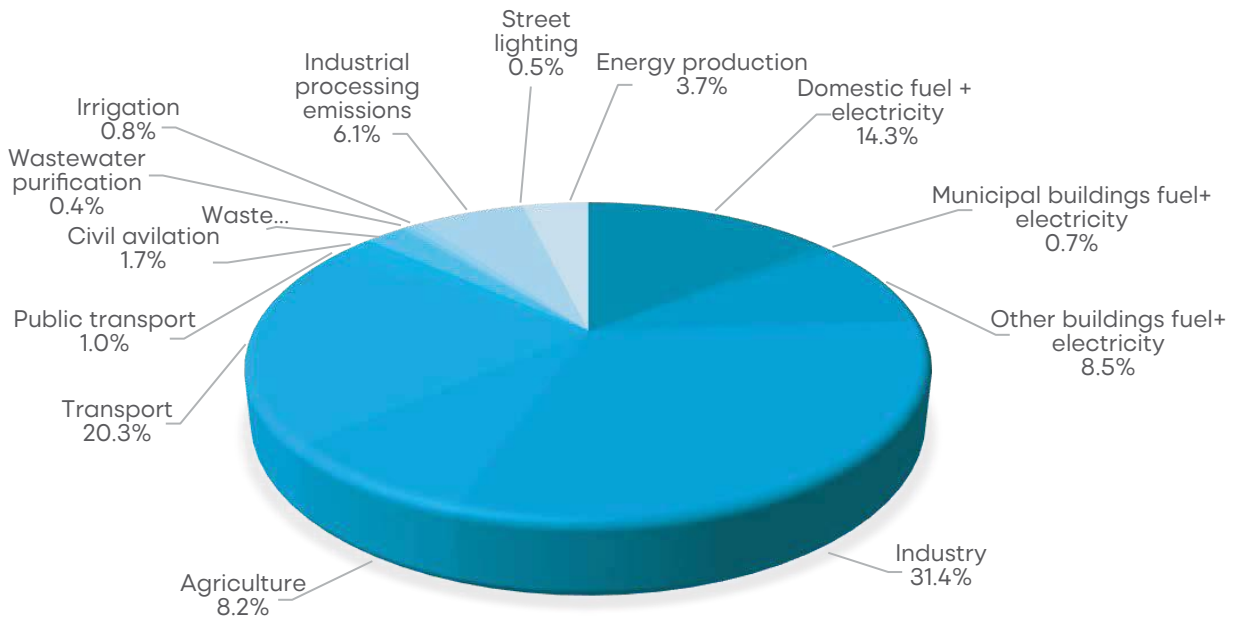


Figure 1. Sectoral distribution of Izmir 2018 Greenhouse Gas Emissions

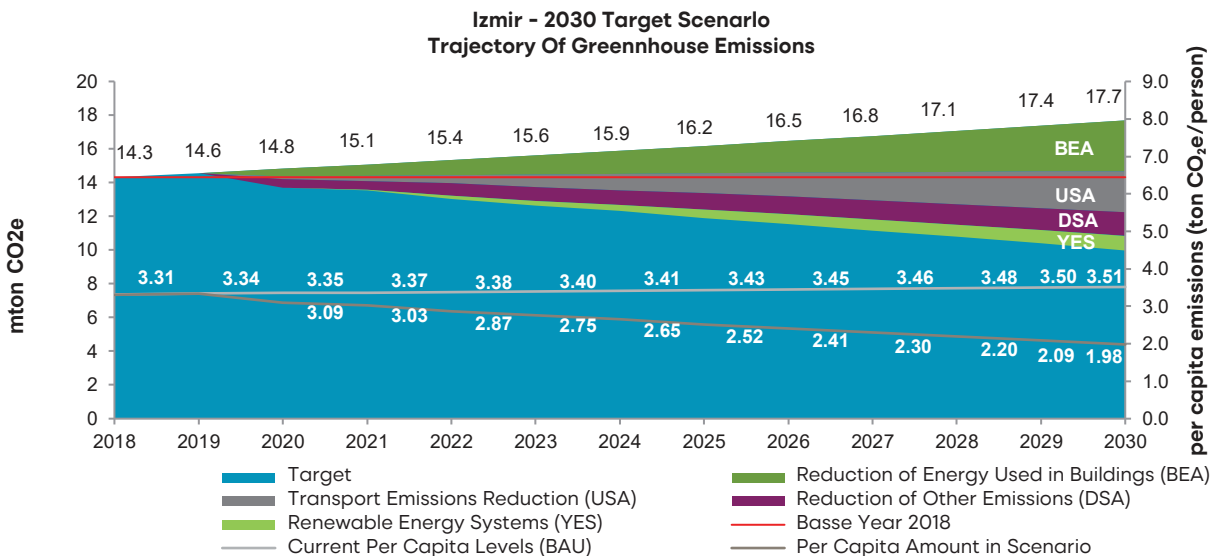


Figure 2. Reduction Scenarios



Izmir joined the "Plastic Waste-Free Cities Network", which was launched by WWF worldwide and includes 36 countries, in December 2019 with the signing of the declaration of intent by Mr. Tunc Soyer, Mayor of IMM, and Izmir became the second city in the Mediterranean after Nice to commit to becoming a plastic waste-free city by 2030.

In this direction, we present to you, our esteemed readers, the "Plastic Waste-Free City Action Plan" (excerpted verbatim) prepared as a result of the pilot applications initiated in Cesme.

## 2.2 Actions for Izmir without Plastic Waste

### List of Actions

#### Theme 1: Actions to Reduce Plastic Waste Generation

##### 1.1 Banning Single-use Plastics

**1.1.1** The municipality commits to ban the use of single-use plastics in municipal buildings and encourages local businesses to do the same (SW 1.10)

**1.1.2** Initiate efforts to remove single-use plastics from cafes and restaurants under the management of the municipality and its subsidiary companies, and from producer markets and neighborhood markets supported by the municipality

#### 1.2 Reducing the Use of Single-use Plastics

**1.2.1** Green purchasing preferences in the procurement of goods and services within the Municipality

**1.2.2** Implementing green protocol at organized events

**1.2.3** Investigate the feasibility of unpackaged drinking water supply and recharge systems

**1.2.4** Incentives to increase the availability and accessibility of alternatives to Single-use plastic products

#### Theme 2: Actions to Strengthen Reuse and Recycling Mechanisms

##### 2.1 Project Development to Support Reuse Opportunities

**2.1.1** Reuse Center Project Research

**2.1.2** Project Research on Refillable Product Sales in Community Grocery Stores

##### 2.2 Ensuring that waste is collected separately at source and delivered to the correct storage/recycling centers

**2.2.1** Preparation of Izmir Province Packaging Waste Recovery Management Plan

**2.2.2** Developing the IzDonusum Application

**2.2.3** Ensuring Separate Collection of Agricultural Packaging Used in Agriculture

**2.2.4** By Setting Policies at District Municipality Level, Make separate collection of recyclable dry materials mandatory (SW 1.3)

**2.2.5** 2.2.5 Examine the Possibility of Providing Special Waste Collection Services for Restaurants and Food Tradesmen in line with Management Infrastructure and Technology (SW 1.16)

**2.2.6** Partnering and/or Cooperating with Relevant Institutions that can act together in accordance with the Zero Waste Regulation to Invest in Necessary Recycling Infrastructure (bins, trucks, routes, etc.) (SW 1.6)

**2.2.7** Evaluate Waste Collection Infrastructure (collection service, collection rate, bins/containers, vehicles), including Smart Collection Systems and Route Optimization Software, in Cooperation with District Municipalities (SW 1.17)

**2.2.8** Support and Accelerate Investments in Waste Segregation (dry recyclables and organic waste) and Clean Materials Recovery Infrastructure and Composting Facilities, Building on IMM's Integrated Solid Waste Management Plan (2018) (SW 1.4)

#### Theme 3: Actions for Education and Communication

##### 3.1 Training Activities for Preventing and Reducing Plastic Waste Generation or Collecting Plastic Waste Separately at Source

**3.1.1** In order to increase the inclusiveness, efficiency and effectiveness of the training, a training and implementation plan specific to plastic waste should be prepared in coordination with relevant stakeholders by mapping across Izmir.

**3.1.2** Organizing social awareness raising activities throughout the city (e.g., in schools) to reduce the amount of waste in households and to separate waste (SW 1.1)

##### 3.2 Communication and Awareness Activities for Preventing and Reducing Plastic Waste Generation or Collecting Waste Separately at Source

**3.2.1** Preparation and implementation of a 'Communication Plan' to increase the visibility of Plastic Waste Free Izmir activities

**3.2.2** Developing a promotional project for enterprises that do not produce plastic packaging waste

**3.2.3** Conducting studies to increase the participation and awareness of citizens in coastal sea and bay cleaning activities

## Theme 1: Actions to Reduce Plastic Waste Generation

### 1.1 Banning Single-use Plastics

1.1.1 The municipality commits to ban the use disposable plastics in municipal buildings and encourages local businesses to do the same (SW 1.10)

Strategic Plan Goals	<b>6.2</b> Institutional Capacity and Functioning Will be Made More Effective, Economical and Efficient
Definition	In order to reduce the amount of non-recyclable waste and green house gas emissions, the Municipality will commit to banning the use of disposable plastics in its buildings and businesses and will encourage other organizations, businesses, and institutions to do the same.
Rationale	<p>According to the United Nations Framework Program report 'Single Use Plastics – A Roadmap for Sustainability', the use single – use plastics leads to the following impacts</p> <ul style="list-style-type: none"> <li>● Micro-plastics formed by the degradation of plastics are directly consumed by wild animals or mixed into the food they eat, affecting wildlife</li> <li>● Clogging of waterways and wastewater systems – Visual pollution caused by waste</li> <li>● Economic cost of cleaning the coast and seas and the economic impact on fishermen, tourism, and transportation sectors</li> <li>● Production and disposal of plastics cause greenhouse gas emissions, and most of the plastics cannot be recycled IMM has direct control over municipal buildings. Banning the use of single-use plastics is a very simple step that can be taken to reduce the total amount of non-recyclable waste and greenhouse gas emissions in İzmir.</li> </ul>
Implementation Steps	<p>Municipal commitment to ban the use single-use plastics;</p> <ol style="list-style-type: none"> <li>1. Identify stakeholders and approve the policy scope,</li> <li>2. Inventory of single-use plastics,</li> <li>3. Identification of possible alternatives and mandatory/non-replaceable items,</li> <li>4. Impact assessment of costs and risk,</li> <li>5. Develop and implement a plan, including roles and responsibilities, communication strategy and timeframe</li> <li>6. Implementation and monitoring</li> </ol>
Implementation Steps	<p>Encouraging Local Businesses to follow suit;</p> <ol style="list-style-type: none"> <li>1. Voluntary mitigation strategies and agreements for local businesses,</li> <li>2. Prepare case studies and guidelines (including methodological principles), organize public campaigns for their implementation,</li> <li>3. Monitoring the implementation</li> </ol>
Time Frame	
Action Owner	2020-2023
Stakeholders	IMM
	<p>Local Businesses NGOs Citizens</p>



# Flamingo

Emirali KOKAL



*Izmir's Gediz Delta, where 15-20 thousand pairs of flamingos breed, hosts 10 percent of the world population of these unique creatures. Therefore, Izmir is one of the most important places for the world's flamingos. The main reason why flamingos choose this area is that the Gediz River flows into the Gulf of Izmir, creating unique coastal promenades.*

# Energy and Water Saving Methods to Combat Climate Change

Greenhouse gas emissions from energy production and consumption processes are among the most important causes of global warming and climate change. It is possible to combat climate change by taking individual measures

## Household Electrical Appliances

We may prefer white goods with a high energy efficiency class, in other words with low energy consumption. Class "A" has the highest efficiency and class "G" has the lowest efficiency.

When food items are placed warm in the refrigerator, the amount of energy consumed by the refrigerator will increase.



## Thermal Insulation in Buildings

The thermal insulation we will have in our buildings will reduce the energy spent for air conditioning systems for four seasons.

Air leakage can be prevented with auxiliary apparatus such as insulation tapes, brushes, thin rubber, plastic or metal parts and pastes.

## Water Consumption

We spend about 10% of the total water we consume at home in the kitchen.

We can reduce our water consumption by installing devices (aerators) that increase the flow rate of water in our taps and faucets.

## Lighting

We can save up to 80% by using LED bulbs in our homes.

We can reduce our energy consumption by making the most of daylight and keeping the lamps off when we are not in the room.

## Air Conditioning

Every 1 °C temperature decrease in our air conditioners in summer will increase our electricity consumption.

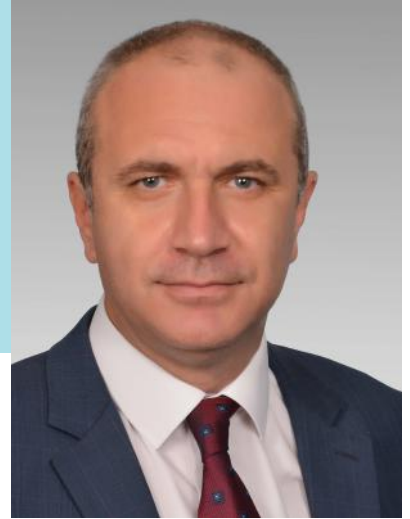
We can reduce our energy costs by periodically cleaning or replacing the air filter of our air conditioners.



# Türkiye's National Energy Plan in Perspective of Renewable Energy Sources

**Dr. Murat DURAK**

Chairman of the Board of Directors of Offshore Wind Energy Association



The Turkish National Energy Plan was announced by the Ministry of Energy and Natural Resources in December 2022. Türkiye's National Energy Plan study is a part of the National Energy Plan, which is included in Article 20 of the Electricity Market Law No. 6446, titled "Security of Supply".

It was prepared in accordance with the provision "The long-term National Energy Plan for Türkiye shall be prepared and published by the Ministry every five years". Projections for the 2035-2053 period were also included in the plan.

The population data used in the planning is based on the reference values in the 2018-2080 period projection study of the Turkish Statistical Institute (TurkStat).

For economic growth values, growth data of the Presidency of the Republic of Türkiye, Presidency of Strategy and Budget was used.

The study includes projections starting from 2020 until 2035. The primary energy consumption of our country in 2020 was 147.2 MTEP. By the year 2035, primary energy consumption is projected to increase to 205.3 MTEP. Primary energy consumption in Türkiye, which increased at an average annual rate of 3.1% between 2000 and 2020, is modeled to increase by 2.2% between 2020 and 2035.

The share of renewable energy sources in primary energy consumption, which was 16.7% in 2020, is projected to be 23.7% in 2035.

The figure below shows the percentages of solid fuels, oil, natural gas, nuclear and renewable energy sources between 2020 and 2035.



## Electricity Installed Capacity of Türkiye in 2035

95.9 GW of installed electricity capacity in 2020 was calculated to increase to 189.7 GW in 2035 and was included in Türkiye's National Energy Plan. The share of renewable energy sources, which was 52% of installed capacity in 2020, is planned to reach 64.7% by 2035. Hydroelectric power plants reach an installed capacity of 35.1 GW in the medium-long term. The installed capacity of geothermal and biomass power plants reaches 5.1 GW.

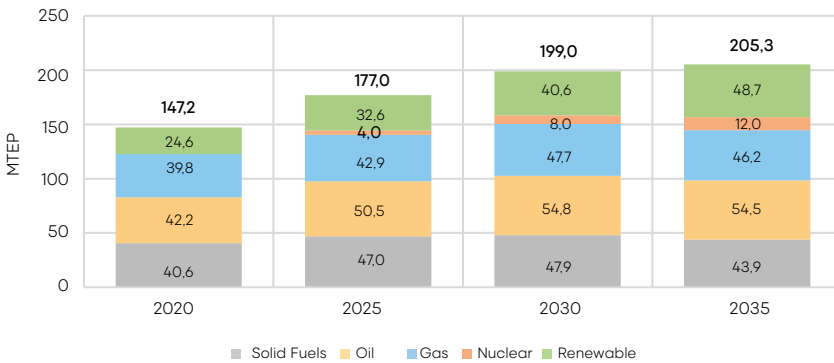
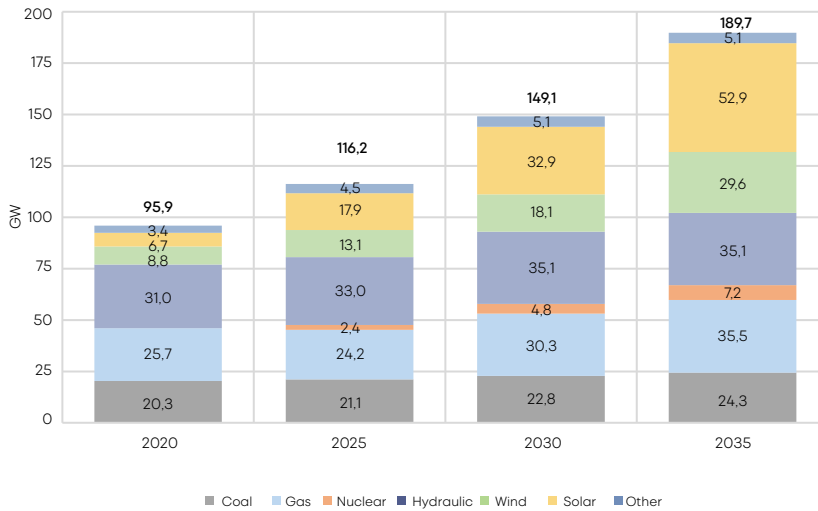


Figure 1: Percentage of energy sources between 2020 and 2035.



● Electricity installed capacity reaches 189.7 GW.

In order to meet flexibility requirements;

● Battery capacity is increased to 7.5 GW (2 hour charging time),

● Electrolyzer capacity reaches 5.0 GW.

Considering the opportunities that our country currently has in the electricity system and may have in the coming period and the renewable energy potential, it is planned to increase the share of wind and solar energy resources in total electricity generation. In this context, the installed capacity on the basis of resources in 2035 is planned at the following level;

● Onshore wind power installed capacity as 24.6 GW,

● Installed capacity of offshore wind power as 5 GW,

● Installed solar power capacity as 52.9 GW,

● Hydroelectric power installed capacity as 35.1 GW,

● Geothermal and biomass as 5.1 GW

● Nuclear energy to 7.2 GW.

**Figure 2. Installed electricity capacity in 2035.**

## New Capacity to be Commissioned by 2035 and Targets

As of the end of 2022, the installed capacity in Türkiye is around 102 GW. The capacity to be commissioned until 2035 is calculated as 96.9 GW. When analyzed in terms of five-year periods, it translates into the commissioning of 21.6 GW of new capacity by 2025, 34.3 GW in the 2026-2030 period and 41 GW in the 2031-2035 period.

Of this installed capacity increase, 74.3% is composed of renewable energy sources, mostly solar and wind energy. While the annual new capacity for wind energy is 1.4 GW, that number is 3.1 GW for solar energy.

According to Türkiye's National Energy Plan, in the period 2020-2035;

● Primary energy consumption rises to 205.3 MTEP,

● Electricity consumption reaches 510.4 TWh,

● The share of electricity in final energy consumption reaches 24.9%,



Keban Dam, Elazig

## Türkiye Energy Transition Outlook



Ahmet ACAR

Civil Engineer  
SHURA Energy  
Conversion  
Center Analyst

2021 was an important year in Türkiye's energy history with the ratification of the Paris Climate Agreement and the announcement of a net zero emission target for 2053. At the COP27 in November, with the updated Declaration of National Contribution, Türkiye announced an increase in its mitigation target from the 21 percent emissions increase set for 2030 to 41 percent. Although the announced target seems more stable, it is possible to say that emissions under the mitigation scenario will be 33 percent higher than in 2020.

The energy sector is responsible for around 87 percent of Türkiye's total carbon dioxide (CO<sub>2</sub>) emissions. This situation increases the urgency of the sector's decarbonization process from the perspective of combating climate change. In order for Türkiye to transition to a carbon-neutral economy by 2053, it is important to increase the share of renewable energy sources in electricity generation, while replacing fossil fuels with electricity generated from renewable sources in end-use areas. In addition, there is a need to accelerate the increase in energy efficiency in all sectors, the electrification of transportation and heating, as well as the development of infrastructure and technology for these sectors.

As mentioned in the 'Türkiye Energy Transition Outlook 2021' report



prepared by SHURA Energy Conversion Center, fossil fuels account for 83% of primary energy supply and renewable energy sources account for 17%. By the end of 2021, the share of renewable energy sources in Türkiye's total installed capacity reached 54 percent, while the share of renewable sources in generation was 36 percent,

17 percent of which was non-hydroelectric sources. Türkiye's imports of energy products increased by 57 percent in 2021 compared to 2020, reaching 50.6 billion dollars. Reducing Türkiye's dependence on imported fossil fuels is important for both energy supply security and reducing the foreign trade deficit.





As part of Türkiye's energy transformation, energy efficiency is at the center of the country's strategies and targets and has long been covered in detail in energy policies. In terms of Türkiye's 2023 targets, Türkiye's primary energy intensity decreased by 12.7 percent between 2012 and 2020, and progress needs to accelerate to reach the 20 percent targeted in the Strategy Document in 2023.

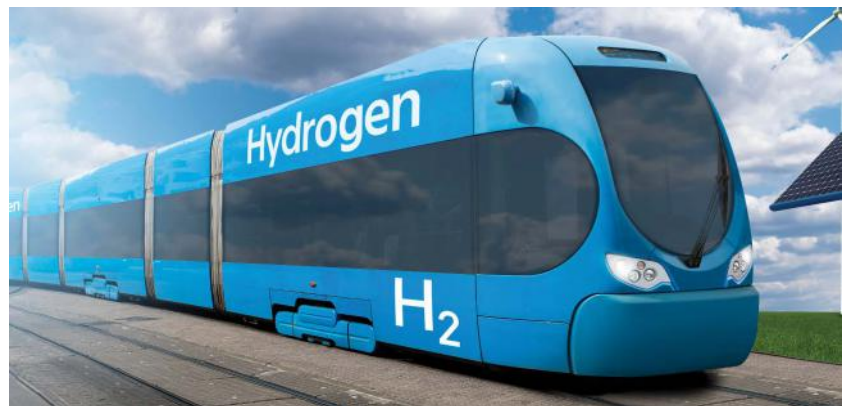
After 2000, the share of electricity in total energy consumption in Türkiye has increased significantly. The expansion of the electricity grid and the increased use of electrical appliances (white goods, air conditioners and heaters) in residential, commercial and service buildings play an important role in this increase. The widespread use of electric arc furnaces, especially in iron and steel production, has a significant share in the increase in the industrial sector. The share of electricity in the energy consumption of the transportation sector is below 1% as of 2020. In 2021, the share of electric and hybrid vehicle sales in total vehicle sales nearly doubled to 9% compared to 4% in 2020.

The grid flexibility required by widespread electrification and the increasing share of variable renewables in electricity generation can minimize the need for fossil-fuel power plants and ensure system reliability and stability. Greater flexibility can be achieved through

options such as battery energy storage, pumped storage hydroelectric power plants, demand response, increased use of interconnection lines, system-oriented approach to the location of power plants, and hot reserves from renewable energy sources.

In parallel with the transformation of energy systems, digitalization activities and digital technologies are becoming more prevalent to help transform the power sector value chain. Global net zero emission targets are focusing on green hydrogen as a common solution for decarbonizing the entire energy system. It appears important to understand the role of green hydrogen in the transformation of Türkiye's energy system and to plan accordingly.

Although energy supply security concerns, which have come to the fore with international developments such as the Russia-Ukraine war, support energy transformation in the long term, in the short term, they may lead to limited financial resources being directed towards domestic fossil fuels as well as renewable energy. The uncertainties brought about by the war and the rapid increase in energy commodity prices have led to a global energy crisis, the effects of which are being felt in many different areas. This situation shows the importance of Türkiye reducing its dependence on foreign energy. In the coming period, Türkiye's focus on renewable energy sources, energy efficiency, electrification of the transportation and heating sectors, and the development of clean technologies such as green hydrogen can play a key role in drawing a roadmap for a net zero target.



## Sponge City Izmir Project

The introductory meeting of the Sponge City Izmir project, realized with the vision of "Another Water Management is Possible" by Izmir Metropolitan Mayor Tunc Soyer, was held at the Historical Coal Gas Factory Youth Campus. The project, which will be the first of its kind in Türkiye, will ensure that rainwater falling on the city's avenues, streets and roads will be stored underground with scientific applications. The project, which will enable the rainwater falling on the roofs to be harvested, collected, cleaned and reused, was presented to the public by Mayor Tunc Soyer. Stating that they will break the concrete crust that has been laid over Izmir and ensure that the water meets the soil again, Soyer said that they established the Water Resources and Water Engineering Research and Application Center within IZENERGY Inc. a year and a half ago in order to create the planning and technical infrastructure for the Sponge City Izmir project.

**YAĞMUR TOPLAYAN ŞEHİR**  
Gökten yağan bereketi yağmur hasadı ile biriktiriyor, taşkın ve kuraklıkla mücadele ediyoruz.  
SU DÖNGÜSÜ İLE YEŞİL DÖNÜŞÜM



TUNC SOYER

SUNGER KENT

Pointing out that one of the most important features of the Sponge City Izmir project is that it is based on the participation of all citizens living in Izmir, Mayor Soyer said, "We will realize two comprehensive applications of our project together with our citizens. The first of these is rainwater harvesting. We will utilize the rain that falls in our city and return it to the natural water cycle. By implementing an incentive system for rainwater harvesting, we will gift 5 thousand rainwater tanks to 5 thousand buildings. The amount of water falling on the roofs of our city is more than the water accumulated in Tahtali Dam, our largest drinking water



source, every year. In other words, the rain that falls in our city is unfortunately wasted, polluted, and causes floods and inundation. With five thousand rainwater tanks, we will both save water and contribute to the cleaning of the gulf, and at the same time we will support the prevention of floods and floods."

Emphasizing that the second project is the "10 thousand rain gardens for Izmir" campaign, Mayor Soyer said: "We will provide 10 thousand citizens who will apply for rain gardens with the plants they will grow in their rain gardens.

they will grow in their rain gardens. With each rain garden we will create in Izmir, we will prevent rainwater falling on our streets and avenues and going to our sewage system, we will protect it from floods, we will clean our water and thus reintroduce it to nature. With Sponge City Izmir, we will gradually implement many other pilot projects in urban and rural areas. Izmir will gain a blue and green infrastructure. Water will flow to the streets, alleys, roofs and gardens of Izmir to meet the soil again."

Applications for rain gardens and stormwater tanks can be made at <https://sungerkent.izmir.bel.tr/>.



## Bremen and Izmir Will Cooperate in Clean Energy and Agriculture



Tunc Soyer attended the 2nd Bremen-Izmir Economic Forum Business People Meeting, organized by The Izmir World City Association (DIDER) and IMM, with the participation of more than 50 companies on the occasion of the anniversary of Bremen and Izmir becoming sister cities. The meeting held at the Bremen Science House started with the opening speeches of Soyer, Bremen Mayor Dr. Andreas Bovenschulte and DIDER Bremen Office President Ali Elis. In his speech, Soyer emphasized the importance of inter-city cooperation on issues such as start-ups, renewable energy, sustainable agriculture and food, and the role Izmir plays as a pioneer role in these three areas.

## IzDonusum Waste Collection Vehicle Fleet is Expanding

Izmir Metropolitan Municipality has invested in a vehicle fleet consisting of 10 waste collection trucks and 10 electric motorcycles in the IzDonusum project initiated by IzDoga, one of its subsidiary companies. Izmir Metropolitan Municipality Mayor Tunc Soyer, who continues to work with the goal of building an Izmir in harmony with nature, commented: "The vehicles purchased to facilitate waste collection first started to work in Karsiyaka, Karabaglar, Buca, Narlidere and Bornova, where waste collection bins were distributed. We aim to expand the number of waste collection bins and vehicles in a short time and to spread the IzDonusum project across Izmir."



## Visit of the Ambassador of Costa Rica to Ankara



Gustavo Campos Fallas, Ambassador of Costa Rica to Ankara, visited Tunc Soyer in his office. Stating that he had visited Izmir before and was very impressed, Gustavo Campos Fallas remarked, "Izmir is a very developed city. Joint work can be carried out on ecotourism. Social, economic and environmental sustainability is essential." Tunc Soyer also said that Costa Rica's policies on nature are developing and this is very important. Recalling that Costa Rica's coffee is famous, Soyer invited Gustavo Campos Fallas to the Coffee Fair planned to be organized by IZFAS on May 11-14, 2023.

## IZSU Signed Giant Projects in 2022

IZSU, continuing its efforts to make Izmir a disaster-resilient city and for a swimmable gulf, has taken important steps to carry the city's infrastructure into the future with the historic projects initiated and completed in 2022. IZSU, which invested approximately 3 billion, prevented floods caused by rainfall with activities at 200 locations. In line with the goal of swimmable gulf and solving the odor problem, revision works for the Cigli Wastewater Treatment Plant has started. 800 km of drinking water network, 90 km of storm water canals and 135 boreholes were drilled, and 352.5 million m3 of water was purified at treatment plants in Izmir within a year.



## Metropolitan Municipality Opened its Doors to the Homeless



Izmir Metropolitan Municipality continued to extend its embrace to citizens who cannot find shelter during the cold days. Izmir Metropolitan Municipality's Muyesser Turfan Temporary Guesthouse is open 24 hours a day and as the temperatures dropped, the number of homeless people knocking on the doors of the guesthouse has reached 50. The Metropolitan Municipality has taken the necessary measures to meet the increasing demand at the guesthouse in Ornekkoy by increasing the number of staff and beds. In addition, the Metropolitan Municipality rented a hotel in the Basmane region to meet the need during the intense winter periods and provided accommodation for 51 homeless people in this region.

## Hello Cigli Tram

IMM continues its rail system investments without slowing down. The first test drive of the 11-kilometer Cigli Tram, whose foundation was laid in 2021, was carried out. The tram was welcomed with interest by Cigli residents. President Tunc Soyer was among the first passengers of the tram. Stating that they will continue their rail system investments in line with the goal of 'weaving the city with iron nets', Mayor Soyer said, "It is a very exciting day. Let Cigli Tram be our New Year's gift to the people of Izmir." The test run started with the presentation of Mehmet Ergenekon, Head of IMM Rail Systems Department. The journey had started in Karsiyaka and ended in Izmir Atatürk Organized Industrial Zone.



## First Project Proposed to the World in the Field of Intelligent Notification System



Smart city projects prepared by the Metropolitan Municipality continue to attract global attention. The Smart Alert System, the first of its kind in Türkiye, was the first project to be proposed worldwide this year as part of the Digital Impact Alliance study conducted by the UN Foundation. The Smart Alert System, supported by artificial intelligence, was introduced as an exemplary project to the world under the title "The Use of Digital Algorithms in Public Services". With the Smart Alert System, 62% of forest areas can be kept under control and fires can be intervened in the initial stage with image processing technology working with a total of 72 cameras on 18 towers.

## First School for Karabağlar from IMM

The foundation stone of Orhan Kemal Primary School to be built by Izmir Metropolitan Municipality in Karabağlar Abdi İpekçi Neighborhood was laid by Kemal Kilicdaroglu, Chairman of the Republican People's Party. "We will continue to embrace the people and bring peace to the people," said Kemal Kilicdaroglu. President Soyer stated, "The ordeal inflicted on our children will come to an end." The school will be the first school to be realized with the means of Izmir Metropolitan Municipality and will eliminate the difficulty of children living in the region who had to walk long distances through mountainous terrain to receive education.



## Honor Award to Soyer from TURFAD



Soyer received an honorary award from TURFAD at this year's "People Should be Commemorated While They Live" ceremony. The ceremony held at Selahattin Akcicek Cultural Center with the support of Konak Municipality was attended by Izmir Governor Yavuz Selim Kosger, IMM Mayor Tunc Soyer, Konak Mayor Abdul Batur, TFF President Mehmet Buyukeksi, Izmir Chief Public Prosecutor Mustafa Ozturk, Izmir Provincial Police Chief Mehmet Sahne, Turkish Football Men's Association President Levent Erdogan, Izmir Provincial Director of Youth and Sports Murat Eskici, TURFAD President Levent Erdogan and Turkish Football Men's Association Izmir Branch President Bahri Vreskala.

## 100 Artists in the 100th Year of the Republic

IMM is hosting an exhibition of 100 artists for the 100th anniversary of the founding of the Republic of Türkiye. The exhibition "Faces of the Hundred" at Konak Metro Art Gallery brings together the residents of Izmir with the works of 50 female and 50 male artists from different cities of Türkiye. IMM is hosting the "Faces of the Hundred" exhibition in cooperation with the International Union of Artists as we enter the 100th anniversary of the Republic. The exhibition featuring the works of 50 female and 50 male artists from different cities of Türkiye in the fields of painting, sculpture, printmaking, ceramics and photography was unveiled at Konak Metro Art Gallery.



## Something Will Change Everything Will Change



IMM Mayor Tunc Soyer celebrated the New Year of the municipality staff on December 30. Saying that they have created an Izmir that is exemplary for Türkiye, Soyer addressed the people of Izmir on the evening of December 31st: "Today we are entering a brand new year. You will see that it will be a magnificent year. Today is also the beginning of the second century of the republic founded by Mustafa Kemal Atatürk 100 years ago. As it was 100 years ago, you will see that we will spend this year with great holidays and joys. We will hug each other tightly yet again. Our dreams will come true. Make no mistake, something will change, everything will change. Dear Izmir, dear people of Izmir, live long," he said.

## Insistence on Ecological Transportation Despite the Economic Crisis

Continuing to work in line with Tunc Soyer's principle of environmentally friendly transportation, Izmir Metropolitan Municipality has added 50 more electric vehicles to its fleet despite the economic crisis. 35 of these vehicles will be used in municipal services and thus, IMM's number of electric vehicles increased to 124. Vehicles with 80 KW electric motors with a CO<sub>2</sub> emission value of 0 can travel 120 kilometers with a 1-hour charge and 395 kilometers with a full charge. The vehicles save power in the city or in slow-moving traffic. ESHOT General Directorate has also established the first electric vehicle fleet in public transportation in Türkiye with 20 electric buses.



## Gunestekin's "Infidel Quarter" Exhibition Has Opened Its Doors



IMM unveiled the exhibition "Infidel Quarter" in which master artist Ahmet Gunestekin brought together all the traces of the exchange and migration process with his art. The exhibition focuses on how discriminatory practices, as in the population exchange and all the mass displacements that followed, became more visible with the international waves of refugees and migrants. CHP President Kemal Kilicdaroglu and IMM Mayor Tunc Soyer visited the exhibition, which broke visitor records. The exhibition will be shown until March 5, 2023 between 09.00-17.30 on weekdays and 10.00-17.00 on weekends.

## Touching the Heart of Foca

IMM continues to improve the quality of life in the districts. The coastline in Buyukdeniz Neighborhood of Foca, one of the most popular tourism district of Izmir, has been completely renovated. An area of 14 thousand square meters was arranged with the investment costing 4 million 500 thousand TL. The materials used in the works, where approximately 1 kilometer of vehicle and bicycle path, green area line and comfortable walking paths were provided, were selected in accordance with the historical and cultural heritage of the area. The materials used in the works, where approximately 1 kilometer of vehicle and bicycle path, green area line and comfortable walking paths were provided, were selected in accordance with the historical texture of Foca. After the lighting system on the beach was renewed with modern poles, the heart of Foca gained a brand new look.



## Revolutionary Steps from IZTARIM



Important steps were taken in 2022 within the scope of Izmir Agriculture strategy created by Izmir Metropolitan Mayor Tunc Soyer in line with his vision of "Another Agriculture is Possible" to fight against drought and poverty. The Metropolitan Municipality, which purchased more than 208 million liras from producer cooperatives this year, also processed meat, milk and herbal products into high value-added products with the Mera Izmir project. All of the milk, meat and herbal products purchased from producers were processed by IzTarim Inc. and transformed into a large number of packaged products and offered for sale under the brand of Izmir.

## Award to Izmir Agriculture Development Center



The "Izmir Agriculture Development Center" established by IMM to guide agricultural activities in the city, was granted the award of SasalıBiolab. IMM received the "Sustainable Practices and Projects in Landscape Design Realized by the Public Sector Award" at the National Landscape Architecture Awards organized annually by the Chamber of Landscape Architects affiliated to UCTEA. The award was given for its design as a natural structure based on ecological protection, its observance of the natural and cultural values of the region, the use of local plant species suitable for the flora of the region, and the use of nature-based solutions for public use.

## IMM Invested Over 10 Billion Liras in One Year

IMM undertook important projects in 2022 despite the economic crisis in the country. Hundreds of projects ranging from infrastructure, preservation of history and urban transformation to environmental facilities were implemented to increase prosperity and ensure fair distribution of income in the city. The trial runs of the Cigli Tramway and the construction of the Buca Metro began. Narlidere Metro has reached its final stage. International credit rating agency Fitch Ratings reaffirmed IMM's AAA national rating, the highest investment grade rating, in 2022. With the investments of ESHOT, IZSU and its subsidiaries, the 2022 investment amount exceeded 10 billion 500 million liras.



## Romani Gathering in Izmir



Republican People's Party (CHP) Chairman Kemal Kilicdaroglu met with citizens at the Roma Gathering hosted by Izmir Metropolitan Municipality and organized by the CHP Deputy Chairmanship in charge of Social Policies. About 600 representatives from different regions of the country attended the meeting at the Ahmed Adnan Saygun Art Center. Speaking at the Roma Gathering, CHP Chairman Kemal Kilicdaroglu said, "You are a group that the society does not see. You are millions. This brother of yours has made you visible. Never get demoralized. We will deliver your rights to the fullest."



### Türkiye's first and only Youth Municipality to be established in Izmir



Mayor of Izmir Metropolitan Municipality Tunc Soyer hosted the program "Izmir of Young People: Today's Stakeholders" program and explained his youth vision and projects.

### Soyer: "We are shaping the Türkiye of tomorrow in urban transformation"



Real Estate, Construction and Urban Transformation Fair "Rescon Expo" has started in Fair Izmir. Referring to the urban transformation projects they are carrying out in Izmir at the opening ceremony, Mayor Soyer said, "As in all the projects we carry out, our focus in urban transformation is not only on Izmir. We act with a vision that inspires Türkiye of tomorrow and the world's future."

### Izmir sprinted through the longest night



Izmir Metropolitan Municipality organized a run on the longest night of the year. One thousand 500 people participated in the run. On the 7.5 kilometer course, many bicycle riders joined the run with their illuminated ornaments and lanterns.

### Culverts expanded against flood risk



IMM General Directorate of IZSU continues to work at the points where flooding has occurred in case of excessive rainfall. Renovation works carried out in the areas of Balçova that were previously identified to have experienced heavy rain to prevent possible floods. Renovation works carried out in the areas of Balçova that were previously identified to have experienced heavy rain to prevent possible floods.

### Konak observation terrace dazzles the eye with its design



Izmir Metropolitan Municipality, which realizes the designs that will ensure more effective, efficient and functional use of the city coasts with the "Izmir Sea Coastal Design" project in order to strengthen the relationship of Izmir residents with the sea, made the observation terrace near Konak Ferry Pier available to the city.

### "IZSU In Schools" project meets with children



Izmir Metropolitan Municipality IZSU General Directorate launched the IZSU in Schools project to raise children's awareness about water and ensure the conscious use of water.

### Izmir's stars will be showered with medals in 2022



Izmir Metropolitan Municipality Youth and Sports Club athletes won 347 medals, 43 of which were international, as they left their mark on 2022. Kerem Kamal became World Champion in wrestling and Onur Tastan became European Champion in judo.

### 32 thousand stray dogs were microchipped in Izmir



Izmir Metropolitan Municipality has microchipped 32 thousand dogs in the last 5 years, continuing its efforts to register dogs living on the streets.

### Afforestation works has started with "One Sapling One World"



Izmir Metropolitan Municipality's "Fidan Bir Dünya" (One Sapling, One World) campaign, which was launched with the vision of Izmir resilient to climate crisis and starts again this year with the arrival of spring time. With the saplings purchased from the website "birfidanbirdunya.org", thousands of saplings will be planted in many different parts of Izmir.

### Start-Up era for Shepherds begins in Izmir



Within the scope of the Mera Izmir project carried out by Izmir Metropolitan Municipality, "start-up" support for shepherds begins. With the project, shepherds will be provided with local breed animals and construction materials to build barns.

IZMİR  
METROPOLITAN  
MUNICIPALITY



emission reduction plans for cities. We are all really in this together, and that means we need to find a way to bring about change as a truly collective process."

## Izmir in Brussels for Climate Change Adaptation Mission Launch

IZENERGY applied to the Climate Change Adaptation Mission on behalf of Izmir Metropolitan Municipality and was entitled to be one of the first cities to sign the agreement.

An event for the signatories of the 'Climate Change Adaptation Mission' contract and Mission Friends was organized by the European Commission in Brussels on January 26, 2023.

Izmir's Climate Friendly vision was represented by IZENERGY Inc. at the event.

- Introducing the Mission Implementation Platform to contract signatories,
- Ensuring information flow between signatories and Mission Board members,
- Inauguration of the "Community of Practice",
- Addressing regional/local authority contributions to Convention submissions and articulating challenges faced at the local and regional level (financing, public participation, access to data, etc.).

## IZENERGY held its 2nd Meeting with Mission Consultants

Mission Advisors had been appointed to Mission Cities to provide international support on the journey towards achieving climate neutrality. A productive meeting was held with Mr. Ed Synnott, Izmir's Mission Advisor. During the meeting, the details of the platform that Izmir is preparing to coordinate its Mission work were shared. In addition, the importance that Izmir attaches to national coordination within the scope of the Mission was highlighted. Ed Synnott's views on the preparation of the Action Plan to be prepared within the scope of the Climate City Convention and related activities were received.

takes to ignite climate neutral transformation. Ed Synnott's note on the climate transformation of cities is as follows:



Izmir Mission City Advisor - Ed Synnott

"Gone are the days of experts sitting in dark rooms poring over complex

## Ed Synnott, Izmir Mission City Advisor:

Ed Synnott has worked in local government for over 30 years in the UK, EU and Australia. Ed's past involvement in city-scale initiatives, whether on the strategy, innovation or energy and climate analysis side, means Ed is familiar with the challenges cities face and what it



Chairman of the Board of Directors of IZENERGY Inc. - A. Ercan Turkoglu - Brussels Izmir House - Isil Ergeç

The European Commission's Climate Neutral and Smart Cities Mission offers an important opportunity for cities to take a radical and innovative path. The Commission aims to accelerate the climate neutral transformation by identifying 112 pioneering cities that aim to be climate neutral by 2030. Mission cities are expected to build an urban alliance towards climate neutrality and become key experience centers for this transformation. The Commission will continue to support Mission cities financially, technically and politically in this process. Since its selection as a pioneer city, Izmir has been working on its climate neutral journey with great dedication.

## IZENERGY Continues to Bring Izmir's Stakeholders Together for "Climate Neutrality"

In order to realize this radical and innovative transformation in Izmir's climate neutral journey, IZENERJI continues to inform all stakeholders of the city and establish a dialogue for this transformation.

### Mission Briefing Meeting with Media Organizations

On December 1st, the goals, scope, and opportunities that the Climate Neutral and Smart Cities Mission will bring to our city were shared with media organizations.

Media organizations were called upon to closely follow every step of this climate neutral transformation.

At the meeting organized at Izmir Journalists' Association, press representatives from many local and national media outlets stated that they would be pleased to play a role in making this transformation visible. They shared their suggestions to contribute to the city's climate transformation with article series and interviews.



### Mission Briefing Meeting with AYDEM Energy in the Context of Clean Energy Solutions

On December 2nd, a Mission information meeting was held with the electricity distribution company Aydem Energy in line with the goals of the Climate Neutral and Smart Cities Mission.

Aydem Energy stated that they are ready to provide the necessary support in line with this Mission, which will create a vision that will enable a greener future for Izmir. Ozgur Unsalan, Sales Manager for Large Customers from Aydem, stated that Aydem Energy has taken pioneering initiatives in energy transformation projects in line with the carbon tax and climate target and that they will be very pleased to take the lead in the Mission work in this context.

## Climate Neutral and Smart Cities Mission Briefing Meeting was held for Aegean Exporters' Associations



BEST For Energy Team Leader - Ekin TASKIN - General Manager of IZENERJİ Inc. - A. Celal Ergin  
Chairman of the Board of Directors of IZENERGY Inc. - A. Ercan Turkoglu - Aegean Exporters' Associations Coord. President - Jak Eskinazi (left to right)

Izmir's Climate Neutral Journey was presented at a meeting hosted by the Aegean Exporters' Associations, one of the most important representatives of the sector, which includes 12 Exporters' Associations. On Thursday, January 12, a well-attended meeting was organized with representatives of the Aegean Exporters' Associations and representatives from the relevant departments of Izmir Metropolitan Municipality, as well as businesspeople, academics and entrepreneurs from many different sectors. The opening speeches were delivered by Jak Eskinazi, Coordinator President of the Aegean Exporters' Associations and Ali Ercan Turkoglu, Chairman of the Board of Directors of IZENERGY Inc.

Jak Eskinazi, Coordinator President of the Aegean Exporters' Associations, stated that many sectors have started to work towards the net zero target, especially with the textile tax, and that their associations have carried out many important studies to raise awareness in the sector on Sustainability and Climate. He stated that the private sector and industry play a key role in climate targets and that they will be pleased to lead steps towards this.

Ali Ercan Turkoglu, Chairman of the Board of Directors of IZENERGY Inc., emphasized Izmir's current capacity and potential for climate action. He highlighted that there is a significant potential for net zero transformation in Izmir and that.

He noted that they aim to coordinate this potential within the scope of their mission work. It was stated that Mission studies are an innovative solution both for the development of business models and for future generations.

Following the Climate Neutral and Smart Cities Mission introduction, BEST For Energy Team Leader Ekin Taskin stated that the difference of the Mission from the steps taken so far is its approach covering the whole city. It was conveyed that very important initiatives will be taken in the near future to ensure energy transformation in Izmir's climate neutrality target, and that Izmir is ready for this transformation with its experiences so far.



## 2nd Bremen-Izmir Economic Forum Businesspeople Meeting



The 2nd Bremen-Izmir Economic Forum Businesspeople Meeting was organized in partnership with the World City Izmir Association (DIDER) and Izmir Metropolitan Municipality to mark the anniversary of Bremen and Izmir becoming sister cities.

Ali Ercan Turkoglu, Chairman of the Board of Directors of IZENERGY, took his place in the delegation accompanying Mr. Tunc Soyer, Mayor of Izmir Metropolitan Municipality, within the scope of the Germany program. In the forum where renewable energy, start-ups, sustainable agriculture, and food were discussed, steps were taken towards cooperation.



## Social Security Applications Training



at Marmara University Faculty of Law and former Deputy Director of Istanbul SGK Mr. Murat OZDAMAR's knowledge and professional experience. The first stage of the training was given on 21.12.2022 and the second stage on 17.01.2023. As a result of the training, our colleagues, who had the opportunity to refresh their existing knowledge and learn the practices updated as of 2023, thank our valuable company managers for their support.

Our colleagues working in the HR Department of our company Human Resources Directorate and Security Directorate Human Resources unit participated in the "Social Security Practices in the Light of Methods and Circulars" training organized by Yaklasim Academy in Istanbul. The training was carried out in the light of Prof. Dr. Nursen CANIKOGLU, Lecturer



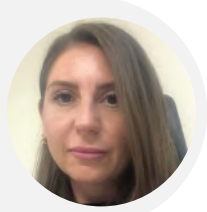
## IZENERGY Inc. Employees



**Gulistan GUMUS**

For 15 months, I have been working as a Patient Elderly Care Worker at Izmir Metropolitan Municipality Nursing Home Branch Directorate. I am very happy to be a member of the IZENERGY family. I would like to thank Tunc Soyer, IZENERGY Management and everyone who contributed.

I completed my bachelor's degree in international relations at EMU, my master's degree at IKCU and I am currently pursuing my PhD. I work in the project preparation team at the EU Grant Projects Branch Directorate to ensure the national and international representation of the projects. I am very happy to serve within IMM.



**Elif CANTURK**



**Munise DEMIRER**

In 2019, I joined the IZENERGY INC. family. I am a graduate of Social Sciences. I am a beautiful part of our mayor Tunc Soyer's project of women drivers for Izmir. I am a driver for the Mediterranean Academy Branch Directorate. I am very happy to represent the diversity of women in traffic.

Born in 1979 in Izmir, I am married and have one child. I started my career as a mining engineer in underground and aboveground companies and continued to work as an occupational safety specialist after 2014. I am proud and happy to join and work at IZENERGY Inc. since 2020.



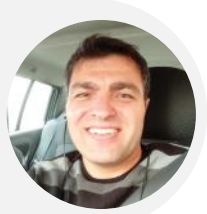
**Murat ATAOL**



**Damla KAVRUK NAMDAR**

After graduating from Pamukkale University Political Science and Public Administration in 2014, I continued my education life with a master's degree at IKCU. After my graduation, after my private sector experience, I started working as a Personnel Supervisor at IZENERGY Inc. Human Resources Unit about 9 months ago.

Since 2011, I have been working as a driver in the Administrative Affairs Branch Directorate of IZENERGY Inc. "The one who loves his homeland the most is the one who does his duty the best." said our Great Leader. I am here in the Izmir Metropolitan Municipality family to do the best together.



**Mesut KARABULUT**



**Secil KAPLAN**

2 years ago, I joined the IZENERGY family. I work at the Public Relations Branch Directorate, Presidential Communication Unit. I feel very lucky and happy to be a part of IZENERGY Inc., which works with the power of unity, solidarity, and solution.

Hello, I was born in Izmir in 1993. I graduated from Dokuz Eylul University, Department of Labor Economics and Industrial Relations. I continued my education life by studying at Atatürk University, Department of Child Development. About 8 months ago, I started to work as a Personnel Supervisor in IZENERGY Inc. HR Department.



**Aysegül GÜDER CENGİZ**



**Vedat CETINKAYA**

In 2007, I graduated from Anadolu University, Faculty of Business Administration. I am currently a 3rd year student at Anadolu University, Department of Sociology. Since 2020, I have been working for Izmir Metropolitan Municipality and IZENERGY Inc. I am very happy to be a staff member.

I graduated from CBU Laboratory Technologies. In 2020, I started working in the Soil and Leaf Analysis Laboratory under the Department of Agricultural Projects. We provide on-site services to rural producers within the borders of Izmir by performing soil analysis. Many thanks to IMM and IZENERGY family for providing us with this service.



**Umit SADIC**



**Aysun GULSEVEN**

Since 2020, I have been working as a cleaning staff in the Administrative Affairs Branch Directorate of IZENERGY Inc. I do my best to ensure that people work in a clean and hygienic environment. I am proud and happy to be in Izmir Metropolitan Municipality.

Since 2015, I have been working for IZENERGY Inc. I am a member of the market stand installation team within the Department of Agricultural Services. It is a very nice feeling to have a contribution share in the delivery of healthy products from producers to consumers. I would like to thank those who contributed.



**Gokhan TOPCU**



TRAMVAY

HYUNDAI  
Rotem

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İZMİR  
METROPOLİTAN  
BELEDİYESİ

TUNÇ SOYER  
İZMİR METROPOLİTAN BELEDİYESİ BAŞKANI

**TRAMVAY RAHATLIĞI**  
**ARTIK ÇİĞLİ'DE!**  
**HAYIRLI, UĞURLU OLSUN!**



İZMİR METROPOLİTAN MUNICIPALITY

“

”

*The true prosperity is the abundance of this land.*

**Tunc SOYER**

Mayor of Izmir Metropolitan Municipality

 Bergama

Canberk GUNAY



[www.izmir.bel.tr](http://www.izmir.bel.tr)