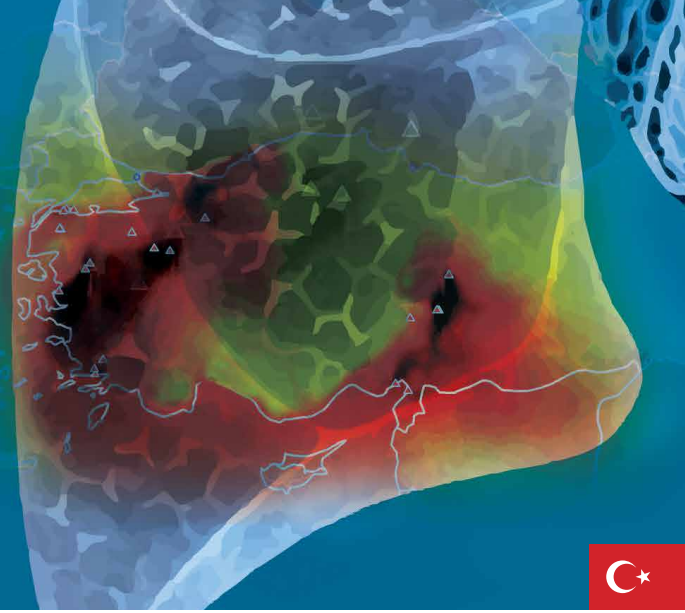


Chronic coal pollution Turkey: Muğla



1. Turkey has a persistent chronic coal pollution problem, costing money and lives

At the end of 2021, Turkey entered a new era on climate and energy, with the country's ratification of the Paris Climate Agreement and the setting of a 2053 net zero carbon target. However, Turkey has not yet set a date to phase out coal, and is still pushing ahead with plans to double its current coal power capacity¹. Recent studies show a 2030 phase out is feasible and would lead to a reduction of carbon emissions from the power sector by 82.8%².

Coal power generation fuels climate change and harms health, through the release of tons of CO₂ and hazardous air pollutants. HEAL's Chronic Coal Pollution Turkey report³ in 2019 quantified for the first time the health burden of Turkey's 28 large operating coal power plants. Unlike in many other countries, in

Turkey, data on emissions to soil, water and air at facility level is not publicly available. HEAL's chronic coal pollution analysis aims to respond to this gap by providing for estimates on coal plant stack emissions and related health impacts and cost (for details on the methodology see HEAL's website⁴).

With this briefing, HEAL provides evidence on the significant health toll of chronic coal pollution in Muğla, across the lifetime of the three plants currently in operation. For Turkey as a whole, the country's chronic coal addiction has caused 196,091 cases of premature deaths since 1965 (the year the oldest still active coal plant was commissioned) with health costs of up to 320 billion EUR, or 4.8 trillion Turkish Lira⁵.

¹ Representing the plants with the capacity over 50 MW, 74 units in 31 coal plants have a total capacity of 19.4 GW, while 34 new units in 20 coal plants are planned with a total capacity of 14.5 GW.

² Europe Beyond Coal et al. (November 2021). First Step in the Pathway to a Carbon Neutral Turkey: Coal Phase out 2030 <https://caneurope.org/new-report-the-roadmap-for-paris-compatible-turkish-coal-exit/>

³ Gacal, F., Gierens, R., Jensen, G., Myllyvirta, L., Stauffer, A., Zander E., (January 2021). Chronic coal pollution Turkey, the health burden caused by coal power in Turkey and how to stop the coal addiction. Health and Environment Alliance. https://www.env-health.org/wp-content/uploads/2021/02/Chronic-Coal-Pollution-Turkey_web.pdf

⁴ Methodology can be found on HEAL's website

⁵ December 2021 monthly rate of 1 EUR = 15 TRY

2. The cumulative health burden from coal power in Muğla

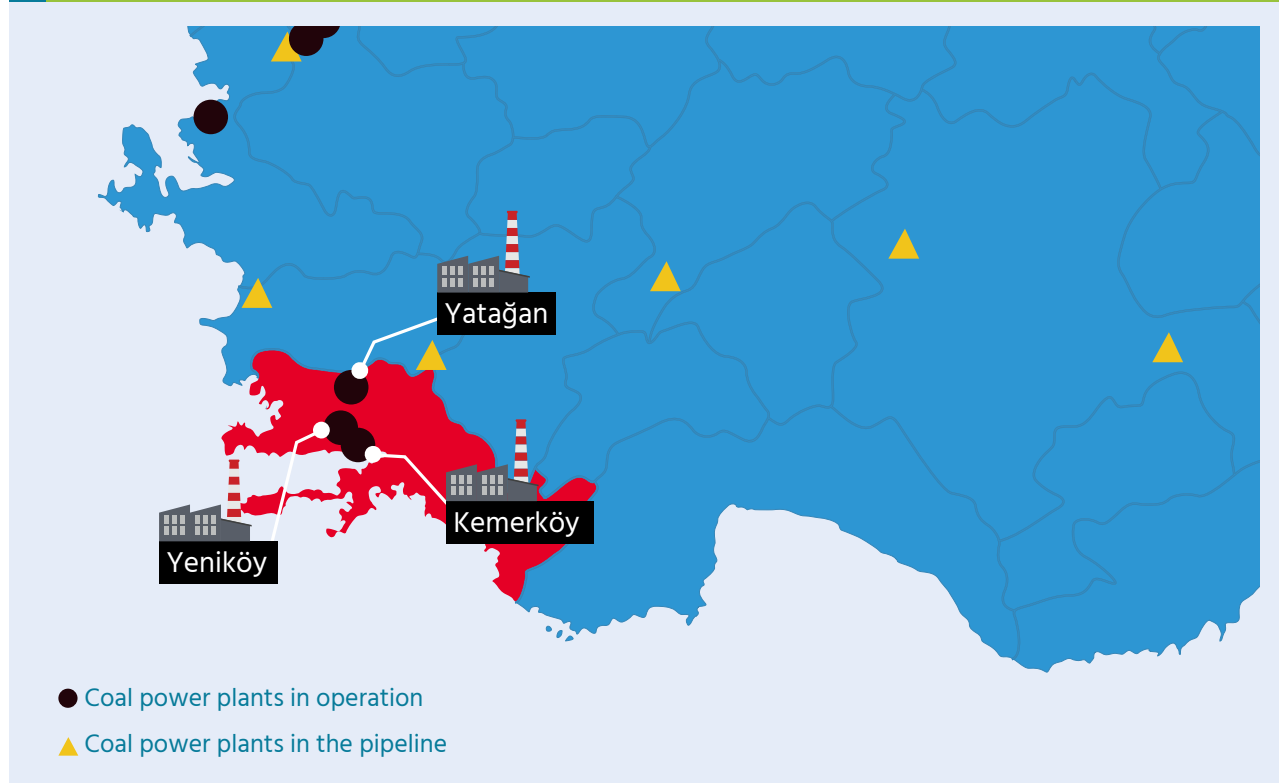
Muğla city is in south-west Turkey on the Aegean coast. It is the administrative capital of a province of the same name, with a population of around 1 million people which is also home to internationally well-known tourist resorts, and an important agricultural hub. The city and region were in international news in the summer of 2021, as temperatures reached up to 48°C, and more than 16,000 hectares were burnt in weeks-long wildfires. The wildfires started in different places, reaching the Kemerköy and Yeniköy coal power plants. Both plants paused operations for a few days, the fire entered the Kemerköy plant but the critical infrastructure was not affected⁶.

There are three operating coal power plants in the region: Yatağan (in operation since 1982, with a capacity of 630 MW, and lignite combustion),

Yeniköy (in operation since 1986, with a capacity of 420 MW, and lignite combustion) and Kemerköy (in operation since 1993, with a capacity of 630 MW, and lignite combustion).

As of November 2021, there are no new coal power plants in the pipeline, the previous plants are either cancelled or shelved. However, the three coal-fired power plants nearing their retirement age were privatised in 2014 and are being retrofitted to meet environmental regulations. Moreover, there are plans to expand the lignite reserves near the Kemerköy - Yeniköy plants. In 2014, the total permitted area for lignite mining reached 21,000 hectares in Yatağan and 23,000 hectares in Milas, of which 47.3% are forest⁷.

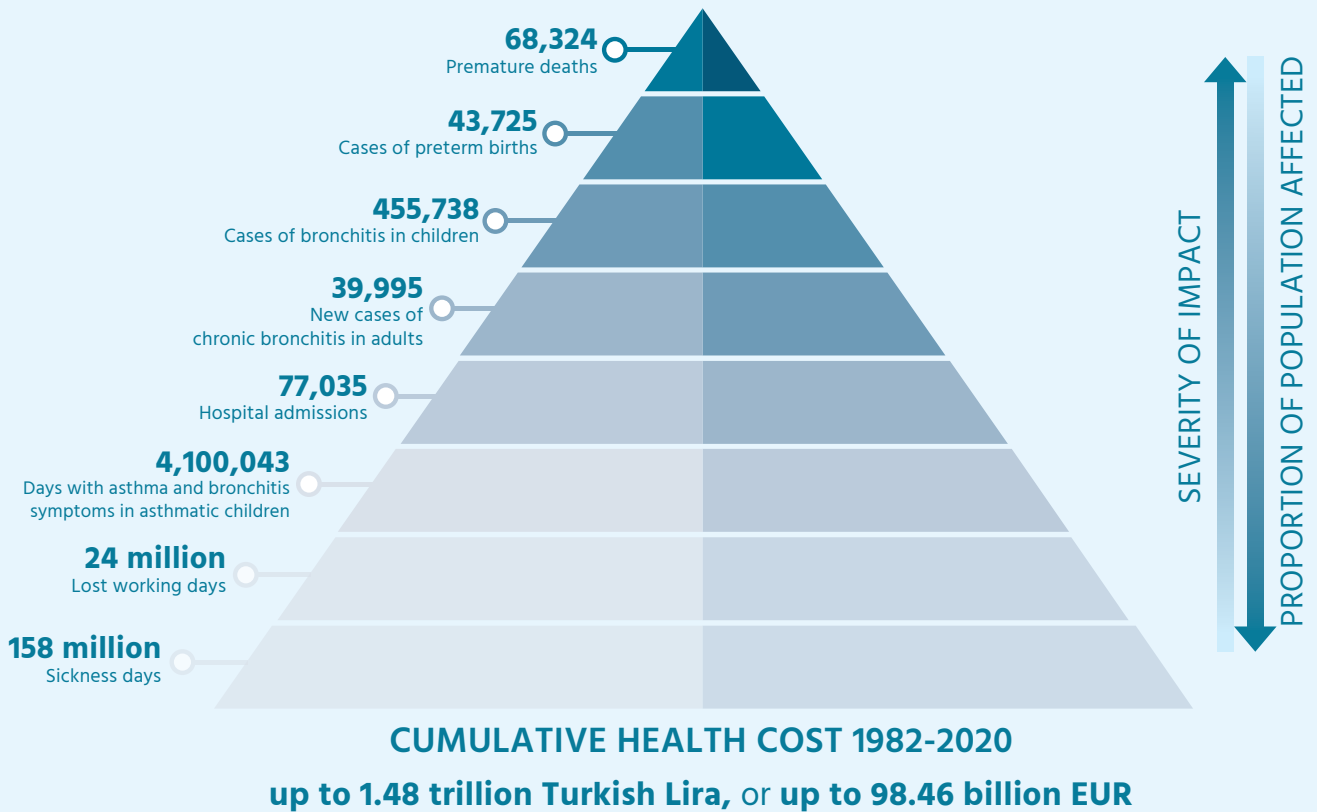
Muğla - coal power plants in operation and in the pipeline



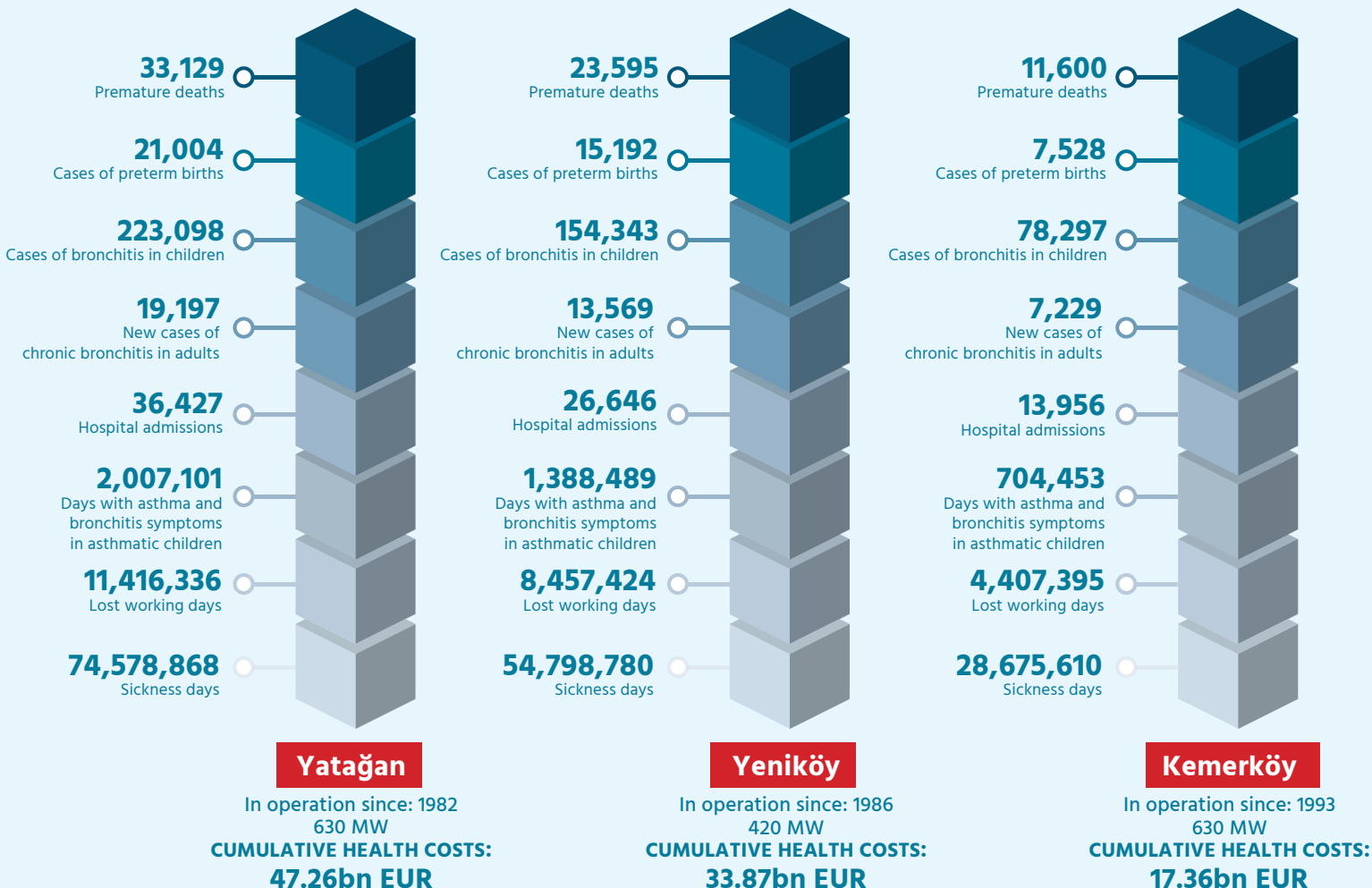
⁶ The Guardian. Published on 4th August 2021. Turkish power station and nearby areas evacuated as wildfire spreads. <https://www.theguardian.com/world/2021/aug/04/turkish-town-evacuated-as-wildfire-reaches-power-station>

⁷ Gümüşel, D., Gündüzyeli E. (2018). The Real Cost of Coal Muğla. Climate Action Network Europe (CAN-Europe). https://caneurope.org/content/uploads/2019/08/The-Real-Costs-of-Coal-Mugla_Full-Report_Final.pdf

The health burden from the three existing coal plants in Muğla has added up to:



The economic cost of cumulative health impacts of three operating plants across the region (since first in 1982 to end 2020) are up to 1.48 trillion Turkish Lira, or up to 98.46 billion EUR.⁸



⁸ Health and Environment Alliance. (January 2021). Chronic coal pollution Turkey. The health burden caused by coal power in Turkey and how to stop the coal addiction. https://www.env-health.org/wp-content/uploads/2021/02/Chronic-Coal-Pollution-Turkey_web.pdf

HEAL's analysis clearly shows that most of the cumulative health cost comes from the oldest coal power plants (as fuel context and combustion technology are similar in three plants) and the coal phase out should be a priority of the region. Moreover, as sulfur oxide emission reduction control systems were only installed after 10-16 years of operation (in Yatağan at 2008, in Yeniköy at 2007 and in Kemerköy between 2003-2005), untreated sulfur oxides emissions which are particularly harmful to the respiratory system⁹ were increasing the cumulative health cost which represents almost 1/3 of cumulative health cost from air pollution of the coal power plants. A study from 2019, using satellite images, confirms that the area is a SO₂ hotspot, as the most SO₂ dense area in Turkey and 14th largest globally.

In 2020, all three plants were inspected for their air pollution and waste control systems by the ministry. During this inspection it was revealed that Kemerköy and Yeniköy fail to meet the national SO₂ limits with their current reduction systems, and Yatağan had not rehabilitated its landfill and continues to use the wild landfill method^{10, 11}. However, retrofit contracts for Kemerköy and Yeniköy plants and an academic report listing the precautions in Yatağan are taken as guarantees, none of these plants are suspended and given/extended environmental permits ruling out several studies documenting environment and health harm.

⁹ Sulfur dioxide affects the respiratory system, particularly lung function, and can irritate the eyes. Sulfur dioxide irritates the respiratory tract and increases the risk of tract infections. It causes coughing, mucus secretion and aggravates conditions such as asthma and chronic bronchitis.

¹⁰ Çaltı, N., Bozoğlu, B., Aldırmaz, A. T., Deniz Atalar, G. (June 2021). Özelleştirilmiş Termik Santraller ve Çevre Mevzuatına Uyum Süreçleri Raporu (In Turkish). Climate Change Policy and Research Association (CCPRA). <https://www.iklimderneği.org/rapor/Ozelleştirilmiş-Termik-Santraller-ve-Çevre-Mevzuatına-Uyum-Süreçleri-Raporu/4>

¹¹ Özlüer, F. (June 2021). Özelleştirilen Termik Santraller, Çevre Mevzuatına Uyum ve Haklar (In Turkish). Haklar ve Araştırmalar Derneği <https://haklarvearastirmalar.org/wp-content/uploads/2021/06/Rapor-II-2.pdf>

3. Health statements

The health impacts of coal-fired power plants in Muğla are known by the public. Particularly in Yatağan, as the plant is at a lower altitude of Yatağan town where 45.000 people live. Residents of Yatağan, Turgut and Yeşilbağcılar reiterate that asthma, bronchitis, goiter and COPD, as well as lung and throat cancer are widespread diseases in their villages.¹²

In 2000, a team of public health experts appointed by the Turkish Medical Association studied Yatağan, and found that respiratory disease hospitalisation rate in Yatağan was more than twice the rate in Muğla province center, where air quality was relatively better¹³. Health studies and testimonies from health experts provide an idea, as detailed health data, that would allow a comprehensive analysis, is not accessible. Here are their views:

“



“Muğla’s three power plants have been active since the 1980s, despite the complaints of the residents. There are efforts to destroy olive farms and forests for coal mining, local farmers had to leave their land and migrate, and this danger still exists. Villagers are not only losing their health by breathing the polluted air created by the power plants, but they are also fighting to keep their lands. Now that the Paris Agreement has been signed, it is time to shut down coal-fired power plants.”

Prof. Dr. Sebahat Genç, Pulmonologist, Muğla

Member of Turkish Thoracic Society Working Group on Environmental Problems and Lung Health

”

“



“Yatağan, Kemerköy and Yeniköy coal-fired power plants in Muğla have been causing diseases and even deaths for years. According to a Turkish Medical Association report published in 2000, the number of patients hospitalised with respiratory system complaints in Yatağan was two times that of Muğla, which has better air quality. Coal-fired power plants are undoubtedly the leading cause of this illness data. Turkey is one of the countries that is most affected by the climate crisis and we demand that these coal-fired power plants be shut down.”

Dr. Hakkı Turan, Family Physician, Muğla

”

¹² Gümüşel, D., Gündüzyeli E. (2018). The Real Cost of Coal Muğla. Climate Action Network Europe (CAN-Europe). https://caneurope.org/content/uploads/2019/08/The-Real-Costs-of-Coal-Mugla_Full-Report_Final.pdf

¹³ Civaner, M., Demiral Y., Ergör, A., Karababa, A. O., Uçku, R., Sarıkaya, Ö. (2000). Yatağan’da Hava Kirliliğinin Değerlendirmesi Raporu. Türk Tabipleri Birliği. <https://www.ttb.org.tr/eweb/yatagan/>

4. Recommendations

FOR POLICY-MAKERS



Set a date for phasing out the 3 existing plants, by 2030 at the latest and cancel environmental permits. Retrofitting operating plants and giving additional time by environmental permits would only lock in the coal-dependent future and magnify the damage on public health and economy.



Immediately cancel plans on expanding the lignite coal mines. Providing more fuels to operating plants will harm Turkey's 2053 net zero carbon target as well as would result in loss of biodiversity and carbon sink areas.



When setting the phase out date, carry out a health impact assessment to quantify the health cost, to inform decisions on how swift the phase out needs to happen. As a first step, open health statistics in Muğla, particularly in Yatağan, Milas and Ula, to the public for better understanding of the health burden.



Satellite images already confirm the high air pollution in the region. In order to understand the true health cost from coal power in Muğla, improve transparency and allow for scientific assessments by reporting emissions from the electricity sector in a transparent manner. This includes making data on emissions from large combustion plants, including coal power plants publicly available (and reporting data to E-PRTR).



Prepare for a Just Transition mechanism and plan in Muğla, to promote health and better jobs to thousands of people working in lignite coal mines, lignite and hard coal plants and to local communities.



Increase the capacity of health and medical organisations and individuals (such as patients) in Muğla to engage on environmental pollution and climate change through communication and by providing evidence. The Lancet Countdown's publications on climate change, the WHO special report to COP26¹⁴ and the WHO manifesto on a healthy recovery¹⁵ can serve as a guidance.



Highlight the true costs of coal power generation in economic and public health deliberations and decisions, and work towards increasing public understanding of how public health will benefit from reducing coal's unpaid health bill.

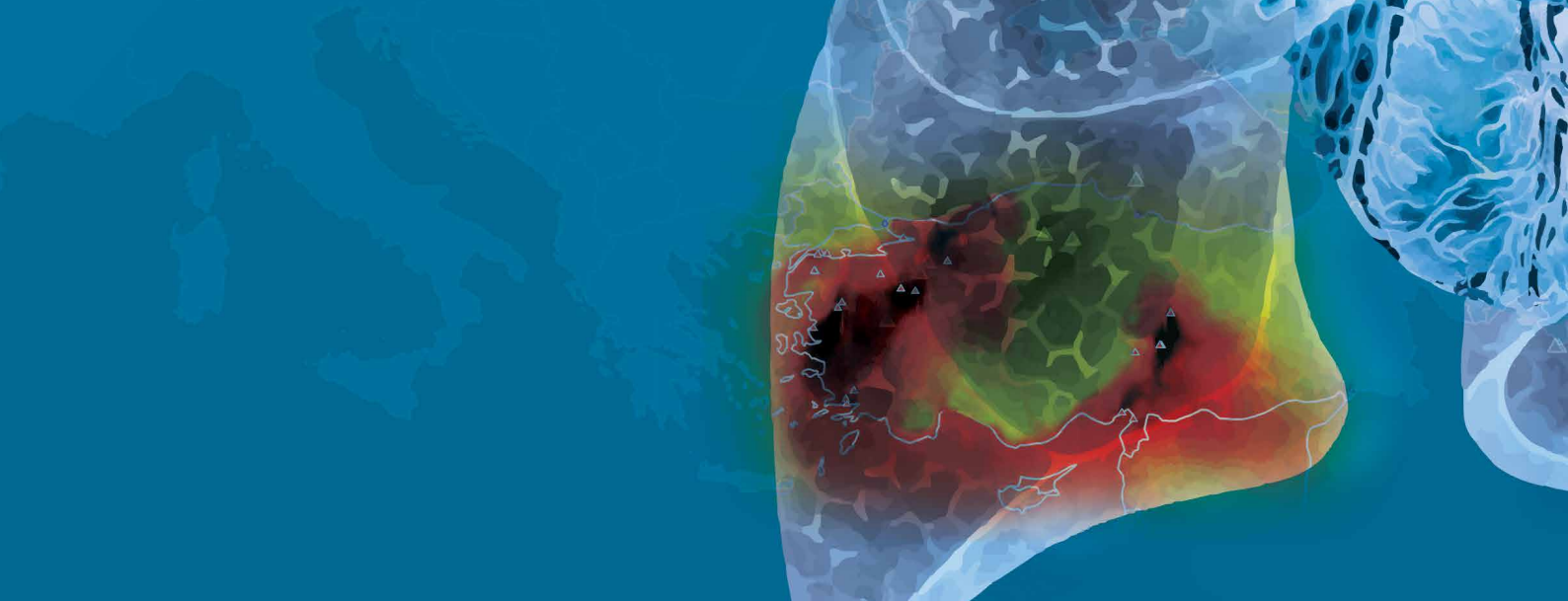


As Turkish Ministry of Health, participate in the development and implementation of clean air activities and plans, as well as energy and climate policies. Muğla has a clean air plan approved by Muğla Governorship and Muğla Municipality in 2016, where air pollution created by coal power plants was not considered.¹⁶ These plans should be updated for swifter and more ambitious clean air action, considering the latest scientific evidence and the fact that air pollution is now the biggest environmental health threat for Turkey, and the fact that Muğla is a pollution hot spot where both people and the economy suffer.

¹⁴ World Health Organization. (October 2021). COP26 Special Report on Climate Change and Health. <https://www.who.int/publications/i/item/cop26-special-report>

¹⁵ WHO Manifesto for a healthy recovery from COVID-19. Released in May 2020. <https://www.who.int/news-room/feature-stories/detail/who-manifesto-for-a-healthy-recovery-from-covid-19>

¹⁶ Muğla Provincial Directorate of Environment and Urbanization. (2016). Muğla Temiz Hava Eylem Planı (in Turkish). https://webdosya.csb.gov.tr/db/mugla/menu/temiz-hava-eylem-planı_20190517012419.pdf



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The Health and Environment Alliance (HEAL) is the leading non-profit organisation addressing how the environment affects human health in the European Union (EU) and beyond. HEAL works to shape laws and policies that promote planetary and human health and protect those most affected by pollution, and raise awareness on the benefits of environmental action for health. HEAL's over 90 member organisations include international, European, national and local groups of health professionals, not-for-profit health insurers, patients, citizens, women, youth, and environmental experts representing over 200 million people across the 53 countries of the WHO European Region. As an alliance, HEAL brings independent and expert evidence from the health community to EU and global decision-making processes to inspire disease prevention and to promote a toxic-free, low-carbon, fair and healthy future.

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For details on the methodology and plants see: env-health.org

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