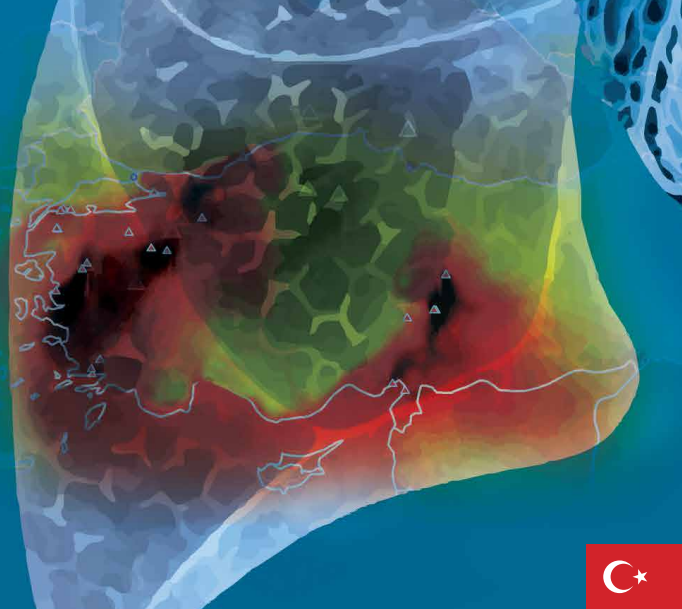


Chronic coal pollution Turkey: Çanakkale



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 Çanakkale across the lifetime of the five 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 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., Myllyvyrta, 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 Çanakkale

Çanakkale, in the west Marmara region of Turkey, is one of the provinces with the highest rural population in Turkey. Agriculture and forestry are the main economic activities in contrast to environmentally hazardous sectors such as coal power plants, iron, steel and cement industries, coal, gold and metal mining are still expanding. It has a growing population of 520,000 people, receives domestic migration.

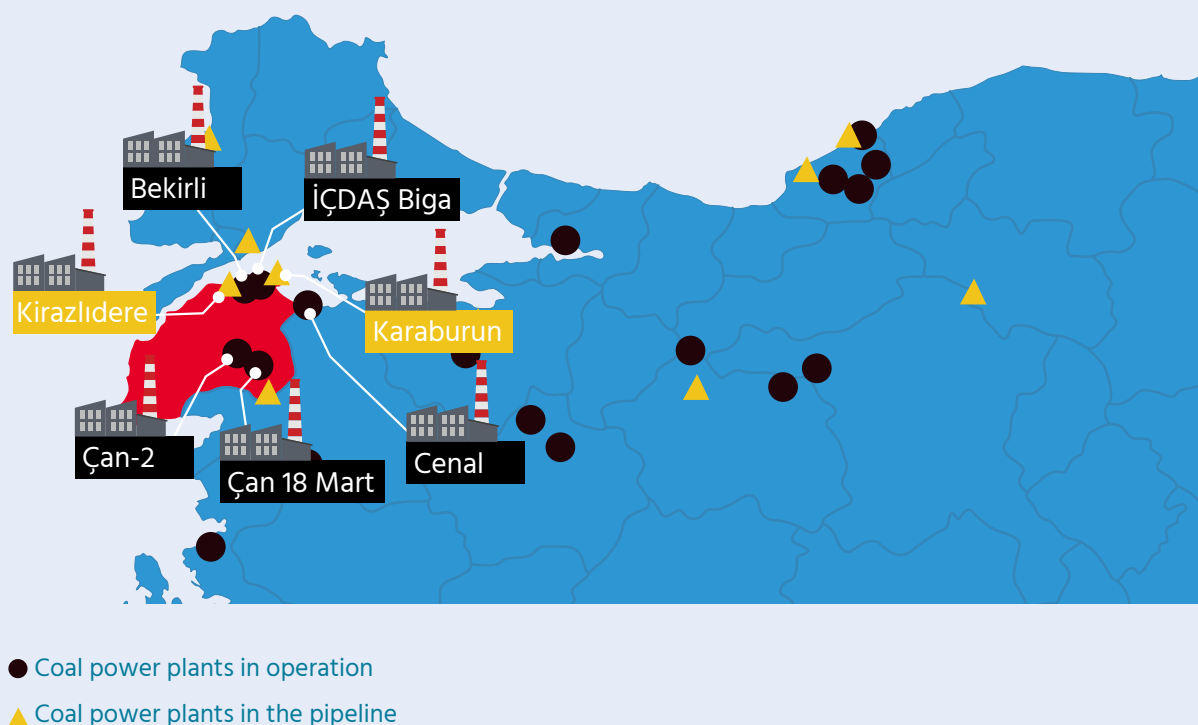
There are five operating coal power plants in the region: Çan 18 Mart (in operation since 2005, with a capacity of 320 MW, and lignite coal combustion), İÇDAŞ Biga (in operation since 2005, with a capacity of 405 MW, and hard coal combustion), Bekirli (in operation since 2011, with a capacity of 1,200 MW, and hard coal combustion), Cenal (in operation since 2017, with a capacity of 1,320 MW, and hard coal combustion) and Çan-2 (in operation since 2018, with a capacity of 330 MW, and lignite coal combustion).

In addition, two new coal plants are in the pipeline: Kirazlıdere (1,600 MW, hard coal combustion) and Karaburun (1,320 MW, hard coal combustion). There used to be more plants in the pipeline that were either cancelled or shelved in 2021.

Desulfurisation systems for Çan 18 Mart was installed in 2021. But the power plant started operation in 2005, meaning for the last 16 years untreated sulfur oxides emissions which are particularly harmful to the respiratory system were entering the ecosystem and harming thousands of people, resulting in 1,309 premature deaths already.

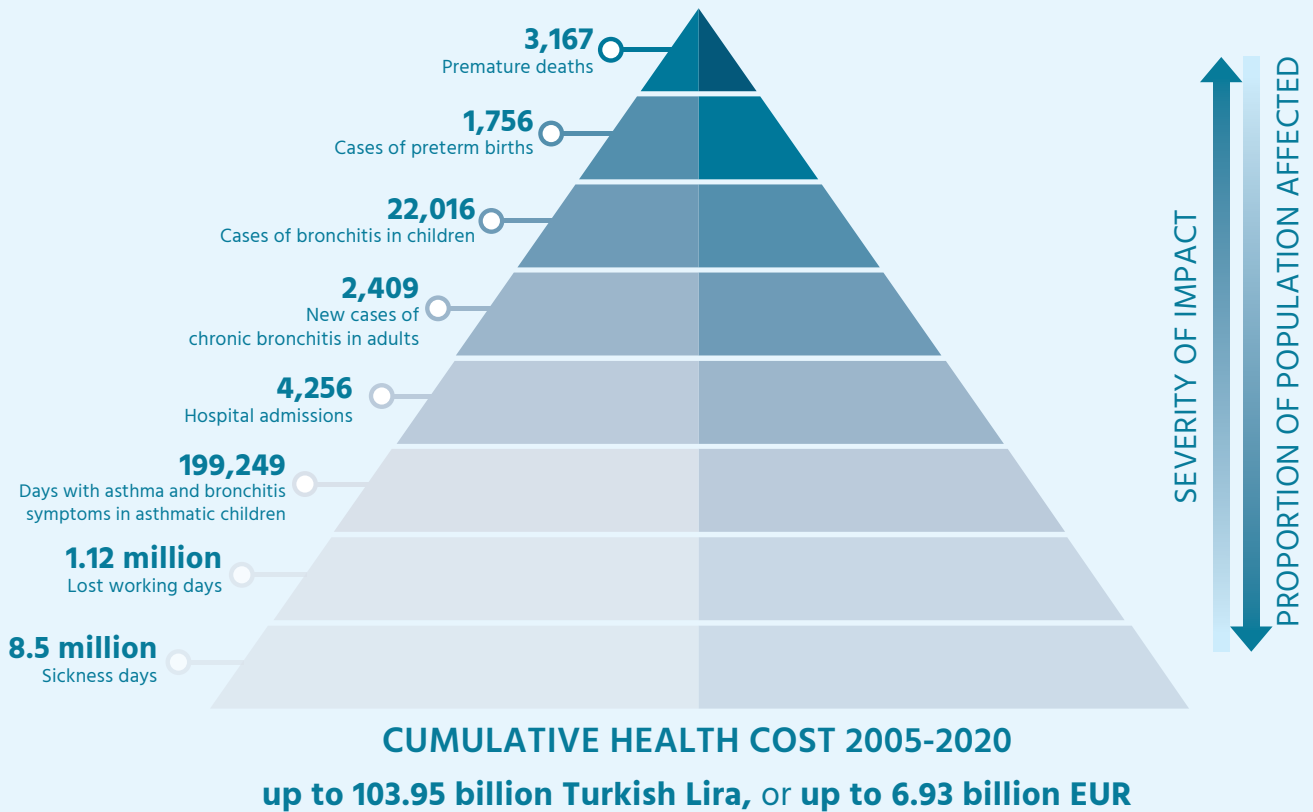
Besides these coal power plants, coal mined in the Çan district (where 18 Mart Çan and Çan-2 are located) is used by industrial facilities as well as sold for heating. Due to air pollution concerns in 2017, sale of mined lignite for heating purposes was banned by the clean air plan in 2017⁶.

Çanakkale - coal power plants in operation and in the pipeline

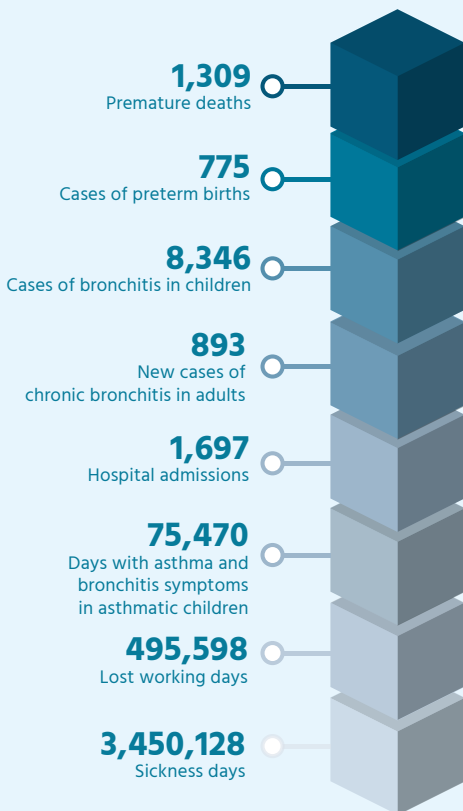


⁶ Gacal, F., Stauffer, A. (January, 2018). Coal Power Generation and Health in Three Regions of Turkey; Çanakkale, İzmir and Tekirdağ. Health and Environment Alliance. https://www.env-health.org/wp-content/uploads/2018/06/20180223-HEAL_Toolkit_Turkey-Coal-Power-Plants_Health_Izmir_Canakkale_Tekirdag.pdf

The health burden from the five existing coal plants in Çanakkale has added up to:

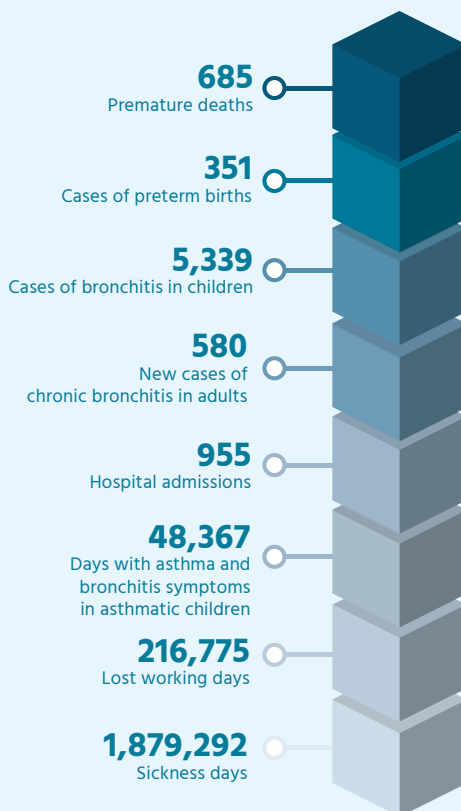


The economic cost of cumulative health impacts of five operating plants across the region (since first starting operation in 2005 to end 2020) are up to 103.95 billion Turkish Lira, or up to 6.93 billion EUR.⁷



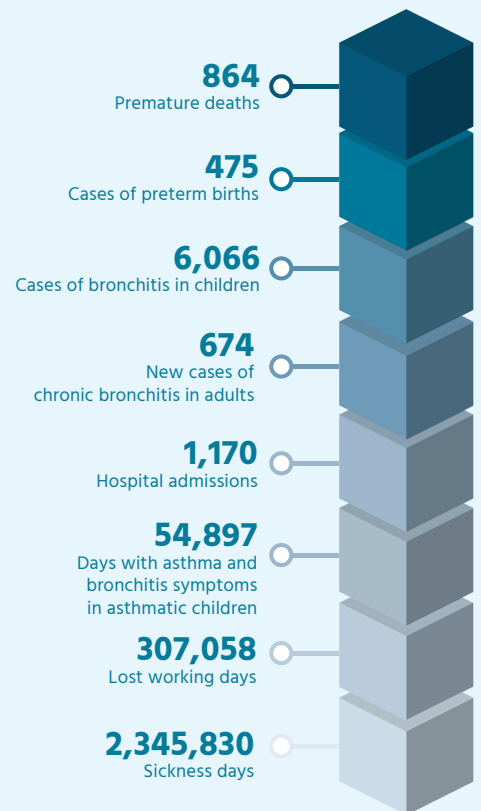
Çan 18 Mart

In operation since: 2005
 320 MW
**CUMULATIVE HEALTH COSTS:
 2.71bn EUR**



İÇDAŞ Biga

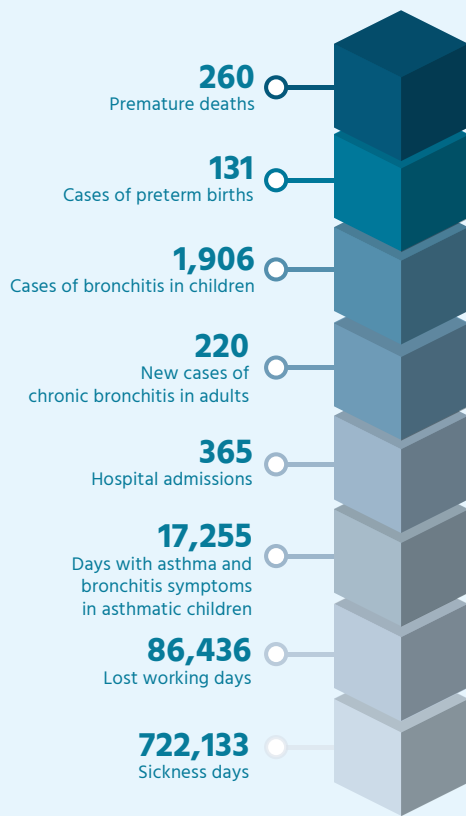
In operation since: 2005
 405 MW
**CUMULATIVE HEALTH COSTS:
 1.53bn EUR**



Bekirli

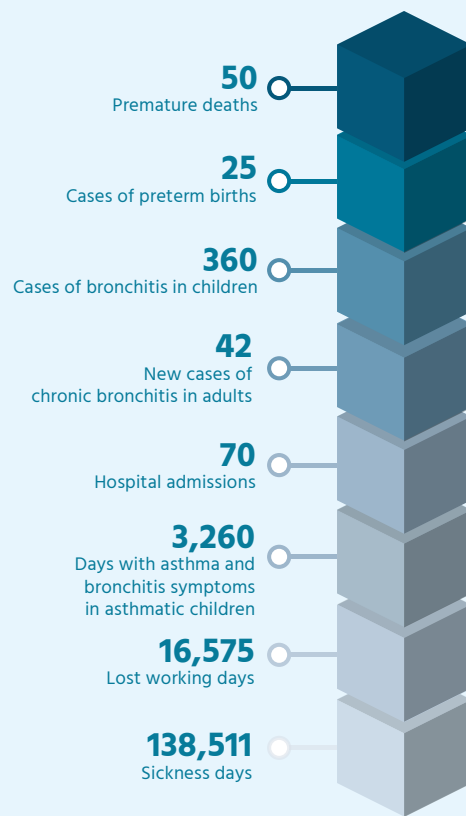
In operation since: 2011
 1,200 MW
**CUMULATIVE HEALTH COSTS:
 1.96bn EUR**

⁷Health 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



Cenal

In operation since: 2017
1,320 MW
**CUMULATIVE HEALTH COSTS:
0.62bn EUR**



Çan-2

In operation since: 2018
330 MW
**CUMULATIVE HEALTH COSTS:
0.12bn EUR**

HEAL's analysis highlights that even when air pollution control mechanisms are installed, this does not result in reducing health impacts to zero, or achieving zero pollution. In the case of Çan 18 Mart, the control mechanism for sulphur oxides (SO_x) is expected to operate with 98.5% efficiency and to

reduce SO₂ pollution to national emission limits. But this reduction only leads to a decrease of premature deaths by 70-75%, as pollutants from other plants react with each other and previously emitted pollutants in the atmosphere.

3. Recommendations

FOR POLICY-MAKERS



Immediately cancel plans and generation licences of Kirazlıdere and Karaburun coal power plants. Long term health effects of the existing plants are not observed yet, new plants will magnify the health cost as several pollution types stay in the environment and reach with each other. Moreover, an increase of coal capacity would harm the 2053 net zero carbon target.



Set a date for phasing out the 5 existing plants. Compared to several cities, plants in Çanakkale are younger. Çanakkale is already home to wind power plants and has an enormous potential. Invest in clean energy technologies for a smooth coal phase out process.



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 Çanakkale, particularly in Çan and Biga, to the public for better understanding and analysis of the health burden.



In order to understand the true health cost from coal power in Çanakkale, 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).



Increase the capacity of health and medical organisations and individuals (such as patients) in Canakkale 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 COP26⁸ and the WHO manifesto on a healthy recovery⁹ 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.

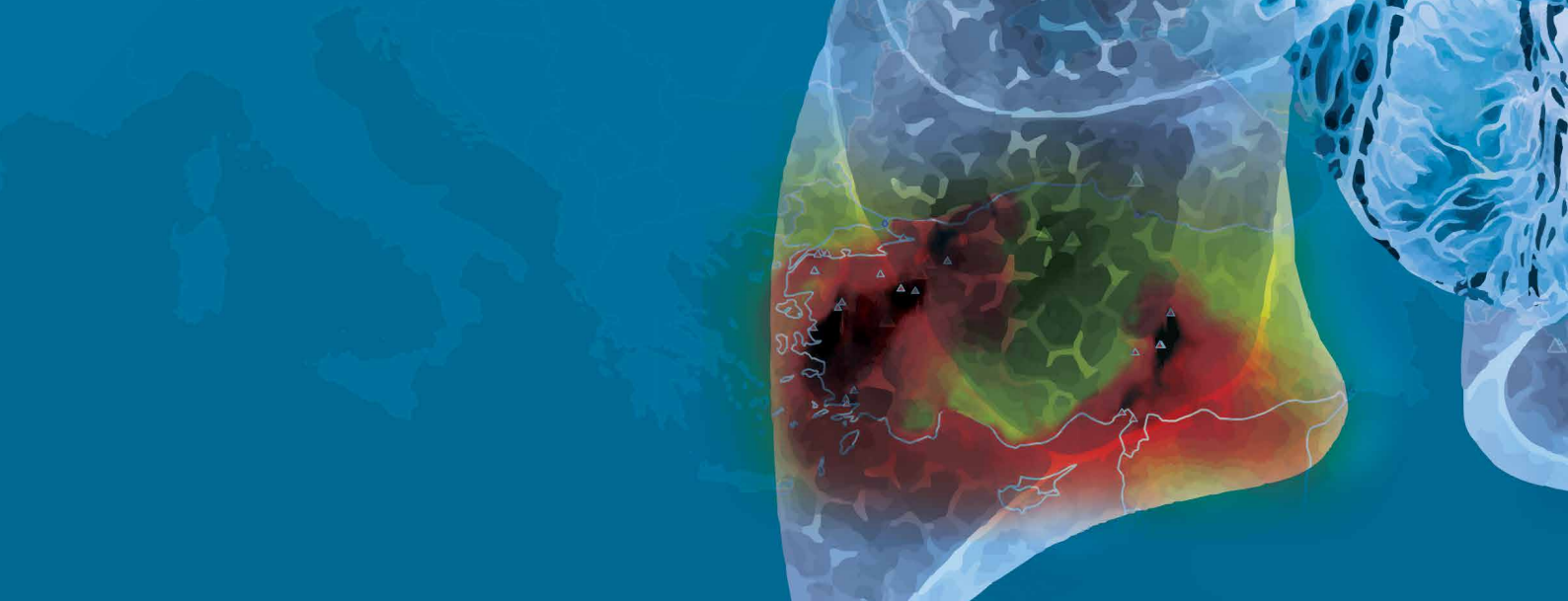


As Turkish Ministry of Health, participate and provide input to the development and implementation of clean air activities and plans, as well as energy and climate policies. Çanakkale has a clean air plan approved in 2017, where air pollution from coal used for household heating in the Çan district of Çanakkale is highlighted¹⁰. Analyse the portion of air pollution from coal power plants in the current air pollution burden, considering the pollutants from other sources in and around Çanakkale travels thousands of kilometres and constantly in reaction with each other.

⁸ World Health Organization. (October 2021). COP26 Special Report on Climate Change and Health. <https://www.who.int/publications/i/item/cop26-special-report>

⁹ 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>

¹⁰ Çanakkale Provincial Directorate of Environment and Urbanization. (2017). Çanakkale Temiz Hava Eylem Planı (in Turkish). <https://webdosya.csb.gov.tr/db/canakkale/duyurular/canakkale-ili-temiz-hava-eylem-planı-20180118170502.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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