

Press release

Coal in Candiota: Operations in Brazil risk hundreds of deaths and billions in economic health burden across four countries

Health impact assessment reveals total cumulative impacts of coal operations from 2017 to 2040 would reach 1,300 deaths and BRL 11.7 billion, from Brazil to Argentina, Uruguay, and Paraguay

PORTO ALEGRE / HELSINKI, 25 March 2026 - Situated in the southernmost Brazilian state of Rio Grande do Sul, some 1,500 kilometres from Brazil's largest city, São Paulo, the rural municipality of Candiota is home to a cluster of coal power projects that have come under the spotlight. In a country that is otherwise performing well in the energy transition, with coal contributing to only some 1.6% of the electricity mix, the Candiota coal operations stand out as an anomaly. Not only are they unnecessary for the country's power portfolio, but they are wreaking havoc on the economy and the health of populations in Brazil and in neighbouring Argentina, Uruguay, and Paraguay.

According to a new health impact assessment (HIA) report published today by the Centre for Research on Energy and Clean Air (CREA) and Brazilian environmental group ARAYARA, the interdependent power plant and mining complex in Candiota municipality that consists of the Candiota coal mine and the Candiota III coal-fired power plant, and the Seival Sul coal mine and the Pampa Sul coal-fired power plant, has contributed to approximately 430 deaths and health-related economic damages of BRL 5.1 billion from 2017 to 2025.

Emissions from coal operations are produced not only from combustion at coal power plants, but also from coal extraction, handling, transport, and clean up, as seen at the Candiota coal operations cluster, which leads to cumulative exposure for surrounding and transboundary populations across borders. At the global level, air pollution from coal is a well-established risk factor for mortality. Brazilian coal specifically is characterised by low calorific value and high ash content, which leads to elevated emissions of fine particulate matter (PM_{2.5}) and precursor gases when burned.

While Candiota's coal operations are a [local source of employment](#), the economic and health impacts of the operations on populations both in Brazil and neighbouring countries up until 2025 have been significant. Due to the transboundary nature of air pollution, the Argentinian population is the most impacted by the coal projects in Candiota, followed by Brazil, Uruguay, and Paraguay.

The largest and most impacted cities are Buenos Aires, Rosario, and Santa Fe in Argentina, and Montevideo in Uruguay.

If operations in Candiota continue until 2040, this would lead to an additional estimated 870 deaths and BRL 6.6 billion in health-related economic damages, reaching an estimated cumulative total of 1,300 deaths and BRL 11.7 billion from 2017 to 2040.

CREA and *Instituto Internacional ARAYARA* call on the federal government of Brazil to uphold Brazilian constitutional principles for the right to health, and immediately cease the contracting of coal-fired power plants until 2040 and beyond, as presented in [Law No. 15,269](#) that was approved on 24 November 2025, one day after COP30, and guarantees the contracting of coal-fired power plants until 2040. Continuing to support Candiota coal projects through subsidies despite evidence of critical health impacts, including deaths, may expose public authorities to constitutional challenges, especially given the availability of less expensive renewable energy sources. CREA and ARAYARA therefore propose the federal government immediately cease the contracting of coal-fired power plants and adopt a legally binding timeline to retire the Candiota III and Pampa Sul coal-fired power plants, with no extensions beyond existing contracts. Governments elsewhere in the world have [taken such steps at short notice](#) at earlier stages in their energy transition. The Brazilian government must now take steps to invest in a just transition without delay.

‘Coal is not a significant contributor to Brazil’s energy mix, but its negative impacts are disproportionately high,’ said Vera Tattari, analyst at CREA and lead author of the report. *‘The coal operations in Candiota carry an unacceptably large, transboundary responsibility for the health of thousands of people,’* she emphasised.

‘The health impacts of coal pollution begin even before birth,’ said Dr Jamie Kelly, co-author and air quality analyst at CREA. *‘Our analysis finds increased risks of low birthweight and preterm birth, alongside higher rates of childhood asthma and deaths linked to emissions from the Candiota coal complex. Continuing to support coal operations through subsidies risks prolonging these impacts, despite the availability of cleaner and more affordable renewable energy alternatives.’*

‘Coal air pollution-associated health impacts lead to huge economic losses for the public,’ said Dr. Kaiyu Chen, co-author and air quality and health scientist at CREA. *‘Toxic air pollutants cause adverse effects on human health, such as reducing the functions of the respiratory system, which induces additional economic burden to the public and society. Negative effects on health and associated costs should be considered in managing the coal-sourced industry.’*

‘Brazil needs to advance towards a true just and sustainable energy transition policy for territories of coal mining and coal burning for energy purposes, with the inclusion of workers, remediation of liabilities, and a work plan for the decommissioning of power plants, and not approve pro-coal legislation that merely subsidizes and contracts these fossil fuel projects up to horizons such as 2040 or 2050, as provided for in Law No. 15,269, of 24 November 2025, which, after strong pressure from the coal lobby, was sanctioned by the Lula Government after the first day of the conclusion of COP30,’ emphasised Dr Juliano Bueno de Araújo, Technical Director at *Instituto Internacional ARAYARA*.

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Notes to editors

The report related to this press release can be found [here](#).

All CREA publications can be found here:

energyandcleanair.org/publications

About CREA

The Centre for Research on Energy and Clean Air (CREA) is an independent research organisation focused on revealing the trends, causes, and health impacts, as well as the solutions, to air pollution. CREA was founded in December 2019 in Helsinki and has staff in several Asian and European countries. The organisation's work is funded through philanthropic grants and revenue from commissioned research.

www.energyandcleanair.org

About ARAYARA

Instituto Internacional ARAYARA is a nonprofit civil society organization (CSO) founded through a partnership between scientists, urban managers, engineers, urban planners, and environmentalists. We believe that to achieve a safer society that values the quality of life of its citizens, we need to ensure that all resources are used and distributed widely, fairly, and sustainably.

For 30 years, we have been promoting social change through environmental education and political activism in the pursuit of more efficient use of energy sources and the broad right to land.

We have worked in all regions of Brazil, have an office in Uruguay, and have developed a series of initiatives in Latin and Central America.

Arayara.org

About the methodology

This health impact assessment (HIA) report evaluates the air pollution, health, and economic burden caused by the two largest coal mines and power plants operating in Candiota, Rio Grande do Sul, Brazil. The Candiota and Seival Sul coal mines, along with the Pampa Sul and Candiota III power plants, were selected for analysis due to their scale and interdependence. Nearly 100% of the coal extracted from the Seival Sul mine is used to generate electricity at the Pampa Sul power plant, while the Candiota mine supplies the Candiota III plant in a similar arrangement. Because the mines and plants are mutually dependent, reducing or retiring the operation of one would directly affect the operation of its corresponding facility.

The report considers atmospheric emissions of sulfur dioxide (SO₂), nitrogen oxides (NOX), and fine particulate matter (PM_{2.5}). From the coal plants, we retrieve their hourly flue gas concentrations from Continuous Emission Monitoring System (CEMS) data from 2021–2023, reported by Ambar Energia. These values are scaled to the study timeline from 2017 to 2040 by multiplying the yearly values by 30. For the coal mines, we estimate emissions by using emission factors from IPCC, EEA, and individual studies on these mines to obtain the most accurate emission factors with activity data, based on the mines' production capacities.

The full methodology is available in the report.