

LETTER TO THE READERS

Following the path of its four core programmatic objectives, the Instituto de Energia e Meio Ambiente (Instituto de Energia e Meio Ambiente, IEMA) remains committed to key issues for the socio-environmental development of the country: sustainable regional freight transport, a clean and inclusive energy matrix, clean air, and low-emission urban mobility. This document presents the main activities carried out by IEMA in 2023, reinforcing its commitment to transparency over its 18 years of existence.

As detailed below, the institute continued its work as a think tank, producing information, studies, and analyses aimed at generating knowledge that contributes to improving decision-making processes and building stronger public policies. In addition to providing a brief description of the organization's activities and impacts, as well as its financial and asset situation, the report addresses how resources are being invested.

Enjoy your reading,
André Luis Ferreira, Executive Director of IEMA.

SUMMARY



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IEMA

The Instituto de Energia e Meio Ambiente (IEMA) is a think tank based in São Paulo, established in 2006, with operations across the entire country. Now, it is expanding its activities to Latin America. Recognized for producing and disseminating technical and scientific knowledge on environmental issues, it has contributed to improving environmental quality in a socially just and sustainable manner.

PURPOSE

Qualify decision-making processes so that transportation and energy systems in Brazil ensure the sustainable use of natural resources with social and economic development

VALUES

Generosity — cooperation and knowledge sharing with society.

Excellence — appreciation for scientific rigor and independent thinking.

Transparency — genuine openness and listening.

Impact — focus on long-lasting, public interest-oriented transformations.

IEMA

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ANNUAL REPORT 2023 CREDITS

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STRATEGIC PLANNING

The IEMA has outlined five strategic objectives for the 2020-2024 cycle, consisting of four programmatic objectives and one institutional objective, aimed at improving and strengthening governance, management, and communication, as well as promoting team capacity building.

The following pages highlight the main achievements in relation to the programmatic objectives: Clean Air, Low-Emission Urban Mobility, Sustainable Regional Freight Transport, and a Clean and Inclusive Energy Matrix. These objectives were pursued through work conducted across nine lines of action.

It is important to note the expansion of dialogue with the media and the strengthening of collaborations and partnerships with government bodies, which were fundamental initiatives for achieving the established goals and ensuring significant results.



STRATEGIC PLANNING

OBJECTIVES

1

CLEAN AIR

Adapt air quality in large Brazilian urban agglomerations, following the recommendations of the World Health Organization (WHO)

2

LOW-EMISSION URBAN MOBILITY

Promote urban mobility that is inclusive and has low emissions of atmospheric pollutants and greenhouse gases.

3

SUSTAINABLE REGIONAL FREIGHT TRANSPORT

Reduce the negative social and environmental impacts of freight transport

4

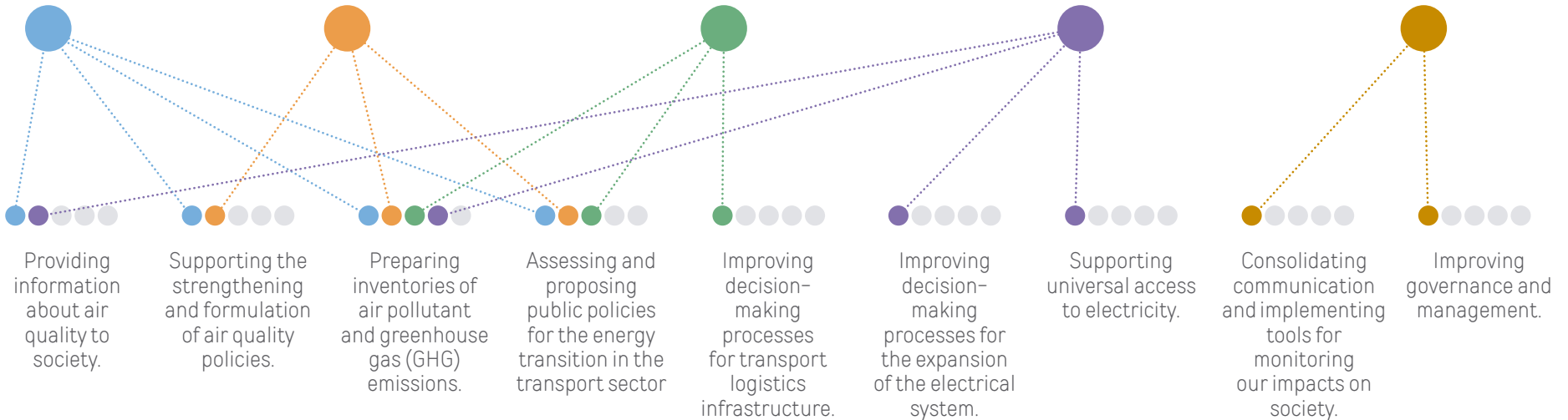
CLEAN AND INCLUSIVE ENERGY MIX

Universalize access to electricity and reduce the negative social and environmental impacts of the expansion of the electricity system

5

INSTITUTIONAL DEVELOPMENT

To strengthen governance, management, and communication. To promote the team's personal development



LINES OF ACTION

CLEAN AIR

Adapt air quality in large Brazilian urban agglomerations, following the recommendations of the World Health Organization (WHO)

Helen Sousa / IEMA

In major urban centers across Brazil, a recurring concern is the quality of the air. According to estimates by the Pan American Health Organization (PAHO), evidence of the harm caused by air pollution is rapidly growing, pointing to significant damage even when atmospheric pollutant levels are relatively low. Alarming, the World Health Organization (WHO) reports that 99% of the global population breathes air that exceeds recommended quality limits, which poses a serious threat to people's health.

Air pollution causes severe health impacts, worsening respiratory, cardiovascular, and neurological diseases. Moreover, it negatively affects ecosystems, potentially harming agriculture and urban areas, and contributes to the contamination of water and soil. The quality of air in a region depends on both pollutant emissions and natural factors, such as meteorological conditions and local topography.

The WHO reports that six thousand cities in 117 countries monitor air quality, with low- and middle-income countries experiencing greater exposure to unhealthy levels of particulate matter and nitrogen dioxide compared to the global average. In Brazil, there is still a gap regarding official air pollution data. Understanding the types and quantities of pollutants present is the first

step in addressing this serious problem.

To this end, IEMA has been contributing by disseminating air monitoring data in Brazil through its Air Quality Platform (Plataforma da Qualidade do Ar), which launched a new version in May 2023. One of the organization's main goals is to ensure that at least all metropolitan regions of Brazil, where the majority of the population resides, monitor and publish data on local air quality.

NEW AIR QUALITY PLATFORM

Since 2015, IEMA has maintained the [Air Quality Platform](#) to manage governmental data on air quality in Brazil. The new version of the platform includes features such as maps showing the locations of all monitoring stations and their respective classification according to the annual air quality standard for each pollutant.

The platform also provides a historical series of pollutant concentrations from various monitoring stations and has been used by the [World Health Organization \(WHO\)](#) as an official source of data for Brazil. [The new version](#), for the first time, is available in a bilingual format. In addition to [Portuguese](#), air monitoring data can now be accessed in [English](#) and [Spanish](#).

Moreover, the Air Quality Platform includes the most updated WHO air quality guidelines, which are stricter than the current Brazilian air quality standards. It presents annual pollutant averages, showing, for example, that air pollutant concentrations in São Paulo were nearly double a few decades ago compared to current levels, though they still exceed WHO guidelines.

For the launch, IEMA invited specialists to discuss the issue at a national and Latin American level in an [event broadcast live on YouTube](#), with a [Spanish version](#) available. The event featured Adalberto Felício Maluf Filho (National Secretary of Urban Environment and Environmental Quality, Ministry of Environment and Climate Change, MMA), Daniela García (Inter-American Association for Environmental Defense, AIDA-Americas), and Alberto Setzer (Queimadas Program of the Brazilian National Institute for Space Research, Instituto Nacional de Pesquisas Espaciais, INPE), along with the IEMA team. There are no borders for air pollution, and it is impossible to separate it from health and greenhouse gas emissions.



Thus, the Air Quality Platform is an important tool for tackling these challenges in the Latin American region, enabling greater cooperation among countries in exercising governance for cleaner air. It is a means to address air pollution and the climate crisis jointly.

AIR QUALITY PLATFORM WORKSHOP

IEMA organized the Air Quality Platform Workshop with the goal of disseminating essential concepts about air quality monitoring and demonstrating the use of the platform. This was the second [online edition](#), held in September 2023, and attended by 87 participants, including high school to graduate students, researchers, journalists, public managers, environmental activists, and other interested individuals.

The content was presented by Helen Sousa, an air quality specialist at IEMA, and David Tsai, a project manager at the organization. To gain practical insights into how to analyze data and understand the state of air pollution in the country, participants explored topics such as basic concepts, how monitoring is carried out, Brazilian air quality standards, and the World Health Organization (WHO) guidelines.

STUDIES

To communicate the state of air quality to the general public, especially decision-makers such as parliamentary advisors and politicians, IEMA issues Technical Notes. These effectively present the content and data obtained from analyses based on the information available on the Air Quality Platform.

In July 2023, the technical note "[Qualidade do ar na Região Metropolitana de Belo Horizonte](#)" ("[Air Quality in the Metropolitan Region of Belo Horizonte](#)") highlighted the influence of industries in the metropolitan area of the capital of Minas Gerais over the past 20 years. The concentration of pollutants was above the levels recommended by the WHO. In addition to the two most common pollutants — inhalable particulate matter (PM10) and fine particulate matter (PM2.5) — the study analyzed concentrations of sulfur dioxide (SO₂), nitrogen dioxide (NO₂), and ozone (O₃) in the region.

According to the emissions inventory for the municipality of Betim, more than 60% of the particulate matter mass emitted in the region originates from industries, with metalworking companies being prominent. Regarding ozone, out of the 11 monitoring stations, five no longer met the air quality guidelines.

In a previously released IEMA technical note on São Paulo, it was observed that most air pollution originates from mobile sources such as cars, light commercial vehicles, trucks, buses, and motorcycles. In the case of Belo Horizonte and the surrounding area, in addition to mobile sources, the

“The absence of an updated air quality database and annual reports highlights the lack of purpose of this information in combating air pollution. Furthermore, these deficiencies leave the population uninformed about the true quality of the air they are breathing.”

Helen Sousa, IEMA Project Analyst

industrial activities of municipalities—including oil refining, steel plants, and limestone mining (for lime production)—have significant potential to generate high concentrations of atmospheric pollutants.

The production of technical notes helps elucidate the problem of insufficient air quality monitoring to promote improvements. Thus, IEMA aims to broaden society’s understanding of the air quality in Brazil.



Pexels/ Luis Quintero

City of Santa Marta, Colombia, where IEMA participated in an event on air quality.

INTERNATIONALIZATION

In Colombia, there is also a concern about the quality of the air to promote climate justice and public health throughout Latin America and the Caribbean. Helen Sousa represented IEMA at an event held in Santa Marta in March 2023 to launch

a regulatory framework defending this right. The meeting brought together various organizations from the region to discuss the challenges of these issues.

Some guidelines were suggested on this occasion, such as jointly addressing air pollution and the climate crisis; progressively establishing and adopting ambitious pollutant reduction measures and targets; developing air quality and health indices in Latin American and Caribbean countries; coordinating low-cost air quality monitoring systems; increasing international cooperation through the adoption of commitments to reduce emissions and cross-border impacts; ensuring human rights to participation, access to information, and justice; and providing public information on air quality and environmental education.


It is worth noting that since 2022, IEMA has been part of the Coalición Latinoamericana por el Aire Limpio (ALAIRE Coalition) through the Coalizão Respirar (IEMA, Instituto Alana, and Instituto Ar) along with organizations such as Asociación Interamericana para la Defensa del Ambiente (AIDA), El Derecho a No Obedecer (a project of Corporación Otraparte), Trébola Organización Ecológica, El Poder del Consumidor, and the Heinrich Böll Foundation. Countries in


PUBLICATIONS

 Air Quality in the Belo Horizonte Metropolitan Region





IN THE MIDIA


 **Folha de São Paulo**
Air quality in Greater BH is more than four times worse than the WHO's acceptable limit

 **Estado de Minas**
Air quality in Greater BH is more than four times worse than the WHO's acceptable limit


 **Rádio CBN**
Study shows that air pollution in Greater BH exceeds acceptable levels

 **Valor Econômico**
Air pollution above recommended levels affects Greater BH

 **Revista Exame**
What kind of PAC does Brazil need?

 **TV GLOBO/ MG 1 edição**
Pollutant levels in Greater BH are above acceptable limits

 **Amazonas Atual**
Lack of air quality control by public agencies in Manaus, says IEMA

 **Correio Braziliense**
Climate change: children are more vulnerable due to their developing respiratory systems

Latin America share air quality management problems, such as a lack of monitoring, emission inventories, and effective mechanisms to meet WHO recommendations. Thus, the formation of this coalition aims to drive progress across the region.

DEMOCRACY

Democracy is built through social participation. Aligned with this premise, IEMA frequently participates in debates within Brazil's legislative bodies. David Tsai, IEMA's project manager, participated in October in a debate in the Senate to discuss the National Air Quality Policy, highlighting the challenges in monitoring and the importance of building Brazil's first national air quality policy.

Tsai was one of the representatives of Coalizão Respirar, which was also represented by Instituto Ar. The discussions included representatives from the federal government, the World Health Organization (WHO), and industry. Coalizão Respirar is a network that brings together over twenty civil society organizations working together to advocate for air quality and combat climate change in Brazil.

VIDEOS

- ▶ Check out the launch of the new version of the Air Quality Platform, in May 2023, developed by the Institute for Energy and Environment (IEMA).
 - ▶ Experts demonstrate how to use the Air Quality Platform, in addition to presenting analyses and the results of technical reports developed from its data.
-

At the event titled "Monitoramento do Ar na Amazônia (Air Monitoring in the Amazon)," promoted by the Ministry of Environment and Climate Change (MMA) in partnership with Instituto Ar, the IEMA team presented a document with recommendations for expanding the air monitoring network. During the meeting, IEMA highlighted the challenges related to air quality in the country, such as the lack of political initiative and planning. Comparisons were also made between Brazilian monitoring and that of other countries, such as the United States, which has more monitoring stations per capita. Currently, the states of the Legal Amazon do not have equipment under state





Sky of Belo Horizonte (MG) observed between buildings.

government responsibility to monitor air quality. As a result, there is a lack of data and communication to the population, which is particularly important during the dry season and periods of intense fires.

The event was also attended by technicians, academics, public managers, and other members of civil society to discuss air monitoring in the Amazon region using low-cost equipment, the impacts of pollution on health and climate change, and the use of citizen technologies to monitor and support air quality management. Since 2020, the region has already had an expanding network formed exclusively by these devices, an initiative developed in the state of Acre. This management innovation could become a significant asset for complementing the still nonexistent official monitoring networks.

EVENTS

☑ Reinforcing IEMA's commitment to occupying knowledge spaces for the sustainable construction of public policies, in August, the institute participated in the workshop “Visões sobre a qualidade do ar no Brasil para alcançar metas de saúde e clima” (“Perspectives on Air Quality in Brazil to Achieve Health and Climate Goals”), where it presented the work “Recomendações para a expansão e a continuidade das redes de monitoramento da qualidade do ar no Brasil” (“Recommendations for the Expansion and Continuity of Air Quality Monitoring Networks in Brazil”), released in 2022. The document provides an overview of the deficiencies in air quality monitoring in Brazil and raises some suggestions for public policy directions aimed at expanding and maintaining monitoring networks, as well as reflecting on the challenges that persist in this practice. The event was held at the Environmental Company of the State of São Paulo (CETESB), organized by the Ministry of Environment and Climate Change (MMA) and the Environmental Defense Fund (EDF).

☑ In November, at the 16th edition of Seminário Hospitais Saudáveis (16th edition of the Healthy Hospitals Seminar) (SHS 2023), the IEMA team highlighted the negative impacts of thermal power on air quality. Under the theme “Ação climática para transformação do setor saúde: redesenhando a saúde do amanhã” (“Climate Action for Transforming the Health Sector: Redesigning Tomorrow's Health”), the event was held with support from Hospital Israelita Albert Einstein and in partnership with Health Care Without Harm, the São Paulo State Health Department (SES-SP), and the São Paulo Health Surveillance Center (CVS/SES-SP).

RESULTS

AIR QUALITY MONITORING PLATFORM AS A WHO REFERENCE

The World Health Organization (WHO) continues to use data from the Air Quality Platform in its Air Quality Database, updated in 2023. The repository gathers annual average concentration data for nitrogen dioxide (NO₂), particulate matter of 10 µm (PM₁₀), and 2.5 µm (PM_{2.5}) worldwide.

The WHO database includes 478 Brazilian records provided by IEMA, indicating pollutant concentrations in 82 locations (cities or metropolitan areas) between 2010 and 2019. This inclusion offers a more comprehensive and accurate view of air quality, allowing for a more complete analysis of pollution levels across the country.

AIR QUALITY MONITORING PLATFORM COLLABORATING WITH PERNAMBUCO

Some Brazilian states, such as Pernambuco, are unable to publicly provide their air quality data. The IEMA Air Quality Platform assists in this process. In this case, the state's official website redirects users to the Platform's monitoring data.

Historical air quality data from Pernambuco, dating back to 2017, is available on the Platform. Pernambuco has four automatic air quality monitoring stations equipped with devices that continuously collect and analyze samples, processing the information into hourly averages.

LOW-EMISSION URBAN MOBILITY

Promote urban mobility that is inclusive and has low emissions of atmospheric pollutants and greenhouse gases

William Santos/ Pexels

In Brazil, motorized individual transportation, which predominantly uses fossil fuels, has a significant impact on greenhouse gas (GHG) emissions and the air quality of large and medium-sized cities across the country. According to the Greenhouse Gas Emissions and Removals Estimation System (Sistema de Estimativas de Emissões e Remoções de Gases de Efeito Estufa – SEEG), an initiative by the Observatório do Clima (Climate Observatory) in which IEMA coordinates the energy and industrial processes sectors, transportation is the activity that emits the most due to energy use or production, releasing 216.9 MtCO₂e (megatonnes of carbon dioxide equivalent) into the atmosphere in 2022. Automobiles alone were responsible for 68.1 MtCO₂e, accounting for over 30% of this total.

The promotion of car use over public transportation, in addition to impacting GHG emissions and air pollution, brings a series of other urban problems to light, such as traffic accidents, congestion, high socio-economic costs, and limited access to the city, especially for low-income individuals, exacerbating structural social inequalities. Overcoming these challenges requires prioritizing active and collective transportation, which are more democratic, as already outlined in the Política Nacional de Mobilidade Urbana (National Urban Mobility Policy).

In this context, and especially remembering that mobility is the right that grants access to other rights, IEMA believes that technological solutions like vehicle electrification, while beneficial, must be developed alongside improvements in public transport, walking, and cycling. This will promote a just energy transition that leverages global efforts to reduce atmospheric emissions to also address inequalities.

Considering the various existing alternatives to achieve inclusive and low-emission urban mobility, IEMA aims to contribute to public decision-making by assessing the impacts of different scenarios and policies on the subject. This work is essential to guide the actions needed to transform Brazil's transportation sector and meet the country's climate goals. IEMA is committed to producing analyses and studies on different scenarios

“When fuel is burned in a vehicle’s engine, it emits greenhouse gasses. We need to think about reducing the need to burn these fuels, ensuring that people live closer to income and educational opportunities, and can walk, cycle, and use even more public transportation, ideally electrified.”

Felipe Barcellos e Silva,
researcher at IEMA

to promote urban mobility with low emissions of air pollutants and GHGs, contributing to a just energy transition and proposing public policies capable of helping to reduce global warming.

BRAZILIAN TRANSPORTATION INDUSTRY

In October 2023, the Institute for Energy and Environment (IEMA) released a new analysis highlighting the risks to the Brazilian transport sector, particularly the industry, stemming from the EU-Mercosur Trade Agreement. The study, “Os impactos do Acordo de Comércio Mercosul – União

Europeia na indústria brasileira de equipamentos de transporte” (“The Impacts of the Mercosur-European Union Trade Agreement on the Brazilian Transport Equipment Industry”), reveals the imbalance in international trade, such as the demand for electric vehicles in Brazil and the development seen in the European industry.

The document aimed to analyze the implications of the EU-Mercosur Trade Agreement for Brazil’s public transportation industry. With the advancement of electric vehicles and the evident need for modernization, Brazil’s transport industry, especially buses, will face significant competitive challenges.



Bus lane in the city of São Paulo (SP).



Agência Brasil/ Rovena Rosa

INTERNATIONALIZATION

David Tsai, IEMA project manager, and Renato Boareto were in Italy in June, where they participated in the conference “Construindo uma indústria global de mobilidade ecológica (Building a Global Green Mobility Industry)”, organized by the Italian Federation of Metalworkers and the Rosa Luxemburg Foundation in Brussels. During the event, they warned of the risk of a “conservative modernization” of Brazil’s automotive industry, where injustices in urban mobility could be maintained or even deepened.


This concept is based on the mistake of a society investing in electrification with a focus solely on the energy transition of individual transportation, meaning allocating resources to clean up the mobility model while depriving people of accessibility, especially those with lower incomes. The goal should be inclusive mobility, a development policy that views public transportation as a social and universal right.

An important warning from the presentation by IEMA is that the energy transition is a necessity and should be incorporated into urban mobility policy. However, there are economic and political challenges that must be addressed to resolve structural problems. This discussion on structural crises and the energy transition must be guided by the expansion of rights and accessibility, with quality public transportation considered an essential service for society.

APPLICATION

The PlanFrota tool, developed by IEMA to support fleet renewal planning with less polluting buses, and the “Análise de aspectos fundamentais para a introdução de ônibus não poluentes em 13 cidades brasileiras (Analysis of Fundamental Aspects for the Introduction of Non-Polluting Buses in 13 Brazilian Cities)” are featured in the [“Caderno Técnico de Referência para a Eletromobilidade nas Cidades Brasileiras \(Technical Reference Guide for Electromobility in Brazilian Cities\),”](#) from the Ministry of Regional Development (MDR).

PUBLICATIONS

 The Impacts of the Mercosur-European Union Trade Agreement on the Brazilian Transport Equipment Industry



IN THE MIDIA

Diário da Região

Seven out of ten vehicles on the road in Rio Preto are over ten years old

JC Mobilidade/ Acessibilidade

Car Industry Incentives: What is the public interest in a car purchase incentive program?

TV Globo/SP1

Capital receives 50 new electric buses for public transportation

Rádio CBN

Green hydrogen identified as the fuel of the future



SUSTAINABLE REGIONAL FREIGHT TRANSPORT

Reduce the negative social and environmental impacts of freight transport

Fábio Rodrigues-Pozzebom / Agência Brasil

Transport infrastructure is essential for the economic and social development of the country. It enables the movement of people across the territory and the flow of goods, which is crucial to ensure domestic supply and the import and export of products and raw materials.

Despite its great importance, the decision-making process for selecting investments in transport logistics infrastructure is rarely discussed in Brazil. In practice, debates tend to focus on specific projects and urgent problems.

As a result, IEMA has developed analyses and proposals related to the decision-making process for transport in Brazil—at the level of policy and sectoral planning. Two key issues that highlight the fragility of the decision-making process are the lack of incorporation of social and environmental risks and the absence of transparency and public participation.

These analyses have supported presentations and meetings with various stakeholders, aiming to build a multi-sector alliance that seeks to improve the decision-making process on transport infrastructure investments, particularly within the Federal Government.

ALTERNATIVE ANALYSIS

Transport and logistics projects are incorporated into the Multi-Year Plans (PPAs – Planos Plurianuais) and the Public-Private Partnership Investment Program (PPI – Programa de Parcerias de Investimentos Público-Privados) without clearly specifying the criteria used and without considering alternative solutions that could prove viable and contribute to the socio-economic development of the country with lower socio-environmental risks.

In response to this, in partnership with other organizations— GT Infraestrutura e Justiça Socioambiental, Instituto Socioambiental (ISA), Instituto Brasileiro de Auditoria de Obras Públicas (IBRAOP), and Transparency International Brazil (TI-BR)—IEMA worked on a set of criteria for the preliminary analysis of infrastructure investment alternatives and a proposal for diagnostic and classification categories aimed at contributing to the selection of projects included in government planning.

This effort resulted in the publication of the technical note [“Critérios para análise e classificação de empreendimentos de infraestrutura no Plano Plurianual \(PPA\) 2024-2027 e no Programa de Parcerias de Investimentos \(PPI\) \(Criteria for the Analysis and Classification of Infrastructure](#)

“At its initial stage, the planning process must include the development of the country’s transport infrastructure agenda. That is, it must define the problems it intends to solve. This goes far beyond just a list of specific projects,”

André Luis Ferreira,
Executive Director of IEMA

Projects in the Multi-Year Plan (PPA) 2024-2027 and the Public-Private Partnership Investment Program (PPI),” launched in June 2023. The document reflects on the criteria to be used for project selection, presenting four categories for infrastructure analysis: alignment with the government’s strategic guidelines, preliminary analysis and management of socio-environmental risks, socio-economic evaluation, and promotion of transparency and social participation.

- Analysis of planning, evaluation of alternatives, and portfolio of infrastructure projects;
- Guidelines for evaluating transparency and integrity mechanisms in infrastructure;
- Guidelines for evaluating spaces and opportunities for public participation and oversight in infrastructure.

RULING FROM THE FEDERAL COURT OF ACCOUNTS

Since 2021, the Federal Court of Accounts (Tribunal de Contas da União, TCU), the federal government’s external control body that assists the National Congress in overseeing the country’s budget and financial execution, has been monitoring the infrastructure planning activities at the federal level. Its goal is to contribute to improving these activities, aligning them with national and international best practices. The conclusions of TCU’s recent audits on transport sector planning have shown a significant alignment with IEMA’s analyses. As a result, the institutions have been working more closely, with the aim of exchanging technical information.

PUBLIC WORKS

IEMA is an invited member of a technical group at IBRAOP (Brazilian Institute of Public Works Audit), which brings together auditors from courts of accounts and third-sector organizations to develop socio-environmental procedures for auditing infrastructure projects. The following procedures were published in 2023:

At the request of the TCU's Specialized Unit for Port and Railway Infrastructure Auditing, IEMA participated in technical meetings to provide input for the operational audit report: "Acompanhamento sistemático do desenvolvimento das etapas do Plano Nacional de Logística (PNL) e Planejamento Integrado de Transportes (TC 005.104/2023-8 - Fiscalização 36/2023)" (Systematic Monitoring of the Development of Stages of the National Logistics Plan and Integrated Transport Planning, TC 005.104/2023-8 - Audit 36/2023). An example of this collaboration was IEMA's participation in the reference panel for the planning matrix of the Monitoramento Sistemático do Planejamento Integrado de Transportes (PIT) (Systematic Monitoring of Integrated Transport Planning), held in June 2023.

The report resulted in [Acórdão 2519/2023](#) (Ruling 2519/2023), with the following key points:

- Recommend that the Casa Civil da Presidência da República (Chief of Staff of the Presidency) and the Ministério do Planejamento e Orçamento (Ministry of Planning and Budget) evaluate the feasibility of submitting a bill requiring minimum criteria, such as preliminary analyses of social and environmental cost-benefits, for the inclusion of material logistics projects in public budgets, to avoid unfeasible or low socio-economic viability projects. This would



Agência Brasil/ Fernando Frazão

align with the guidelines of the Guia Geral para Análise de Custo-Benefício Socioeconômico de Projetos de Investimento em Infraestrutura do Governo Federal (General Guide for the Socio-Economic Cost-Benefit Analysis of Infrastructure Investment Projects by the Federal Government);

- Recommend that the Ministério dos Transportes (Ministry of Transport) and the Ministério dos Portos e Aeroportos (Ministry of Ports and Airports) establish opportunities for transparency and effective public participation before major decisions in the regulations that will institutionalize the integrated transport planning cycle;

Boats docked along the Parintins waterfront, on the Amazon River.



Sunset on the Rio Negro in Manaus (AM).

6TH NATIONAL ACTION PLAN ON OPEN GOVERNMENT


In 2023, the Controladoria Geral da União (CGU) (Office of the Comptroller General), the Federal Government body responsible for protecting public assets, promoting transparency, and combating corruption, invited IEMA to participate in the Co-Creation Workshops for Brazil's 6º Plano de Ação Nacional (6th National Action Plan) as part of the Parceria para Governo Aberto (Open Government Partnership - OGP), specifically focusing on COMPROMISSO 1: INSTRUMENTOS PARA APRIMORAR TRANSPARÊNCIA E PARTICIPAÇÃO SOCIAL NAS POLÍTICAS PÚBLICAS DE INFRAESTRUTURA (Commitment 1: Tools to Improve Transparency and Social Participation in Public Infrastructure Policies).

The National Action Plans are developed by member countries of the Open Government Partnership (OGP) and aim primarily to promote open government practices aligned with the principles of transparency, social participation, and responsiveness.

- Send a copy of the decision, accompanied by the supporting vote and report, to the following organizations: Instituto Brasileiro de Auditoria de Obras Públicas (Ibraop), Transparência Internacional - Brasil (Transparency International - Brazil), Instituto Socioambiental (ISA) (Socio-environmental Institute), Instituto de Energia e Meio Ambiente (IEMA) (Instituto de Energia e Meio Ambiente), and the GT Infraestrutura e Justiça Socioambiental (Infrastructure and Socio-environmental Justice Working Group), to engage them in monitoring the Ruling that will be issued, in accordance with Diretriz 9 da Portaria Segecex 24/2023 (Guideline 9 of Segecex Ordinance 24/2023).

The work carried out during the co-creation workshops defined nine milestones to be achieved by 2027. IEMA, in partnership with the CGU's Infrastructure Directorate, coordinates Marco 1 (Milestone 1): "Mapeamento de boas práticas e oportunidades de transparência, participação e controle social no processo decisório do planejamento, da execução e do monitoramento de investimentos de infraestrutura" (Mapping good practices and opportunities for transparency, participation, and social control in the decision-making process for planning, execution, and monitoring of infrastructure investments). Additionally, IEMA is involved in Marco 2 (Milestone 2), "Propor alterações regulatórias que indiquem, para cada setor relevante, as fases em que a participação social é importante e necessária,

PUBLICATIONS

 Critérios para análise e classificação de empreendimentos de infraestrutura propostos para inclusão no Plano Plurianual 2024-2027 e no Programa de Parcerias de Investimentos (PPI) (Criteria for the analysis and classification of infrastructure projects proposed for inclusion in the Multi-Year Plan 2024-2027 and the Public-Private Partnership Program)



mas ainda não prevista ou insuficiente" (Proposing regulatory changes that indicate, for each relevant sector, the phases in which social participation is important and necessary but not yet provided for or insufficient), and Marco 5 (Milestone 5), "Criar um espaço para diálogo permanente entre governo e sociedade na agenda de melhoria dos planos e projetos de investimentos em infraestrutura" (Creating a space for ongoing dialogue between government and society on improving infrastructure investment plans and projects).

Until its conclusion in 2027, the 6º Plano de Ação (6th Action Plan) will be jointly monitored and evaluated by both the government and

society. Periodic meetings will be held among the involved stakeholders, and coordinators, like IEMA, will prepare status reports (ESR) on the implementation of the commitments. These reports aim to ensure transparency in discussions about the results of the commitments' implementation.

CIVIL SOCIETY ORGANIZATIONS TRAINING WORKSHOP

A workshop was held in the city of Santarém in collaboration with social movements and other organizations from the Corredor Logístico Tapajós-Xingu (Tapajós-Xingu Logistics Corridor) to share information about deficiencies in the planning and decision-making processes for transport infrastructure in Brazil. The workshop was attended by 60 people from 31 non-governmental organizations.



IN THE MIDIA

Diário do Comércio

The impacts of railway remodeling on the economy

Valor Econômico

Entities seek changes in rules for analyzing environmental licensing

Agência Brasil

Technical note provides criteria for selecting infrastructure projects

Clima Info

Civil society proposes improvements in planning large projects

EPBR

Technical note provides criteria for selecting infrastructure projects

Agência Brasil

New PAC expected to triple infrastructure investments

Para Terra Boa

Movements publish letter against the Corredor Logístico Tapajós-Xingu (Tapajós-Xingu Logistics Corridor) project

Jornal Dia a Dia

Traditional communities request infrastructure analysis for the Amazon

CLEAN AND INCLUSIVE ENERGY MIX

Universalize access to electricity and reduce the negative social and environmental impacts of the expansion of the electricity system

Nareeta Martin/ Unsplash

The UN's Agenda 2030 with its 17 Objetivos de Desenvolvimento Sustentável (ODS) (Sustainable Development Goals, SDGs) emphasizes the need for a transition to clean and renewable energy, as well as the democratization of access to energy. Brazil supports these efforts, although it faces challenges in implementing the agenda. The country aims to meet Objetivo 7 (Goal 7), which seeks to ensure access to affordable, reliable, sustainable, and modern energy for all.

Brazil's energy matrix is considered more renewable compared to the global energy matrix. According to data from the Empresa de Pesquisa Energética (EPE) (Energy Research Company), it consists of almost 45% renewable sources, such as biofuels and hydropower. On the other hand, just over half of Brazil's energy matrix (55%) is made up of non-renewable energy sources, with a predominance of fossil fuels, such as oil and derivatives.

The federal government has intensified efforts in energy transition, both in legislative projects for the production of green hydrogen and offshore wind power regulation, and in establishing a national energy transition policy, which is still in the process of developing a plan and a social participation forum. However, these efforts conflict with the government's intention to defend the expansion of

oil and gas production by Petrobras, including new frontiers such as the Equatorial Margin.

Meeting ODS 7 (SDG 7) has a profound impact on the Índice de Desenvolvimento Humano (IDH) (Human Development Index, HDI), as energy is directly linked to health, education, the environment, and income—areas that depend on its proper functioning. Between 2021 and July 2022, seven out of ten families had to forgo purchasing basic food items to cover their energy bills, and for 40% of people earning up to five minimum wages, more than half of their household income was spent on paying for energy. These are data from the Relatório Luz da Agenda 2030 (Agenda 2030 Spotlight Report), produced annually by civil society to monitor Brazil's progress (or lack thereof) in meeting the UN's established goals.

Worsening the situation, access to energy has yet to be universalized in the country. According to IEMA, nearly one million people in the Legal Amazon were without energy in 2019. These are isolated and remote communities still excluded from this basic and essential service, despite advances in programs aimed at universalizing access to energy.

For this reason, the organization has been contributing to discussions on Brazilian access to energy by producing studies that assess energy sources capable of ensuring this access from a

technical and socio-environmental perspective. The Institute's goal is to understand the technical, regulatory, economic, social, and environmental challenges related to public policies for the expansion of the interconnected energy system, as well as access to energy.

UNIVERSALIZING ACCESS TO ENERGY

With the groundbreaking study "Sistemas Fotovoltaicos na Amazônia Legal: avaliação e proposição de políticas públicas de universalização de energia elétrica e logística reversa" (Photovoltaic Systems in the Legal Amazon: Assessment and Proposal of Public Policies for Universalizing Energy and Reverse Logistics), launched in May 2023, IEMA found that up to 12 million photovoltaic system components need to be installed in the Legal Amazon to meet the Programa Mais Luz para a Amazônia (MLA) (More Light for the Amazon Program). Additionally, the study shows that 237,000 tons of waste generated by these systems, particularly related to batteries, must be properly disposed of.

More than three million components will be needed over the lifespan of these systems in the scenario involving the Sistema Individual de Geração de Energia Elétrica com Fonte

Intermitente (SIGFI) (Individual System for Generating Energy from an Intermittent Source) of 45 kWh/month with lithium-ion batteries, and 12 million components for the scenario with SIGFI of 180 kWh/month with lead-acid batteries.

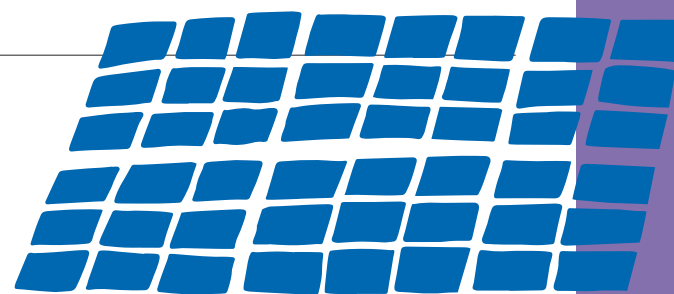
For the MLA to be implemented with minimal local impact, given that the components have a limited lifespan and batteries can pollute the environment or become flammable, as in the case of lithium-ion batteries, the study aimed to highlight the scale needed to serve the population and the reverse logistics that must be developed.

IEMA has made materials available to help understand the data presented in the study:

- An infographic summarizing the key information;
- A brochure outlining what is needed to universalize access to energy.

"Although Latin America is well-positioned in terms of natural resources for renewable energy production, only a few countries have followed a successful path in developing this sector; still below the International Energy Agency's projection to meet the climate commitments of the Paris Agreement"

Ricardo Baitelo, IEMA
Project Manager



The study's results conclude that the challenges in addressing these issues are significant, requiring greater involvement from equipment manufacturers, energy distributors, and public agencies.

Shortly after the study's release, around 250 people—including Indigenous leaders, quilombola communities, extractivists, representatives from four ministries, state governments, civil society, and researchers—gathered to exchange solutions and present issues regarding quality energy in isolated areas of the Legal Amazon.

This was the second meeting of the Rede Energia & Comunidades (Energy & Communities Network), a group of organizations committed to the full right to clean and sustainable energy. This time, the event was held in partnership with the Coordenação das Organizações Indígenas da Amazônia Brasileira (Coiab) (Coordination of Indigenous Organizations of the Brazilian Amazon), Federação dos Povos Indígenas do Pará (Fepipa) (Federation of Indigenous Peoples of Pará), Coordenação Nacional de Articulação de Quilombos (Conaq) (National Coordination of Quilombola Articulation), Malungo, and the Conselho Nacional das Populações Extrativistas (CNS) (National Council of Extractivist Populations).

The event, held in Belém (PA), also resulted in a document with the demands written by those without access to the right, which was presented

to the authorities in attendance and forwarded to the Agência Nacional de Energia Elétrica (Aneel) (National Electric Energy Agency), the Ministério de Minas e Energia (MME) (Ministry of Mines and Energy), the Ministério do Desenvolvimento Agrário e Agricultura Familiar (MDA) (Ministry of Agrarian Development and Family Agriculture), the Ministério do Desenvolvimento Social (MDS) (Ministry of Social Development), the Ministério da Integração e Desenvolvimento Regional (MIR) (Ministry of Regional Integration and Development), the Ministério do Meio Ambiente (MMA) (Ministry of Environment), the Banco Nacional de Desenvolvimento Econômico e Social (BNDES) (National Bank for Economic and Social Development), state governments of the Legal Amazon, energy distributors in the region, and other ministries related to the topic.

During the event, IEMA representatives participated in two discussion panels: “Solutions and Best Practices for Access to Energy and Energy as a Driver of Local Development” as a speaker, and “Coordination and Cross-Sector Collaboration

with Federal Development Programs and Poverty Reduction, Productive Uses of Energy” as a moderator. Additionally, the team was part of the event’s organization.

In the second half of the year, IEMA’s team also held meetings with decision-makers regarding the universalization of access to energy and its use for socio biodiversity activities in the Legal Amazon. Among them were meetings at the “Pró-Amazônia Legal” steering committee, a workshop on integration and planning organized by the Ministério de Minas e Energia (Ministry of Mines and Energy) in Brasília, a seminar for the Ministério do Desenvolvimento da Indústria, Comércio e Serviços (MDIC) (Ministry of Development, Industry, Commerce, and Services) to present the solar energy and battery supply chain for the universalization of access to energy in the Legal Amazon, as well as meetings with the Câmara de Comercialização de Energia Elétrica (CCEE) (Electric Energy Commercialization Chamber) and the Empresa de Planejamento Energético (EPE) (Energy Research Company) regarding isolated energy systems (SISOL).

In the context of universalization, IEMA contributed to the following public consultations:

PODCAST

🔊 In addition to being part of the organization of the second meeting of the network, throughout the year, IEMA participated in editorial meetings and promoted the radio show and podcast produced in partnership with the Rede de Notícias da Amazônia (Amazon News Network): the “Programa Energia e Comunidades” (Energy and Communities Program).

IEMA, representing the Clean Energy Coalition, participated in the official COP 28 side event "Delay or Accelerate the End of the World? The Threat of Oil and Gas" in Dubai.




Press photo/ IEMA

- Superintendência do Desenvolvimento da Amazônia (Sudam) (Superintendence of the Amazon Development);
- Conta de Desenvolvimento Energético (CDE) (Energy Development Account) of the Programa Luz para Todos (Light for All Program).


UNIVERSALIZATION AT COP 28

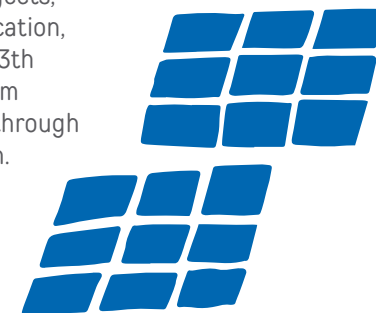
Furthermore, the Institute launched the technical note “Análise dos recursos disponíveis e necessários para universalizar o acesso à energia elétrica na Amazônia Legal” (Analysis of Available and Necessary Resources to Universalize Access to Energy in the Legal Amazon) during the 28th edition of the Conferência das Partes (Conference of the Parties, COP 28) on climate change of the United Nations (UN) in Dubai, United Arab Emirates. The data presented showed the number of equipment and financial resources needed to universalize access to energy in these remote areas using photovoltaic systems. It is estimated that an investment of between R\$ 7.2 and 38 billion is needed to achieve the goal set by the Programa Luz para Todos (LpT) (Light for All Program) to provide energy to nearly one million people in the region.

PUBLIC HEARING

 In May 2023, the Committee on Mines and Energy of the Federal House of Representatives held a debate on the Energy Transition in Brazil in the format of a public hearing. The event included participation from André Luis Ferreira, IEMA’s executive director, and other representatives from civil society organizations and associations involved in the topic.

INDIGENOUS PEOPLES

 The Instituto Socioambiental (ISA) (Socio-environmental Institute) launched the book “Povos Indígenas no Brasil 2017-2022” (Indigenous Peoples in Brazil 2017-2022) in March 2023, containing information on the Indigenous peoples living in Brazilian territory. The articles in the book cover topics such as Indigenous policies and associations, legislation, Indigenous territories, management, territorial and environmental protection, pressures and threats posed by large infrastructure projects, economic and political development, education, public health, culture, and heritage. The 13th edition of the book included a chapter from IEMA’s team on access to quality energy through photovoltaic systems in the Legal Amazon.



Approximately 226,000 consumer units, including households, schools, and community centers, are expected to benefit from energy in the Legal Amazon by 2028. This supply will be exclusively from solar photovoltaic energy. The estimated average cost per consumer unit is R\$ 47,000 for SIGFI 45 kWh/month and R\$ 142,000 for SIGFI 180 kWh/month.

The study is part of IEMA's effort to contribute to the universalization of access to quality, public, and renewable energy for those still living without this resource in the Legal Amazon.

THERMAL POWER PLANTS

Continuing the series of inventories that the organization has been producing on thermal power plants, IEMA launched the “3º Inventário de emissões atmosféricas em usinas termelétricas” (3rd Inventory of Atmospheric Emissions in Thermal Power Plants) in October 2023. The inventory found that the emission of 72 fossil thermal power plants connected to the Sistema Interligado Nacional (SIN) (National Interconnected System) was 19.5 million tons of carbon dioxide equivalent (CO₂e) in 2022. The thermal power generation from the inventoried plants totaled 31.1 TWh in 2022. In 2021, this figure was 95.7 TWh, representing a 67%

decrease. This reduction reflects favorable climatic conditions for hydropower generation following the water crisis, as well as the growth of wind and solar sources. Despite this reduction, national demand for energy increased by 3% from 2021 to 2022. The publication organizes these data into rankings of emissions from fossil thermal power plants, as well as their respective owners.

Released annually, this study provides information on operating thermal power plants in the country, including the types of fuels used, the technologies adopted, and the potential atmospheric emissions associated with these plants. The increase in the operation and contracting of fossil fuel thermal power plants leads to an increase in greenhouse gasses and pollutant emissions. The detailed compilation of data allowed for a better understanding of the environmental impacts of thermal power plants in the context of energy generation.

The first “Inventário de emissões atmosféricas em usinas termelétricas” (Inventory of Atmospheric Emissions in Thermal Power Plants) was launched in 2022 and consolidated a database of 72 plants across the country. The second inventory covered fossil fuel plants that supplied energy to the Sistema Interligado Nacional (SIN) (National Interconnected System) in 2020 and 2021. The third



Vinicius Oliveira, from IEMA, during a presentation for BNDES.

edition analyzes energy generation, GHG emissions, and air pollutants from public service and self-producing thermal power plants—plants attached to industries to mainly meet their own energy demands—that supplied energy to the SIN in 2022.

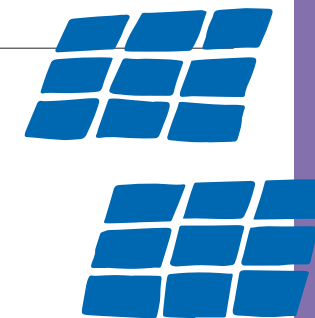
CLEAN ENERGY COALITION

Highly active in network actions of civil society on the topics it works on, IEMA participates in the Coalizão Energia Limpa – transição justa e livre do gás (Clean Energy Coalition – Fair Gas Free Transition), a Brazilian group of civil society organizations committed to advocating for a socially just and environmentally sustainable energy transition in Brazil. Among the work developed,

IEMA facilitates and is part of the executive coordination, promotes the joint development process of the network’s strategic objectives, such as reversing the contract for termelétricas-jabuti (piggyback thermal power plants, 8 GW) included in the text of the privatization of Eletrobras (Lei nº 14.182) and the non-contracting of inflexible thermal power plants, and provides operational support for the functioning of the Coalition.

Two years after the privatization of Eletrobras (Lei nº 14.182, de 2021), IEMA published a technical note in September 2023, highlighting the growth of wind and solar energy and their capacity to replace the energy that would have been contracted by the termelétricas-jabuti.

Regarding the Coalizão Energia Limpa, IEMA also contributed to the strategic communication planning and the launch of the report “Vulnerabilidade do setor elétrico brasileiro frente à crise climática global e propostas de adaptação” (Vulnerability of the Brazilian Energy Sector to the Global Climate Crisis and Adaptation Proposals), which reviewed recent scientific findings. The research revealed that Brazil still lacks a concrete policy to address the impacts of climate change on its energy system. By not properly addressing the reduction in rainfall volumes that affect hydropower generation, planners are forced to take emergency



measures, such as contracting thermal power plants, which increase costs and pollute the energy matrix.

In the Coalizão Energia Limpa, IEMA remained engaged and active in various discussion arenas, including the National Congress, the executive branch, climate conferences, social media, and supporting other partners in the effort to create effective impacts for a just energy transition. There were six workshops addressing the topic within society and the political environment, and six technical works produced, including studies, press releases, notes, and reports. At COP 28, under IEMA's coordination, the Coalition participated in side events such as “Adiar ou acelerar o fim do mundo? A ameaça do petróleo e do gás na Amazônia” (Postponing or Accelerating the End of the World? The Threat of Oil and Gas in the Amazon) and “Transição Energética Justa na Amazônia” (Fair Energy Transition in the Amazon).

IEMA has also led the institutional development of the Coalition, acting in the executive coordination, conducting facilitation, and leading the technical group. A series of improvements were implemented, elevating the organizational maturity of the network, such as the creation and implementation of governance and the development of initiative management techniques.

By organizing and facilitating all interactions among the organizations that are part of the

Coalizão Energia Limpa, IEMA created and promoted various communication channels and opportunities for exchanges and joint project work. Working groups, thematic meetings, and workshops were organized and facilitated by IEMA. The setting of agendas and the conduct of general meetings and coordination meetings highlight IEMA's leadership role in driving cooperation among organizations.

GOVERNMENT MEETINGS

Expanding its reach in the field of energy and democratic access, IEMA held dozens of meetings with state representatives and ministries (Ministério de Minas e Energia – Ministry of Mines and Energy; Ministério do Desenvolvimento Agrário e Agricultura Familiar – Ministry of Agrarian Development and Family Agriculture; Ministério do Desenvolvimento, Indústria, Comércio e Serviços – Ministry of Development, Industry, Commerce, and Services; Ministério do Meio Ambiente e Mudança do Clima – Ministry of Environment and Climate Change), development banks (Banco Nacional de Desenvolvimento Econômico e Social – BNDES and Superintendência do Desenvolvimento da Amazônia – Sudam), third-sector organizations, companies, research institutions (such as the



Instituto Brasileiro de Geografia e Estatística – IBGE), various state secretariats, universities, and productive associations in the states of the Legal Amazon. The goal was to discuss analyses and diagnostics of access to energy for residents, as well as for productive activities linked to socio biodiversity in the region.

From these meetings emerged proposals for technical cooperation agreements (ACT), invitations to present at seminars, and work meetings with state agents, resulting in the drafting of decrees, such as the one restructuring the Programa Luz para Todos (Light for All Program), and new public policies for social development.

There were also meetings with the Companhia de Desenvolvimento do Estado do Amazonas (CIAMA-AM) (Amazonas State Development Company) to establish a working group and organize a seminar with the state secretariats and municipalities to build and evaluate public policies for access to energy and regional development.

ARTICLES

📄 **“A verdadeira integração das fontes eólica e solar na matriz elétrica brasileira.”** The article published in Nexo Políticas Públicas addresses a discussion with specialists from the energy sector about the state of the art of Brazil's energy matrix for renewables, the prospects for their integration into the energy system, and solutions for storage and transmission networks. The event, promoted by the Instituto de Defesa de Consumidores (Idec) (Consumer Defense Institute) and IEMA, focused on how to balance the integration of solar and wind energy sources with the existing energy system, making it more resilient.

📄 **“Transição energética e seca.”** The publication in O Globo discusses energy exploitation in the Amazon, particularly hydropower plants. The course of rivers and the dynamics of flood and drought cycles have been altered by these installations. The next step for Brazil to decarbonize its energy generation through a fair transition is to improve the socio-environmental criteria for approving and installing these projects, which will soon share the spotlight with hydropower in Brazil's energy matrix, a sector highly vulnerable to extreme droughts and floods, which are becoming more frequent.

📄 The article **“Energia renovável para quem está no escuro na Amazônia”** (Renewable Energy for Those in the Dark in the Amazon), published in Le Monde Diplomatique in June 2023, discusses oil exploration in the Amazon River mouth for export, while people in the region spend days and nights in the dark. Nearly one million residents of Indigenous lands, quilombola territories, conservation units, or rural settlements remain without access to quality public energy in the Legal Amazon.

IN THE MEDIA

Sumaúma

Amazon Summit: society wants to halt oil, but in Brazil the trend is to explore more

Estadão

Accelerating the path toward clean mobility

Revista Veja

Red alert: Rio is the state champion in greenhouse gas emissions

Revista Piauí

A state in the dark

Portal Solar

Brazil could add 217 GW in solar and wind capacity by 2030

Jornal O Povo

Latin America is close to becoming a giant in renewable energy, says report

Canal Energia

Brazil had the world's largest drop in sector emissions in 2022, says study

Um só Planeta

How to overcome the reverse logistics and recycling challenges for solar panels and batteries in the Amazon, according to IEMA

Valor Econômico

Amazon has 990,000 people without access to energy, IEMA study shows

Projeto Colabora

The Amazon needs nearly two million solar panels for energy to reach everyone

EpBR

More Light for the Amazon: Solar panels, batteries, and what comes next

Nexo Jornal

How solar energy can expand energy access in the Amazon

Canal Energia

Legal Amazon will need 1.38 GW of solar energy by 2030, says IEMA

Portal Solar

More Light for the Amazon will require up to 12 million solar energy devices

Folha de S. Paulo

Climate crisis changes Brazil's energy production map

Le Monde Diplomatique

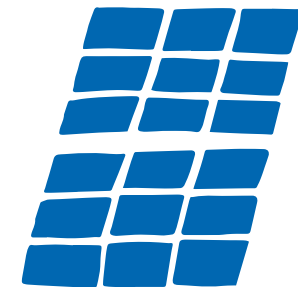
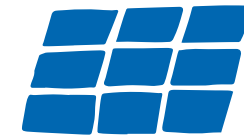
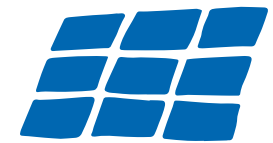
Renewable energy for those in the dark in the Amazon

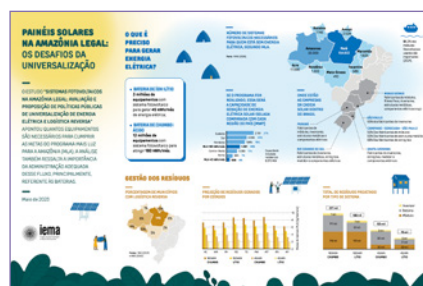
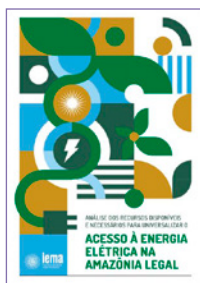
Agência Pública

Petrobras forecasts record oil production and may slow down emissions reduction







GloboNews

Program offers photovoltaic solar panels and promotes energy access for remote communities in the Amazon





PUBLICATIONS

- 
 Análise dos recursos disponíveis e necessários para universalizar o acesso à energia elétrica na Amazônia Legal (Analysis of Available and Necessary Resources to Universalize Access to Energy in the Legal Amazon)
- 
 3º Inventário de emissões atmosféricas em usinas termelétricas (3rd Inventory of Atmospheric Emissions in Thermal Power Plants)
- 
 Dois anos após Lei da Privatização da Eletrobras (Two Years After the Eletrobras Privatization Law)
- 
 Painéis solares na Amazônia Legal: desafios e responsabilidades (Solar Panels in the Legal Amazon: Challenges and Responsibilities)
- 
 Sistemas fotovoltaicos na Amazônia Legal: avaliação e proposição de políticas públicas de universalização de energia elétrica e logística reversa (Photovoltaic Systems in the Legal Amazon: Assessment and Proposal of Public Policies for Universalization of Energy and Reverse Logistics)
- 
 Painéis solares na Amazônia Legal: os desafios da universalização (Solar Panels in the Legal Amazon: The Challenges of Universalization)

RESULTS

SUGGESTED MEASURES TO BE TAKEN BY THE MINISTRY OF MINES AND ENERGY (MME)

IEMA suggests that the utilities, permit holders, and public service licensees for energy distribution operating in the Legal Amazon through the Programa Mais Luz para a Amazônia (More Light for the Amazon Program) be required to implement integrated management and solid waste management, including hazardous waste, in accordance with the responsibilities of solid waste generators as outlined in Lei nº 12.305/2010 (Law No. 12.305/2010) and regulated by Decreto nº 7.404/2010 (Decree No. 7.404/2010).

CLEAN ENERGY COALITION

In 2023, the Coalizão Energia Limpa (Clean Energy Coalition) established a network that strengthened dialogue and joint actions on public policies. The Coalition promoted discussions on gas and energy transition, delayed plans for termelétricas-jabuti (“piggyback” thermal power plants) auctions, and catalyzed the production and dissemination of technical knowledge. As a result, it consolidated itself as an important forum for cooperation and influence in the formulation of public policies and raising awareness about energy issues.

SPECIAL PROJECTS



Nareeta Martin/Unsplash

Brazilian greenhouse gas emissions have increased by 40% since 2010, when the country enacted the Política Nacional sobre Mudança do Clima (PNMC) (National Climate Change Policy). The “lost decade” in the fight against global warming is the theme of the [10th report on Brazilian emissions analysis by SEEG](#), the Sistema de Estimativas de Emissões e Remoções de Gases de Efeito Estufa (Greenhouse Gas Emissions and Removals Estimation System), coordinated by the Observatório do Clima (Climate Observatory), with IEMA’s participation.

In 2010, gross greenhouse gas emissions amounted to 1.7 billion tons. By 2021, they had risen to 2.4 billion tons. Brazil has fallen short of achieving the main goal of the PNMC, which was to reduce Amazon deforestation by 80%. Every sector of the economy saw an increase in emissions: waste (mainly trash and sewage) rose by 31%, industrial processes and product use by 13%, energy by 17%, and agriculture by 12% between 2010 and 2021.

In the energy sector, this period was marked by an intense “fossilization” of the energy matrix, with an increase in the number of fossil fuel thermal power plants, as well as greater diesel use in transportation.

However, not all is lost. The [11th edition of SEEG](#) showed that Brazil experienced an 8% reduction in gross greenhouse gas emissions in 2022. This decrease was driven by a reduction in Amazon deforestation in 2023 and abundant rainfall, which led to a record reduction in the activation of fossil fuel thermal power plants. As a result, the country’s emissions dropped from 2.5 billion tons of CO₂ equivalent (GtCO₂e) in 2021 to 2.3 GtCO₂e in 2022.

In the energy and industrial processes sectors, calculated by IEMA, the challenge remains to reduce the use of oil and its derivatives, and thus, the resulting carbon emissions. It’s worth noting that David Tsai, IEMA’s project manager, has been the SEEG coordinator since the end of 2022.

Brazil is the world’s sixth-largest climate polluter, responsible for 3% of global emissions, ranking behind China, the United States, India, Russia, and Indonesia. If the European Union were considered a single country, Brazil would become the seventh-largest emitter. As for states, SEEG’s latest analysis shows that in 2022, Mato Grosso (17.3% of the total) and Pará (15.6%) were the largest gross emitters, followed by Minas Gerais (7.3%), Rondônia (6.6%), and São Paulo (6.5%). When land use is excluded, São Paulo leads the ranking with 12% of emissions, followed by Minas Gerais (11%) and Mato Grosso (9%).

COP 28

For four years, IEMA has been present at the United Nations Climate Change Conferences (COP). The event brings nations together to discuss and reach agreements on tackling climate change. In 2023, the conference was held in Dubai, United Arab Emirates, with the mission of putting an end to fossil fuels on the agenda. The IEMA representatives at the event were David Tsai and Ricardo Baitelo, both project managers, and Isis Nóbile Diniz, who is

"The transparency of methods, assumptions, and sources of information are fundamental aspects for SEEG to contribute by providing rich and accurate information for society to think about public policies."

David Tsai, Project Manager at IEMA

responsible for the institution's communications. They spent around ten days debating and following climate discussions.

In addition to international and national meetings with government teams and third-sector organizations, IEMA participated in seven discussions, including debates at the "side event", the official UN presentation venue.

During the event, IEMA also launched the study titled "Análise dos recursos disponíveis e necessários para universalizar o acesso à energia

elétrica na Amazônia Legal" (Analysis of Available and Necessary Resources to Universalize Access to Energy in the Legal Amazon). The study estimates that between R\$ 7.2 and 38 billion are needed to bring energy to nearly one million people still living without power in the region. The Amazon, which will host COP 30, is one of the most significant examples of regions designated for natural resource exploitation for export while its resident population faces low income and precarious access to essential infrastructure, such as basic sanitation and energy. Below is a summary of each of these discussions.

David Tsai, from IEMA, during the presentation at the side event "Localizing Climate Action through Innovative Solutions and Community Engagement" at COP 28, in the United Arab Emirates.



Fernando Donasci



Ricardo Baitelo, from IEMA, during the panel "Just Transition: Political, Social, Technical, and Economic Pathways and Challenges", at the Brazil Pavilion.

Debates in which IEMA participated or promoted at COP 28

- A panel discussed the role of communities and technology in developing climate solutions. The event reinforced the importance of developing tools for energy transition.
- Amazônidas debated the need for clean energy inclusion. Solar energy generation can help combat energy poverty.

- Pan-Amazonian peoples advocate for a just and sustainable energy transition. Fossil fuel exploration needs to be discontinued in the region to reduce climate and socio-environmental impacts.
- Experts propose decentralizing energy planning. Building an inclusive climate governance must meet the demands of local populations.
- A fair energy transition will only occur with the leadership of Amazônidas. The presence of local communities in technical debates is crucial for creating an inclusive path.
- Emissions from fires have more than doubled in the Amazon since the 1990s. Greenhouse gas emissions from fires have increased in absolute numbers, even as overall emissions have declined.
- Latin American environmentalists advocate for energy diversity. Promoting sustainable models according to local resources represents a viable solution for decarbonization.

Positioning and Analysis


As is tradition, at the end of the Conference, IEMA published an [article](#) for the press, partners, on the organization's website, and social media profiles, analyzing the event, the discussions, and the official final text. The analysis focused on the organization's areas of action, such as energy and socio-environmental issues.

The article highlighted that the 28th UN Climate Conference (COP 28) recognized the need for a just transition from fossil fuels to renewable energy to avoid global warming above 1.5 °C. However, despite progress, the agreement includes elements that could prolong the use of fossil fuels, such as the use of fossil gas.

In other words, replacing the idea of "eliminating" fossil fuels with "transitioning" indicates progress, but also challenges. Brazil, for example, despite its commitment to zero deforestation and increasing renewables, faces criticism for its actions in oil exploration.

A fair energy transition must consider consumption inequalities, especially in regions like the Amazon, where infrastructure is limited. Thus, COP 30, which will take place in Brazil, will focus on these disparities, with local and global actions to reduce fossil fuel use.

PUBLICATIONS

 Análise das emissões de gases de efeito estufa e suas implicações para as metas climáticas do Brasil 1970–2022 (Analysis of Greenhouse Gas Emissions and Their Implications for Brazil's Climate Targets 1970–2022)



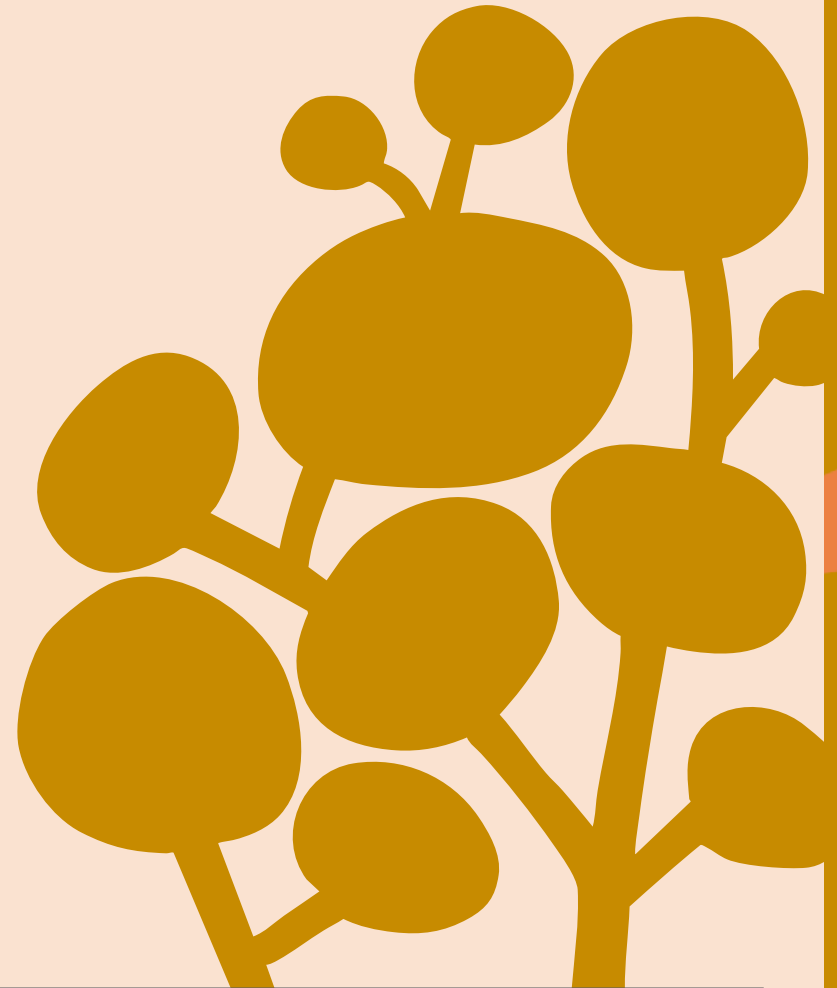
IN THE MEDIA

-  **O Eco**
Agency foresees emissions peak by 2025, but 1.5°C still out of reach
-  **Portal Terra**
Brazil's 10 best-selling cars together emit tons of CO2/km
-  **Spotify**
#143 Barbecue and global warming: totally connected, with David Tsai
-  **Folha de São Paulo**
Brazil's carbon emissions dropped by 8% in 2022, but the rate is still the 3rd highest since 200
-  **Portal G1**
Brazil's greenhouse gas emissions level dropped by 8% in 2022, report shows
-  **Revista Istoé**
After record, Brazil's emissions fell 8% in 2022
-  **Agência Pública**
COP28: Brazil's increased oil production could nullify gains from zero deforestation
-  **ClimaInfo**
Oil exploration in the Equatorial Margin would nullify climate gains from zero deforestation in the Amazon

RESULTS

COOPERATION AGREEMENTS SIGNED WITH BRAZILIAN STATES

The states of Rio de Janeiro, Alagoas, Bahia, São Paulo, and Goiás use SEEG data to report their emissions and guide their climate change policies. The agreement with Rio de Janeiro, for example, provides for the use "in whole or in part" of SEEG's data and analytical documents on the evolution of emissions in Rio and its municipalities. A similar agreement was signed with the government of Alagoas at the end of August. The first agreement of this kind was made in 2021 with São Paulo, the most populous state in the country.



INSTITUTIONAL DEVELOPMENT

To strengthen governance, management, and communication.
To promote the team's personal development



Rovena Rosa / Agência Brasil

The year 2023 marked a significant milestone for IEMA, consolidating its maturity in institutional development. The Institute continues to establish itself as a reference in the areas of energy, freight transportation, and infrastructure in Brazil, offering potential paths for collaboration in the country's development while providing significant data for air quality research. This involved numerous studies, articles, courses, recommendations, meetings with decision-makers and opinion leaders, analyses, and participation in events. In this way, IEMA positions itself as a think tank, operating both nationally and internationally.

In the area of governance, the organization reappointed two members of the Board of Directors and appointed two new members: Traci Rene Romine, former program officer at the Mott Foundation, and Arthur Oliveira Costa e Souza, who served as vice president of Concremat. The Institute also focused heavily on ongoing negotiations to secure funding, aiming to renew existing projects and make new initiatives possible.

In terms of management, the hiring of project analyst Rodrigo Pimenta to collaborate in the Coalizão Energia Limpa (Clean Energy Coalition), in which IEMA participates, was a key highlight, as well as the permanent appointment of intern Fábio Galdino to the role of project assistant in the energy

sector. Throughout the year, ongoing activities of the management group addressed institutional matters, with a special focus on revising the team's roles and responsibilities. Effective support was also provided for project development, always considering the technical and financial conditions.

The administrative and financial team is responsible for managing the institutional budget and all ongoing projects, ensuring transparency in accounting, which is communicated via the annual balance sheet, and overseeing the governance of the organization. They were instrumental in supporting project development, providing assistance to the technical team in hiring consultants, organizing trips and events, and monitoring the correct allocation of resources. This work includes the strict application of internal procurement and hiring guidelines, as well as compliance with specific guidelines established by funders.

Additionally, this team maintained communication with funders, handling interim and final project reports, as well as audits when required by the funder, providing project managers with monthly information on resource monitoring and activity deadlines.

They are also responsible for the organization's administrative management, which includes maintaining the office, service contracts, and

“This is an essential area for IEMA's success, as it deals directly with the funding for project execution with great transparency, commitment, and exemplary accountability, as well as providing all the administrative support the Institute needs in its daily work routines.”

Mônica Takeda,
Administrative and
Financial Manager of IEMA

to the organization becoming a reference in its field of work. It has played a strategic role by developing content production actions, managing relationships with the press, marketing, events, and public relations for the entity.

information technology management. Moreover, they oversee the human resources department, monitoring certifications and exemptions, ensuring compliance with internal processes and procedures, and fully supporting the executive director in the above-mentioned activities, including liaising with the governance secretary in communication with board members.

COMMUNICATION

The Communication area has been critical in helping IEMA achieve its institutional goals and objectives, increasingly contributing

Continuing the work that has already been developed, the routine of updating the website, social media, and other institutional channels has been maintained, allowing IEMA to keep society informed about its activities and updates. In 2023, new data metrics were adopted, such as tracking external events with team member participation, and the measurement of the impact of IEMA's actions and projects continued.

Regarding air quality, a special visual identity was created in 2023, which helped further highlight the work being developed and broadened the reach of key messages to the target audience. In terms of the universalization of access to energy, several partnerships were established throughout the year, which helped develop and improve this issue, with communication playing a fundamental role in expanding the impact of IEMA's actions. In the *Coalizão Energia Limpa* (Clean Energy Coalition), communication supported conversations with opinion leaders, helping position IEMA as a reference in clean energy.

From the end of the first half of the year, the focus also shifted toward improving the decision-making process in projects involving freight transportation, with communication playing a direct role in collaborative in-person and remote meetings with partners.

Communication also improved its event promotion and coverage practices during COP 28, presenting IEMA's participation with a specific visual identity for the occasion, generating more engagement with the conference topics and enhancing the Institute's recognition.

In addition, IEMA participated in training organized by the Global Gas & Oil Network (GGON) in Buenos Aires, Argentina, focusing on communication. GGON is one of the networks in which IEMA's communication team is involved, along with GT Gênero e Clima (Gender and Climate Working Group), Rede Energia & Comunidades (Energy & Communities Network), Coalizão Respirar (Breathe Coalition), Coalizão Energia Limpa (Clean Energy Coalition), and GT Infraestrutura e Justiça Socioambiental (Infrastructure and Socio-environmental Justice Working Group). IEMA's communication team also participates in Pacto pela Democracia (Democracy Pact), Advocacy HUB, Rede ComCiência (Science Communication Network), and Rede Narrativas (Narratives Network) as needed.

WORKSHOPS FOR JOURNALISTS


In June, Felipe Barcellos e Silva presented SEEG and how to use its data during his participation in the Congresso Internacional de Jornalismo Investigativo (International Congress of Investigative Journalism), organized by the Associação Brasileira de Jornalismo Investigativo (Abraji) (Brazilian Association of Investigative Journalism), to discuss climate change. The following month, also about SEEG and including the topic of "Air Quality," Felipe Barcellos e Silva and Helen Sousa presented two workshops for young journalists at Estadão, a major media outlet. The first workshop was titled "Climate Change and Greenhouse Gas Emissions" and the second "Atmospheric Pollution and Monitoring of Air Quality in Brazilian Cities."

Felipe Barcellos, from IEMA, during the congress at Abraji.




Press photo/ IEMA


PUBLICATIONS

 IEMA released a total of **11 publications**, **3** of which were translated into English and **4** produced in partnership with Observatório do Clima (SEEG) (Climate Observatory), Coalizão Energia Limpa (Clean Energy Coalition), and the Working Group on Infrastructure in Brazil. Additionally, the most recent IEMA Activity Report was published and translated.

MEDIA VISIBILITY (ARTICLES)

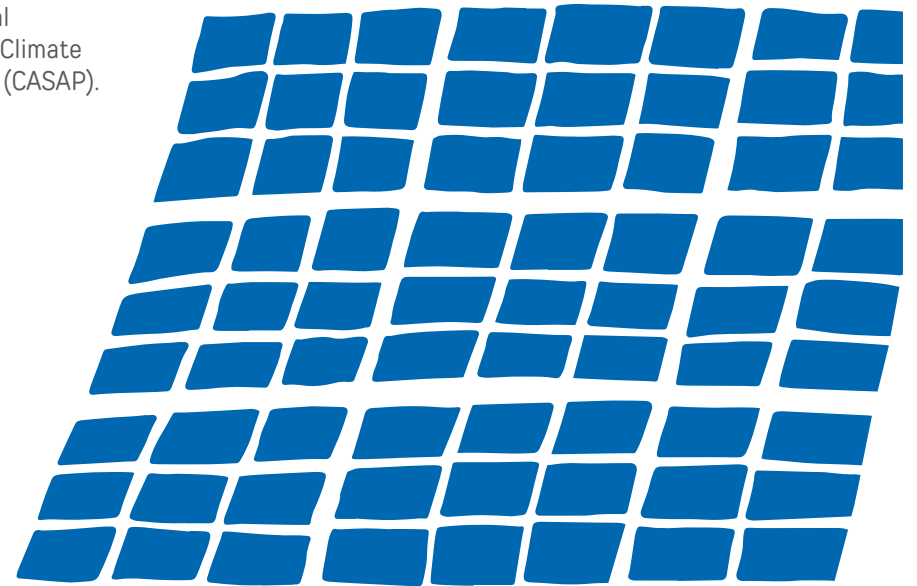
 A total of **4 opinion articles** were published in major opinion sections, one of which was about IEMA's positioning at COP 28, sent to the main media outlets. Other important topics, such as renewable energy transition for the Amazon, were also included.

EVENTS

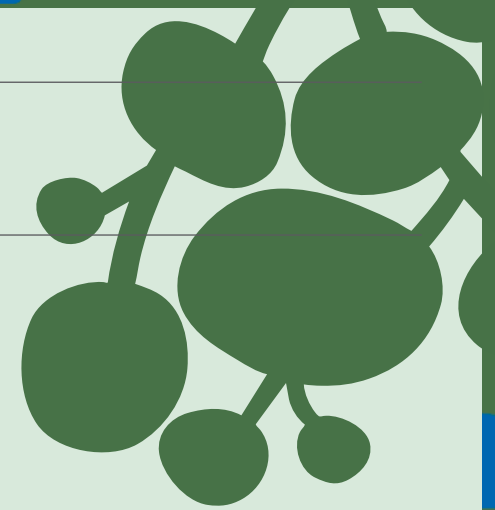
 In 2023, IEMA's team participated in **58 events**. In 2022, there were **39**, and in 2021, **49**. These included courses for journalists from major media outlets, meetings at the Tribunal de Contas da União (TCU) (Federal Audit Court), debates at the Câmara dos Deputados (House of Representatives), meetings with Ministries and the BNDES (National Bank for Economic and Social Development), and international events such as The Colombian Congress and International Conference on Air Quality, Climate Change, and Public Health (CASAP).

PRESS

 In 2023, media monitoring was categorized by theme. IEMA had **743 media articles**, interviews, and citations. The most cited areas were: **energy (267)**, **general institutional topics (179)**, **freight transportation (148)**, **air quality (76)**, **SEEG (45)**, and **urban mobility (24)**.



SUPPORTERS AND FINANCIAL INDICATORS



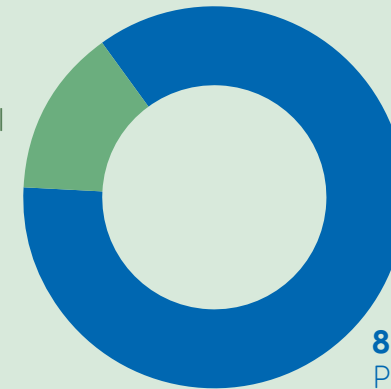
SUPPORTERS 2023

- Climate and Land Use Alliance (CLUA)
- Charles Stewart Mott Foundation
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- Energy Transition Fund (ETF)
- Fundação de Apoio à Universidade de São Paulo (FUSP)
- Instituto Clima e Sociedade (ICS)
- Observatório do Clima (LabOC)
- Oceana Brasil
- Sustainable Markets Foundation (GGON / SMF)

RESOURCE ALLOCATION 2023

Team	3.840.488
Third Parties	509.273
Travel / Conferences	200.613
Occupation / Infrastructure	137.957
General / Taxes	142.371
Total	4.830.701

14,3%
Operational



85,7%
Program content

BALANCE SHEET

December 31, 2023 and 2022 (in BRL)

ASSETS	2023	2022	LIABILITIES AND NET ASSETS	2023	2022
CURRENT			CURRENT		
Cash and cash equivalents	6.144.769	5.197.042	Suppliers	15.251	25.670
Prepaid expenses	-	214.149	Tax obligations	167.375	148.085
Other accounts receivable	2.041.193	57.933	Employment and social security obligations	379.277	322.695
	<u>8.185.962</u>	<u>5.469.124</u>	Advance donations	4.781.027	2.549.794
				<u>5.342.930</u>	<u>3.046.244</u>
NOT CIRCULANT			NET ASSETS		
Immobilized	66.782	83.328	Social Assets	2.460.583	2.475.731
	<u>66.782</u>	<u>83.328</u>	Investment donations	45.625	45.625
			Surpluses for the year	403.606	(15.148)
				<u>2.909.814</u>	<u>2.506.208</u>
Total	8.252.744	5.552.452	Total	8.252.744	5.552.452


STATEMENT OF INCOME


Years ended December 31, 2023* and 2022 (in BRL)

(*) The year 2023 was audited by Audisa Auditoria e Consultoria and is available on the [website](#).

OPERATING REVENUE	2023	2022
WITH RESTRICTION		
Donation revenue	4.898.083	3.891.477
UNRESTRICTED		
Service Provision	1.400	120.006
Other revenues	145	8.254
Voluntary donations	5.007	6.480
	<u>4.904.635</u>	<u>4.026.217</u>
PROJECT COSTS		
Personnel expenses	(3.614.737)	(3.163.898)
Contractors	(509.273)	(847.378)
Travel	(200.613)	(92.684)
General	(490.473)	(277.188)
Tax	(15.606)	(14.734)
	<u>(4.830.701)</u>	<u>(4.395.881)</u>
Gross operating surplus	73.934	(369.664)
OPERATIONAL EXPENSES		
Volunteer activities	(5.007)	(6.480)
General and administrative expenses	(26.475)	(19.890)
Depreciation	(16.546)	(17.338)
	<u>(48.028)</u>	<u>(43.708)</u>
Result before financial income and expenses	25.906	(413.372)
Financial expenses	(178.741)	(85.863)
Financial revenue	556.441	484.088
	<u>377.700</u>	<u>398.225</u>
Surplus for the period	403.606	(15.148)



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SUMMARY