# Industrial Solid Waste Management Plan 2026

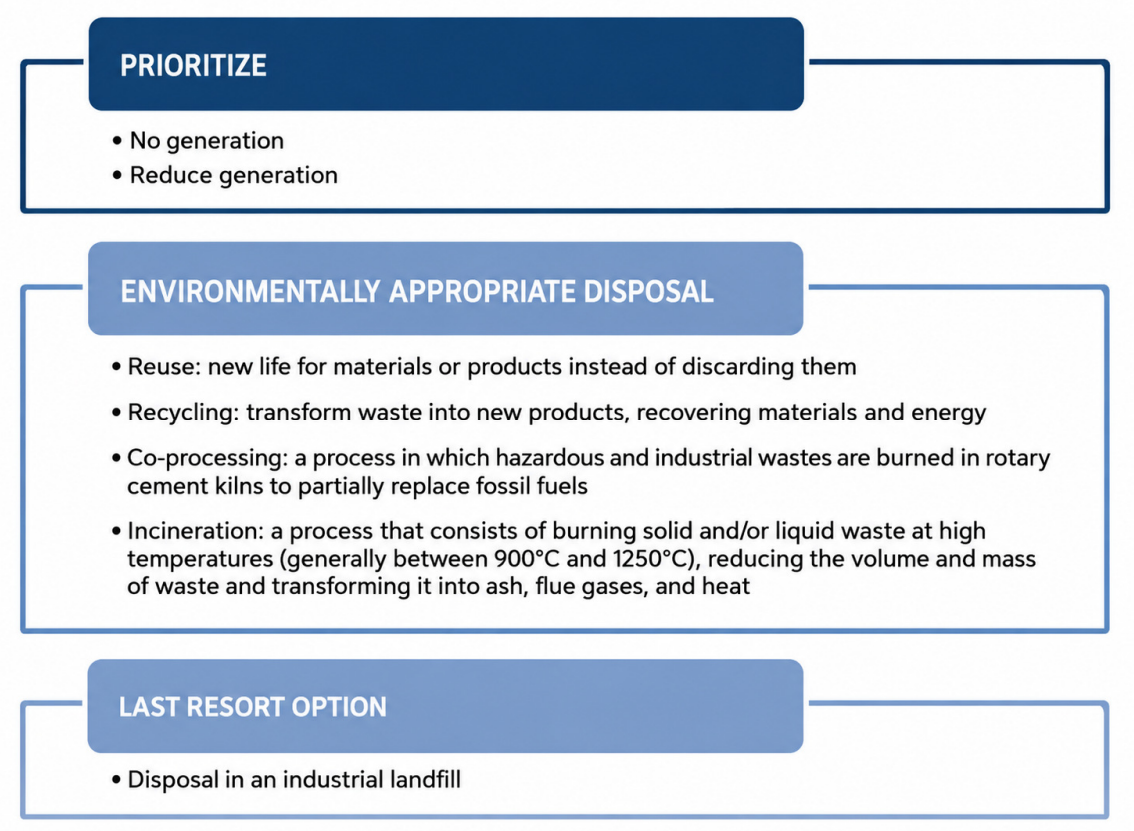
## 1. Introduction

Cemig has a waste management plan that encompasses the stages of identification, sorting, packaging, seeking opportunities for reuse and reduction, and final disposal, always with the aim of identifying opportunities to improve performance in this area

In accordance with the National Solid Waste Policy (PNRS), the Company maintains a structured system for collection, tracking, and environmentally sound final disposal, always striving to minimize impacts and maximize the reuse of materials.

Maintenance activities on distribution lines and networks account for the majority of waste generated, with oily waste and waste contaminated with mineral insulating oil constituting the largest portion of hazardous waste generated by the Company. As an action plan to reduce this impact, procedures are implemented to minimize oil leaks from equipment and to recycle insulating mineral oil, prioritizing its reuse after regeneration.

Prioritization model:



Stages of the waste management process:

| Compliance with legal requirements at all stages | | | | | |
|---|---|---|---|---|---|
| 1- Segregation: separation of waste | 2- Collection and conditioning | 3- Labeling | 4- Storage | 5- Transport | 6- Final disposal |

Proper storage:

Most of the waste generated by the Company has commercial value, which enhances its potential for return on investment within a circular economy framework. Materials such as scrap metal, cables, wires, and utility poles are carefully handled, stored, and transported to the Igarapé Advanced Distribution Center (CDA-IG), where they are prepared for final disposal.

Figure 1: Hazardous waste storage facility (Class I) - external view.

Figure 2: Hazardous waste storage facility (Class I) – internal view.

Figure 3: Non-hazardous waste storage area (metal scrap).


Figure 4: Non-hazardous waste storage area (metal scrap).

## Final disposal history

| Final disposal history **(t)** | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| Disposal, recycling, and reclamation, reuse, or decontamination (in tons) | **49.943** | **43.860** | **60.755** | **53.160** | **55.600** |
| Co-processing, Treatment (effluents and sludge), disposal in industrial landfills and incineration (in tons) | **201** | **103** | **142** | **400** | **909** |
| **Percentage of recycled waste** | **97,16** | **96,12** | **96,47** | **97,45** | **97,87** |
| Total | **50.144** | **43.963** | **60.897** | **53.560** | **56.509** |

***Additional information in the Annual Sustainability Report 2025, pages 118 to 121, available at the link: https://www.cemig.com.br/en/wp-content/uploads/sites/2/2026/05/ras-2025-en.pdf***

| **Total hazardous and non-hazardous waste generated (tons)** | | | | | |
|---|---|---|---|---|---|
| **Type** | **2022** | **2023** | **2024** | **2025** | **Meta 2025** |
| **Hazardous** | 1.098 | 1.030 | 400 | 909 | 965 |
| **Non-hazardous** | 42.865 | 59.867 | 53.160 | 55.600 | NA |
| **Total** | **43.963** | **60.897** | **53.560** | **56.509** | **NA** |

| **Disposal of Non-Hazardous Waste** | **2022** | **2023** | **2024** | **2025** |
|---|---|---|---|---|
| Total waste recycled/reused | 42.859,94 | 58.613,05 | 52.054,14 | 55600,63 |
| Total waste sent to landfills | 911,21 | 1253,90 | 1105,41 | 1204,27 |

**2025 Target =** 1273,64

**Disposal of non-hazardous waste in industrial landfills (intensity target)**

| **Year** | **2021** | **2022** | **2023** | **2024** | **2025** |
|---|---|---|---|---|---|
| Distribution lines and networks (km) | 558031 | 574844 | 570535 | 574606 | 588340 |
| Total non-hazardous waste disposal (landfill) | 1079,16 | 911,21 | 1253,9 | 1105,41 | 1204,27 |
| Intensity (tons per kilometer) | 0,00193 | 0,00159 | 0,00220 | 0,00192 | 0,00205 |

**2025 Target** = 0,00216ton/km ou 1273,64 ton

## 2. Action Plan to reduce waste generation

### 2.1. Actions that promote the circular economy:

The waste management process aims to reduce environmental impacts and prioritize initiatives aligned with the concept of the circular economy, thereby avoiding final disposal in industrial landfills.

Waste Reduction Initiatives and Strategic Goals

Cemig has set ambitious goals for waste management:

- **Reduction of non-hazardous waste sent to landfills:** A 5% reduction in the intensity (tons/km) of non-hazardous waste sent to landfills-calculated based on the length of distribution lines and networks-with 2023 as the base year and 2032 as the target year. In 2025, the target was achieved; we were 5% below the stipulated target (target = 1,273.64 tons).
- **Reduction of hazardous waste:** Cemig has set a target to reduce hazardous waste by 20% by 2030, based on the average amount of waste generated between 2021 and 2023 (1,044.08 tons). In 2025, the target was achieved; we were 1.63% below the target for the current year (965 tons).
- **Recycling and/or reuse:** As part of its ESG plan, Cemig has set a goal to recycle and/or reuse at least 98% of the industrial waste it generates by 2027. In 2025, we achieved a 97.8% recycling/reuse rate for waste.
- By 2028, work toward the environmentally sound and safe final disposal of equipment contaminated with PCBs or PCBs and raise employee awareness of the need to reduce waste generation.
- By 2028, conduct feasibility studies to expand the reuse of materials and/or equipment and reduce waste generation, with investment in innovation and the development of new solutions for the disposal of waste from the electrical system and pruning, with the aim of increasing recycling and gradually reducing landfill disposal.

### 2.2. Integration of Recycling Programs:

The integration of recycling initiatives into operational processes is a crucial factor in minimizing the volume of waste sent to landfills. Through these actions, Cemig achieved a recycling rate of 97.87% and sent only 2.13% of its waste to industrial

landfills by 2025. The adoption of the waste management hierarchy-prioritizing non-generation, reduction, reuse, recycling, and treatment before final disposal-contributes to the results achieved.

The key operational practices that enable this high performance include:

- **Source separation and standardized procedures:** Waste is sorted, identified, and separated at the source, ensuring it is properly routed for reuse, recycling, or treatment.
- **Reverse logistics and waste recovery:** The materials such as scrap metal, cables, wires, utility poles, and electrical equipment are sent for reuse and recycling-many of which have commercial value-thereby promoting their reintegration into the production chain.
- **Traceability and control systems:** Cemig monitors and controls waste streams to ensure proper disposal and environmental compliance.
- **Recycling and regeneration of hazardous waste:** Insulating mineral oils are regenerated for reuse or sent for re-refining, reducing environmental impacts and the need for raw materials.
- **Internal reuse initiatives:** Internal processes enable the reuse of materials, strengthening circularity in operations.

To achieve these goals, Cemig invests in innovative solutions, such as:

- **Oil Regeneration:** Cemig invests in oil regeneration, a process that enables the reuse of transformer oil, reducing the need for disposal and minimizing environmental impact.
- **Biodegradable Vegetable Oil Transformers:** Cemig replaces traditional transformers with models that use biodegradable vegetable oil. This innovative solution offers significant technical advantages: vegetable oil provides greater thermal stability, higher cooling capacity, lower environmental impact, and a much lower risk of fire. In addition, it significantly reduces environmental impact in the event of accidents, as vegetable oil decomposes naturally, preventing soil and water contamination. Recently, Cemig invested R$165 million in the installation of 17,200 new units of this type. Currently, the company operates tens of thousands of green transformers within its concession area and continues to replace older mineral oil-based equipment with these new models. The company has also established a target to acquire only sustainable technologies for its distribution network.

- **Transformer refurbishment:** This process involves refurbishing distribution transformers so they can be reused within the company, thereby reducing the need to purchase new transformers.

- **Compact Substations:** Cemig deploys compact substations that require less physical space and generate less waste during construction. This solution contributes to optimized land use, reduced environmental impacts, and shorter installation timelines.
- **Green Cables:** Another solution being piloted is a sustainable type of cable in the power distribution network in the Metropolitan Region of Belo Horizonte. The company has replaced approximately 300 meters of bare conductors with the so-called "Green Cables." These cables, produced from plant-based polyethylene derived from sugarcane, are more environmentally friendly than conventional petroleum-based alternatives.

Through the adoption of various waste treatment technologies, Cemig demonstrates its commitment to environmental preservation and sustainability. The company not only minimizes negative environmental impacts but also promotes resource reuse, fostering a circular economy. This effort is an integral part of Cemig's initiatives to ensure a more sustainable and balanced future, aligning its operations with environmental responsibility principles. In 2025, revenues totaling R$35,585,044.36 were generated from the sale of waste and other high-value recyclable materials, such as copper, iron, and aluminum.

## 2.3. Training and Engagement

Cemig also invests in training its employees in waste management:

- **Online Training:** The company offers an online training course on solid waste management through its Corporate University, focusing on employees' environmental performance both inside and outside the workplace (see cover below).
- **Procedure Instructions:** Cemig makes available on its corporate intranet a series of procedural guidelines that comprise the Corporate Waste Management Program, providing employees with guidance on proper waste management practices (see cover page below).

  In 2025, three in-person environmental emergency training sessions were held, with 217 participants.

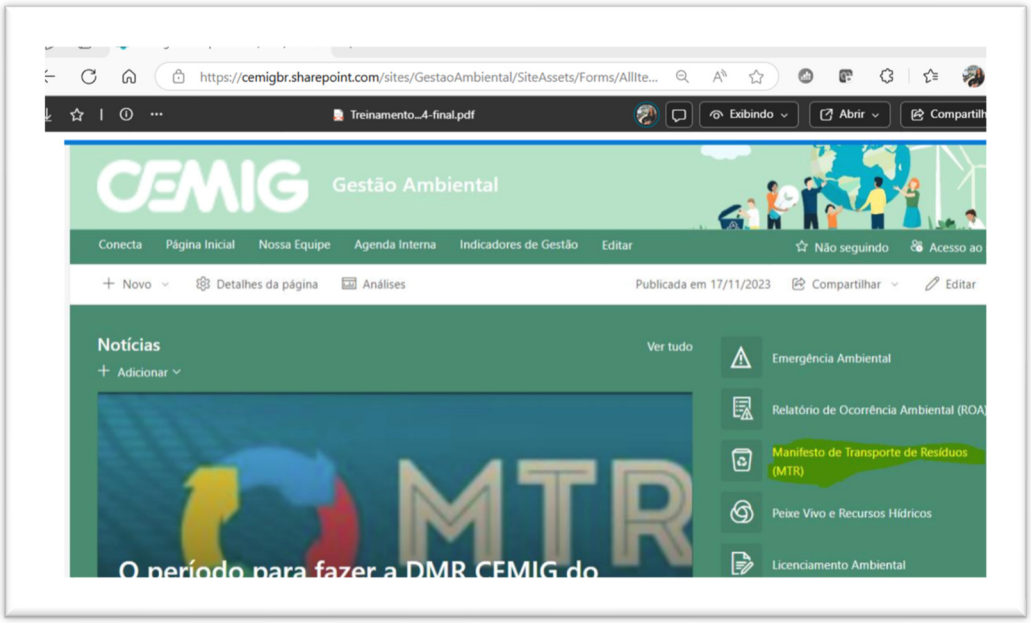
**Strengthening partnerships for success:**

- Best Suppliers Award: Every year, we hold the Best Suppliers Award, with a focus on ESG practices. Waste management is one of the key evaluation criteria, recognizing suppliers who are committed to:
    - Increase the recycling rate: seeking innovative solutions to repurpose materials, thereby reducing environmental impact.
    - Promote efficient use of resources: optimizing the use of materials and seeking reuse alternatives, generating benefits for both the environment and the economy.
    - Adopt sustainable practices: implementing measures that reduce waste generation and minimize the environmental impact of operations.

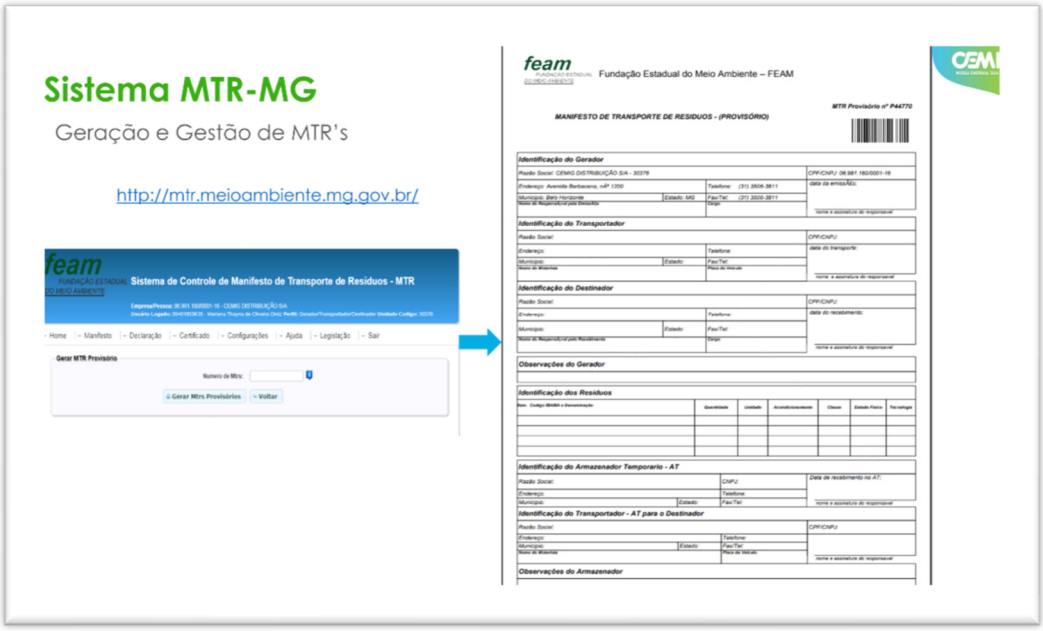
Training materials

**Waste Management Handbook, available at the following link:** cemig.com.br/wp-content/uploads/2021/11/cartilha-gerenciamento-de-residuos.pdf

**Training on the Hazardous Waste Transport Manifest (MTR) in January 2024**, available online.

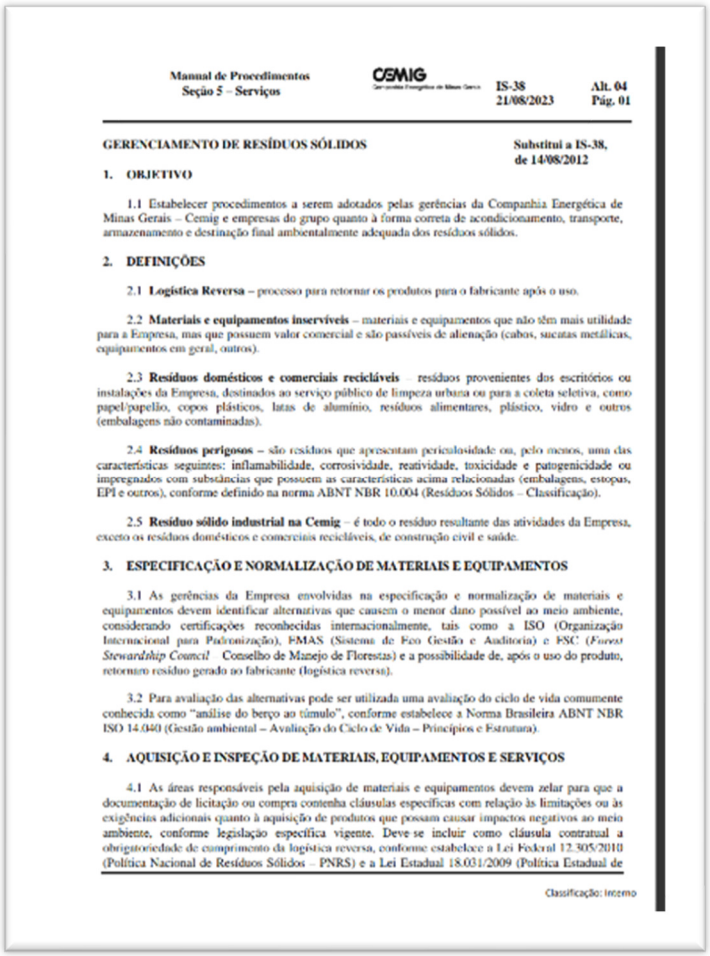



**MTR-MG System Website for inquiries**: [MTR - Sistema de Manifesto de Transporte de Resíduos]




## 2.4. Standards and Procedures

Service Instruction (IS-38): To establish procedures to be followed by the management of Companhia Energética de Minas Gerais (Cemig) and its group companies regarding the proper packaging, transportation, storage, and environmentally sound final disposal of solid waste.



Manual de Procedimentos
Seção 5 – Serviços

CEMIG

IS-38
21/08/2023

Alt. 04
Pág. 01

**GERENCIAMENTO DE RESÍDUOS SÓLIDOS**

**Substitui a IS-38, de 14/08/2012**

**1. OBJETIVO**

1.1 Estabelecer procedimentos a serem adotados pelas gerências da Companhia Energética de Minas Gerais – Cemig e empresas do grupo quanto à forma correta de acondicionamento, transporte, armazenamento e destinação final ambientalmente adequada dos resíduos sólidos.

**2. DEFINIÇÕES**

2.1 **Logística Reversa** – processo para retornar os produtos para o fabricante após o uso.

2.2 **Materiais e equipamentos inservíveis** – materiais e equipamentos que não têm mais utilidade para a Empresa, mas que possuem valor comercial e são passíveis de alienação (cabos, sucatas metálicas, equipamentos em geral, outros).

2.3 **Resíduos domésticos e comerciais recicláveis** – resíduos provenientes dos escritórios ou instalações da Empresa, destinados ao serviço público de limpeza urbana ou para a coleta seletiva, como papel/papelão, copos plásticos, latas de alumínio, resíduos alimentares, plástico, vidro e outros (embalagens não contaminadas).

2.4 **Resíduos perigosos** – são resíduos que apresentam periculosidade ou, pelo menos, uma das características seguintes: inflamabilidade, corrosividade, reatividade, toxicidade e patogenicidade ou impregnados com substâncias que possuem as características acima relacionadas (embalagens, estopas, EPI e outros), conforme definido na norma ABNT NBR 10.004 (Resíduos Sólidos – Classificação).

2.5 **Resíduo sólido industrial na Cemig** – é todo o resíduo resultante das atividades da Empresa, exceto os resíduos domésticos e comerciais recicláveis, de construção civil e saúde.

**3. ESPECIFICAÇÃO E NORMALIZAÇÃO DE MATERIAIS E EQUIPAMENTOS**

3.1 As gerências da Empresa envolvidas na especificação e normalização de materiais e equipamentos devem identificar alternativas que causem o menor dano possível ao meio ambiente, considerando certificações reconhecidas internacionalmente, tais como a ISO (Organização Internacional para Padronização), FMAS (Sistema de Eco Gestão e Auditoria) e FSC (*Forest Stewardship Council* – Conselho de Manejo de Florestas) e a possibilidade de, após o uso do produto, retornarem resíduo gerado ao fabricante (logística reversa).

3.2 Para avaliação das alternativas pode ser utilizada uma avaliação do ciclo de vida comumente conhecida como "análise do berço ao túmulo", conforme estabelece a Norma Brasileira ABNT NBR ISO 14.040 (Gestão ambiental – Avaliação do Ciclo de Vida – Princípios e Estrutura).

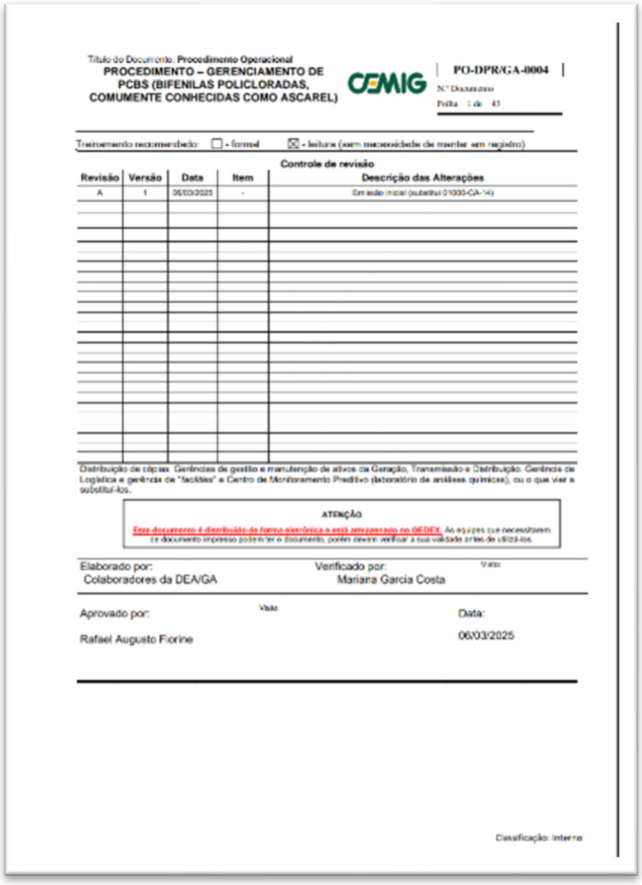
**4. AQUISIÇÃO E INSPEÇÃO DE MATERIAIS, EQUIPAMENTOS E SERVIÇOS**

4.1 As áreas responsáveis pela aquisição de materiais e equipamentos devem zelar para que a documentação de licitação ou compra contenha cláusulas específicas com relação às limitações ou às exigências adicionais quanto à aquisição de produtos que possam causar impactos negativos ao meio ambiente, conforme legislação específica vigente. Deve-se incluir como cláusula contratual a obrigatoriedade de cumprimento da logística reversa, conforme estabelece a Lei Federal 12.305/2010 (Política Nacional de Resíduos Sólidos – PNRS) e a Lei Estadual 18.031/2009 (Política Estadual de

Classificação: Interno

Procedure: Management of PCBs (Polychlorinated Biphenyls)

Establishes criteria for operations involving the handling, packaging, storage, transportation, final disposal, and emergency response procedures associated with equipment, materials, fluids, and waste containing PCB concentrations equal to or greater than 50 mg/kg, or concentrations exceeding 100 µg (one hundred micrograms) of total PCBs per dm² (square decimeter) of impermeable surface, hereinafter referred to as PCB-contaminated materials, PCB, or Ascarel. The standard also addresses contamination prevention aspects and, where applicable, applies to insulating oils and fluids containing PCB concentrations below 50 mg/kg (non-PCB or PCB-free.



Título do Documento: Procedimento Operacional
PROCEDIMENTO – GERENCIAMENTO DE PCBS (BIFENILAS POLICLORADAS, COMUMENTE CONHECIDAS COMO ASCAREL)
CEMIG | PO-DPR/GA-0004 |
Nº Documento
Folha 1 de 43

Treinamento recomendado: ☐ - formal ☒ - leitura (sem necessidade de manter um registro)

Controle de revisão

| Revisão | Versão | Data | Item | Descrição das Alterações |
|---|---|---|---|---|
| A | 1 | 06/03/2025 | - | Emissão inicial (substitui 01000-GA-14) |

Distribuição de cópias: Gerências de gestão e manutenção de ativos da Geração, Transmissão e Distribuição, Gerência de Logística e gerência de "facilities" e Centro de Monitoramento Preditivo (laboratório de análises químicas), ou o que vier a substituí-los.

ATENÇÃO

Este documento é distribuído de forma eletrônica e está armazenado no GEDEX. As equipes que necessitarem de documento impresso podem ler o documento, porém devem verificar a sua validade antes de utilizá-los.

Elaborado por: Colaboradores da DEA/GA
Verificado por: Mariana Garcia Costa
Visto:
Aprovado por: Rafael Augusto Fiorine
Visto:
Data: 06/03/2025

Classificação: Interno

## 3. Environmental Education

The Corporate Environmental Education Program (ECOCIENTE), established in 2024, aims to educate and raise awareness among both internal and external audiences, playing a role in influencing society and its employees. The priority themes are: conservation of fauna, flora, and water resources, as well as waste management. These efforts are carried out through monitoring, rescue and recovery, and land restoration and vegetation rehabilitation programs, and also include numerous Research and Development projects conducted in partnership with public and private institutions. The primary purpose of all these activities is to develop effective strategies to prevent, reduce, mitigate, or offset environmental damage inherent in any production process, such as the generation, transmission, and distribution of energy.(Cemig)

During 2025, 51 initiatives were carried out (including 37 external events, two seedling donation initiatives, one booklet donation initiative, and 11 internal events) in 16 different municipalities (Divinópolis, Uberaba, Uberlândia, Campestre, Pouso Alegre, Contagem, Belo Horizonte, Santa Luzia, Lavras, São Gonçalo do Rio Abaixo, Quartel

Geral, Cachoeira Dourada, Ibirité, Varginha, Ijaci, Diamantina) within the scope of EcoCiente, reaching 7,475 people. In 2025, 3,451 seedlings provided by EcoCiente were donated and/or planted as part of its activities, in addition to the distribution of more than 3,739 booklets, taking into account that this distribution was not accounted for at some events.

*Source: Ecociente Reports: Educação Ambiental - Cemig*