

#### STRENGTHENING OUR OCCUPATIONAL SAFETY AND HEALTH CULTURE: A SUCCESS STORY IN THE IMPLEMENTATION OF VISION ZERO AT GRUPO ENERGÍA BOGOTÁ AND ITS AFFILIATES IN COLOMBIA, PERU, AND GUATEMALA.

#### Ivan Mauricio Puentes Arango

Industrial Engineer – MBA – MSc. SO&A - Candidate for a Master's Degree in Energy Management Occupational Safety and Health Management Talent Management Department Vice-Presidency of GT and Sourcing

Bogotá D.C. May 28, 2023

Sede principal Carrera 9 # 73-44 Sede calle 71 - Carrera 7 # 71-21 Bloque B piso 18 (57) 1 3268 000 grupoenergiabogota.com Bogota D.C - Colombia



#### STRENGTHENING OUR OCCUPATIONAL SAFETY AND HEALTH CULTURE: A SUCCESS STORY IN THE IMPLEMENTATION OF VISION ZERO AT GRUPO ENERGÍA BOGOTÁ AND ITS AFFILIATES IN COLOMBIA, PERU, AND GUATEMALA.

#### <u>Summary</u>

For Grupo Energia Bogotá (GEB), safeguarding the lives and safety of its employees and contractors is the top priority, embodied in our Corporate Value - **'Life Comes First.'** To fulfill this commitment, GEB has set long-term objectives (for 2025) and yearly goals aimed at tracking performance in occupational health and safety, with a unique focus on proactive performance indicators in Occupational Safety and Health (leading indicators).

We are pleased to emphasize that, since the redefinition of our Corporate Strategic Plan in 2016, GEB has seen a notable expansion in the number of new asset construction projects, particularly in the transmission business (substations, lines, and transmission towers). This has led to significant operational impacts, such as a 700% increase in the number of hours worked (by both direct personnel and contractors), and geographic dispersion for the growth projects' development, including high-risk tasks which unfortunately resulted in serious and/or high-potential accidents between 2017 and early 2018.

Given this backdrop and with the aim of sustainably reducing accident occurrences that affect people, the company recognized the need to implement a plan to **Strengthen the Occupational Safety and Health Culture**. Extensive external referencing led us to identify the **VISION ZERO** model, developed by the International Social Security Association (ISSA), as the most suitable option to implement world-class best practices within its seven golden rules framework and as the initial step toward realizing a vision of zero accidents.

Following over two years of the priority risk mitigation phase and subsequently, three years of implementing this VISION ZERO model in GEB and its subsidiaries in Colombia, Peru, and Guatemala, we celebrate significant results and important early victories. These include achieving zero fatal accidents in our operations over the past five years, a considerable reduction in the accident



rate (68% in work-related accidents resulting in time lost), thus actualizing one of GEB's proudest accomplishments - ensuring that all our employees return home safe and sound after each workday.

#### Justification

Since the formulation and execution of the 2016 Corporate Strategic Plan, Grupo Energía Bogotá has seen a massive surge in construction projects. Specifically, the transmission business in Colombia experienced this growth, with the creation of new electric power transmission assets (transmission lines and substations). This growth has led to significant operational impacts outlined as follows:

- Over a 700% increase in the number of contractors and man-hours worked compared to 2015.
- Geographic dispersion in the execution of growth projects, involving jobs that include high-risk tasks.
- Incidence of serious and/or high potential work-related accidents.
- An Occupational Safety and Health (OSH) management system was in its implementation phase, lacking priority practices, and resulting in a low maturity level of the company's Safety Culture.

In this context, and with a goal of sustainably reducing accidents that affect people, assets, and the environment, we recognized the need to fortify our Occupational Safety and Health culture. This led us to the VISION ZERO model developed by the ISSA, setting us on a path to realize the vision of zero accidents and meet GEB's self-imposed objectives concerning occupational safety and health.

Beyond this, the accident rate figures for Colombia's electric sector are far from satisfactory, indicating significant opportunities for improvement, especially for short-term reduction of serious and fatal accidents. According to data from the Occupational Safety and Health Observatory of the Colombian Safety Council, the electricity sector has consistently been among the top three sectors with the highest mortality rate due to occupational accidents in recent years.



#### **Occupational Accident Rates by Economic Sector** Agriculture, Livestock, Hunting and Foresty Mines and quarter Mines and qua

accidents per 100 workers here, followed by the **mining and quarrying sector** with a rate of **12.79** accidents per 100 workers

Graph 1. TA rate by economic sectors 2019. Source: OSH Observatory - CCS. Available at <u>https://ccs.org.co/atel-col-2019/</u>



Graph 2. Occupational Fatality Rate by Economic Sectors 2020. Source: OSH Observatory – CCS. Available at <a href="https://ccs.org.co/atel-col-2020/">https://ccs.org.co/atel-col-2020/</a>

Social and Health Service

Trade

Real estate Extraterritorial Bodies

> Education Domestic servico Financia

nsport, storage and communication

Public Administration and Defense



On a global scale, occupational accidents remain one of the leading causes of death, with an estimated economic impact of roughly 4% of the world's GDP. These figures come from the World Health Organization (WHO):

Every day people die due to occupational accidents or work-related diseases – more than 2.78 million deaths per year. Furthermore, around 374 million nonfatal work-related injuries occur annually, resulting in over 4 days of absenteeism. The economic burden of poor safety and health practices equates to 3.94 percent of global Gross Domestic Product each year.

The ILO aims to elevate global awareness of the scale and consequences of work-related accidents, injuries, and diseases to stimulate and support practical action at all levels.

#### "Decent work is safe work".

According to ILO Director-General Guy Ryder, "the right to a safe and healthy workplace is a fundamental human right, a right that must be respected at all levels of development and in various economic conditions. Respect for this human right is not only an obligation but also a precondition for sustainable economic development. Prevention is feasible, necessary, and cost-effective."

Risk prevention investments have yielded extraordinary socio-economic benefits, says International Social Security Association President Errol Frank Stoové, citing a recent ISSA study. It estimates that returns on prevention investments average more than double the initial investment.

"Vision Zero is not a concept that disregards reality and difficulties. It is feasible", this is the position of Joachim Breuer, CEO of the German Social Insurance for Accidents at Work (DGUV)..."<sup>2</sup>.

According to a study conducted by the ISSA, "work accidents and occupational diseases are not inevitable; they always have causes. By

<sup>&</sup>lt;sup>1</sup> Retrieved March 22, 2020, from <u>https://www.ilo.org/global/topics/safety-and-health-at-work/lang--es/index.htm</u>

<sup>&</sup>lt;sup>2</sup> Retrieved March 22, 2020, from https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS\_301241/lang--es/index.htm



cultivating a strong culture of prevention, these causes can be eradicated and work-related accidents, injuries, and occupational diseases can be avoided.

ISSA states, "Aside from being a legal and moral obligation, safe and healthy working conditions are also cost-effective. Investments in occupational safety and health prevent human suffering and protect our most precious asset: our health, and our physical and psychological integrity<sup>3</sup>."

Moreover, it's vital to have clear priorities for intervention. A reduction in the overall frequency rate does not necessarily correlate with a decrease in serious or fatal accidents, which have a greater impact on individuals.

According to the French Institute of Industrial Safety Culture (ICSI), "reducing the frequency rate (Tf for the Spanish original) of work accidents does not guarantee the prevention of the most serious accidents. A better interpretation of Bird's pyramid illustrates the need to focus on the 'prevention diamond', i.e., actual serious events and those with high potential severity."

To do this, the institute suggests, "Company stakeholders need to agree on the risks of the most severe accidents: risks associated with procedures, work situations, professional activities, shared tasks, and the combination of these various aspects... Everyone's involvement is crucial to compile and update a list of situations where major accidents are possible."<sup>4</sup>.

According to the ICSI, it's crucial to direct resources towards the identification and treatment of events with high potential severity.

The prevalent belief that improving the Tf would ensure a decrease in severe events is derived from a misinterpretation of Bird's renowned pyramid. Since the pyramid represents a proportional relationship between the number of minor accidents (the base) and the number of serious events (the top), the

<sup>&</sup>lt;sup>3</sup> <u>http://visionzero.global/sites/default/files/2017-11/3-Vision%20Zero%20Guide-Web.pdf</u>

<sup>&</sup>lt;sup>4</sup> The essentials of the prevention of serious, fatal, and major technological accidents. Institute for a Culture of Industrial Safety - ICSI. Retrieved from: <u>https://www.icsi-eu.org/sites/default/files/2020-07/lcsi\_essentiel\_ES\_prevencion-accidentes-graves-mortales-technol%C3%B3gicos-mayores\_2019.pdf</u>



following has been interpreted: "There is a continuity of causes: if we halve the base of the pyramid, then we halve the most serious risks."



Graph 3. Focus on the Essentials: Prevent Major Serious, Fatal and Major Technological Accidents. Source: Institute for a Culture of Industrial Safety - ICSI. Retrieved from: <u>https://www.icsi-</u> <u>eu.org/sites/default/files/2020-07/Icsi\_essentiel\_ES\_prevencion-accidentes-graves-mortales-</u> <u>technol%C3%B3gicos-mayores\_2019.pdf</u>

**Thomas R. Krause**<sup>5</sup> defines a serious accident as an accident that results in an injury or illness with any of the following effects on the worker:

1. Life-threatening injury or illness: One that, if not immediately treated, is likely to result in the affected person's death and typically requires external

<sup>&</sup>lt;sup>5</sup> On the Prevention of Serious Injuries and Fatalities- Thomas R. Krause, Ph.D. Behavioral Science Technology, Inc. // Glenn Murray. Safety Programs Manager, Exxon Mobil Corporation



emergency response personnel to provide life support. Examples include, but are not limited to:

a. Significant blood loss due to lacerations or crush injuries.

b. Injuries involving damage to the brain or spinal cord.

c. Events necessitating the use of cardiopulmonary resuscitation or an external defibrillator.

- d. Chest or abdominal trauma affecting vital organs.
- e. Severe burns.

2. Life-altering injury or illness: This refers to conditions that lead to permanent or long-term impairment or loss of use of an internal organ, bodily function, or body part. Examples include, but are not limited to:

- a. Major head injury.
- b. Spinal cord injuries.
- c. Paralysis.
- d. Amputations.
- e. Broken or fractured bones.

Krause's study concludes that Bird's traditional pyramid is not an accurate predictor, and not all work events or accidents hold the potential to yield serious or fatal injuries. His research finds that about 21% of accidents that happen actually bear the potential to result in serious or fatal incidents.

This revelation establishes a new paradigm in the management of occupational safety and health, comprised of the following principles:

- Efforts should primarily target the prevention of serious injuries.
- Foster a robust safety culture.
- Encourage greater commitment from labor organizations to safety.
- Aim for lower rates of serious injuries.



Graph 4. Paradigm shift in the management of Serious Injuries or Fatalities (SIF). Extracted from On the Prevention of Serious Injuries and Fatalities- Thomas R. Krause, Ph.D. Behavioral Science Technology, Inc. // Glenn Murray. Safety Programs Manager, Exxon Mobil Corporation

Within this context, **Grupo Energía Bogotá**, in its pursuit to sustainably reduce the incidence of serious and fatal accidents, recognizes the need to design and implement a program of Cultural Transformation in Occupational Safety and Health. This initiative follows the VISION ZERO model and its seven golden rules, setting the stage to actualize the vision of zero accidents and achieve the Group's occupational safety and health objectives.

Hence, at GEB, we have identified a strategic objective: progressing in the consolidation of an OSH Culture in the company. The preservation of life is incorporated as a corporate value into the DNA of all Group subsidiaries. As the central axis of all our operations, we recognize the need to unfold this strategic initiative via a long-term project. This project encompasses the control of operational risks, diagnosis, design, and implementation of a Safety and Health Culture Improvement Program. Its purpose is to prevent workplace accidents and foster a culture of self-care among all employees. Incorporating best practices from the VISION ZERO model will enable us to progress on the Safety Culture scale. Our main aim is to sustainably reduce



the accident rate over time, and ultimately, to actualize the vision of zero accidents.

### **Objectives**

#### **General purpose**

Develop the required actions for the cultural transformation of Occupational Safety and Health in **Grupo Energía Bogotá and its subsidiaries**. This is done to achieve a level of maturity that will lead us to operational excellence based on safety and contribute to the actualization of the vision of zero accidents.

#### Specific purposes

- Address priority Occupational Safety and Health risks and create risk awareness for decision-making across all subsidiaries of **Grupo Energía Bogotá**.
- Conduct a diagnosis, define the intervention plan, and control critical risks to minimize the likelihood of serious and/or fatal occupational accidents.
- Determine and implement mitigation strategies on priority safety risks, aiming to decrease the incidence of serious and/or fatal accidents. In addition, create risk awareness among GEB's direct personnel and priority contractors.
- Design, implement, and roll out an Occupational Safety and Health Management Model based on the VISION ZERO prevention strategy and its seven golden rules.

#### Methodology

In order to fulfill the outlined objectives, we at **Grupo Energía Bogotá** have delineated an Occupational and Health strategy centered on securing the success of our cultural transformation. The strategy strives to build an Occupational Safety and Health Culture grounded on the implementation of a plan to mitigate priority risks in the short term (containment plan) and the development of a plan following world-class best practices under the **VISION** 



**ZERO** model. This approach enhances the company's operational excellence, thus generating value in the medium to long term.



Graph 5. GEB's Occupational Safety and Health Strategy. Self-drafted.

# Execution of the Priority Risk Mitigation phase

**The Priority Risk Mitigation phase** was devised with the new paradigm for managing serious and fatal accidents in mind, and included the following stages:

- 1. Diagnosis. Identify risks in critical operations.
- 2. Review existing control or mitigation systems and measures.
- 3. Determine actions to bring identified risks to an acceptable level.
- 4. Monitor short-term execution.
- 5. Prioritize actions and outline a roadmap.
- 6. Oversee performance.

### GrupoEnergíaBogotá



Graph 6. Priority Risk Mitigation Phase in GEB. Self-drafted.

#### **Evaluation and Diagnosis of the Priority Risk Mitigation Phase**

The first step involved a diagnosis of the Safety and Health at Work (OSH) management, through which the following priority risks were identified:

- Risk management delegated to OSH management, without the empowerment of project and operation leaders.
- High percentage of operational activities, including high-risk tasks, without effective controls.
- Deviation in the execution of tasks by contractors with risks of serious accidents.
- Potential recurrence of fatal accidents due to insufficient integration of our own and sector learnings.

#### **Project Planning Priority Risk Mitigation Phase**

To ensure impactful implementation of the containment actions, a work plan was designed around four reinforcement areas and training actions:

- 1. Strengthening of Leadership.
- 2. Strengthening of Contractors.
- 3. Strengthening OSH Function.



4. Incident learning.

Additionally, to ensure success in the development of the practices defined for each of the above axes, a Training Plan was defined to generate and/or strengthen the capabilities of the senior management and Occupational Safety and Health team of Enlaza, a subsidiary of GEB in charge of building the electric power transmission projects and managing the assets in operation:

- a. Behavioral observation.
- b. Incident investigation and analysis.
- c. Foster risk awareness using the "Risk Factor".
- d. General introduction course to OSH Culture.

#### **Strengthening of Leadership**

Aims to mitigate the identified critical risk. Delegated risk management in OSH, without empowerment to project and operation leaders. This includes the following actions: The following actions were included:

Strengthening the Management Committee

For systematic management reviews concentrating on critical risk mitigation actions, a typical weekly agenda was outlined for OSH issues and key performance indicators. Also, presenting the performance of contractors who face serious or high potential accidents was instituted.

• Performance Dashboard Design and Follow-up.

A performance dashboard was crafted to ensure discipline and sustainability of containment actions via proactive and results indicators. Weekly monitoring and actions are executed to improve practices that ensure the prevention of serious accidents.

#### Management Visits.

The practice of behavioral observations is pivotal for achieving safe behaviors driven by conviction rather than compliance. Management visits serve to inspire and convey to workers the importance of valuing life. Therefore, as part



of the leadership strengthening containment actions, monthly management visits by first-line leaders of the transmission business were proposed.

To execute these managerial visits, three actions were pursued:

- 1. Training in behavioral observation.
- 2. Accompaniment in the execution of management visits.

3. Designing the format and guide for conducting and recognizing management visits.

4. Analysis of trends in PowerBI findings.

#### Strengthening of Contractors - Priority Risk Mitigation Phase

This phase aims to mitigate a critical risk identified: variances in task execution by contractors, which may lead to severe accidents. The issue is exacerbated by inadequate control mechanisms during the processes of assignment, execution, evaluation, and conclusion. The following actions were included:

• Establishment of a monthly contractor accident prevention meeting, known as 'REMPAC'.

To achieve the desired improvement in contractor performance through these measures, the following activities were undertaken:

- 1. Rules and regulations for meetings were crafted.
- 2. A standard template was designed, regularly updated according to the priorities and specific shortcomings of each contractor.
- 3. The REMPAC meetings of project and O&M contractors were attended.
- 4. The OSH performance of critical contractors was monitored
- The consistency between the contractor's OSH performance evaluation acknowledged by auditors and actual field performance was analyzed.
- Workshops for analysis and solutions were organized, resulting in a plan where each contractor was encouraged to meet the planned qualification period and conduct a consistent evaluation.



#### Strengthening of the Occupational Safety and Health Function - Priority Risk Mitigation Phase

Seeks to mitigate the critical risk identified: a high percentage of field activities are critical and lack effective controls. (e.g., Corporate standards, risk perception, and analysis). The following actions were included:

- Critical OSH tasks were designed, monitored, and contractors were guided to correct critical deviations.
  - Minimum Operational Critical Risk Checklists (MORC) were created for:
    - Work at heights.
    - Confined spaces.
    - Excavations.
    - ☑ Load lifting.
    - Activities involving electrical risk.
    - Hazardous energies.
- After designing the MORC checklists, training workshops on critical tasks and alignment of the checklists' application were conducted for OSH professionals.
- E-learning training modules were developed, complete with virtual reality resources, for defined high-risk task scenarios.
- On a weekly basis, professionals perform verification and field guidance, with performance reviewed to identify specific and general improvement actions based on potential loss and compliance at work fronts.

|      | LOSS POTENTIAL  | COMPLIANCE  |  |
|------|---|---|--|
| 100% | •Low: (1/3) When the potential<br>of causing an injury is minor<br>(First Aid) or the violation of a<br>written rule or procedure is minimal. | • <b>Total (3)</b> 100% of<br>observed individuals<br>were in compliance or<br>exposed to high<br>potential |  |



|     | •Medium: (1) When a violation of a   |   |
|-----|--|---|
|     | written or unwritten rule or procedure   | •Partial: (1) At least one  |
| 50% | could  | person was non-   |
|     | cause a non-disabling injury   | compliant   |
|     | requiring a physician's attention.   |   |
| 0%  | •High: (3) When the potential<br>for incapacitating injury exists<br>(Injury leading to work time loss due<br>to hospitalization, rehabilitation or<br>death). | •Does not comply (0)<br>100% of observed<br>individuals were non-<br>compliant or exposed<br>to high potential for<br>disabling injury. |

Table 1. Definition of Loss Potential Criteria and Level of Compliance. Self-drafted.

 MORC checklist deviations are statistically analyzed with tools such as PowerBI. This aids in defining training needs, reinforcement, and setting new control measures.

• Design and implementation of Operation and Maintenance (O&M) planning scenarios.

To ensure a formal process for hazard and risk identification in work planning, so as to:

- Validate the definition of preventive measures and control mechanisms for identified risks.
- Validate the responsibilities of work participants.

Scenarios were created at different management levels to achieve this objective, in collaboration with Operation & Maintenance Management.



#### Learning from Accidents and Lessons Learned - Priority Risk Mitigation Phase

This phase aims to mitigate the critical risk identified: a potential recurrence of fatal accidents due to insufficient incorporation of company and sector lessons learned. The following actions were included:

- Definition of high potential accidents, along with monitoring and investigation. GEB has agreed to initiate high potential accidents solely in the people dimension:
- These accidents are those that could have had very high-level consequences, according to the risk assessment matrix of the Transmission Unit in the people dimension.

| Table A1 Consequence Assessment Matrix |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|
| Event t                                | ype Minor<br>consequence<br>C-1 category | Moderate<br>consequence<br>C-2 category  | Major<br>consequence<br>C-3 category   | Catastrophic<br>consequence<br>C-4 category  |  |  |  |
| Employo<br>health a<br>safety          | ee No injury or<br>nd health effects     | Injury type case<br>of Medical<br>Treatment or<br>reversible effect<br>on health | Multiple MTC<br>lesions, 1 or 2<br>RWC lesions,<br>LWC; or<br>moderate<br>irreversible<br>health effects | One or more fatalities or<br>irreversible major health<br>effects (serious impact<br>on daily life such as loss<br>of an organ, body part,<br>or sensory function) |  |  |  |

Table 2. Consequences Assessment Matrix. Self-drafted.

- Preparation of lessons learned
- To prepare lessons learned from accidents, the following actions were carried out:
  - Dissemination template design.
  - Definition of monthly dissemination of lessons learned on all work fronts.
  - $\circ$   $\,$  Monitoring of dissemination by leaders and professionals.

![](_page_17_Picture_0.jpeg)

### Execution of the Strengthening the Occupational Safety and Health Culture Phase.

The phase of Strengthening the Occupational Safety and Health Culture was developed following the model of **VISION ZERO** and included the development of the following stages:

- 1. Diagnosis. Initial evaluation of the maturity level of the OSH culture of GEB and its subsidiaries.
- 2. Definition of the safety vision and action lines.
- 3. Implementation plans of the action lines and adoption of the seven golden rules of VISION ZERO.
- 4. Behavioral training and intervention.
- 5. Implementation of new capabilities.
- 6. Stabilization and maturation of capacities.

![](_page_17_Figure_9.jpeg)

Graph 7. OSH Culture Strengthening Phase in GEB. Self-drafted.

![](_page_18_Picture_0.jpeg)

### Diagnosis. Initial evaluation of the maturity level of the OSH culture of GEB and its subsidiaries.

During Phase I, activities were conducted to diagnose the company's OSH culture and Process Safety maturity level. We analyzed and evaluated these aspects through the application of surveys, interviews, and by requesting documentary information.

Within the safety culture diagnostic document, we identified gaps and provided recommendations to close them. This allowed us to determine a culture maturity level for each subsidiary and the consolidated corporate GEB based on the perception of direct workers.

Simultaneously, we conducted a document review, visits, and interviews based on the 'Risk-Based Process Safety Management System Guide' published by the CCPS<sup>6</sup>. This allowed us to identify levels of compliance with the four elements recommended by the CCPS. The report outlines levels of application and the actions needed in the short and medium term.

From this analysis, we created the recommended work plans for the following 18 months of implementation in transforming the safety culture and process safety. This document was supplemented and agreed upon with dates and activities according to the needs of each subsidiary.

#### **Safety Culture Diagnosis and Intervention**

We carried out an analysis and evaluation through the application of surveys, interviews, and the request for documentary information. This resulted in the first diagnosis of safety culture and process safety.

GEB obtained a result of 57%, placing it at a **Calculative level** according to Parker's Ladder.

<sup>&</sup>lt;sup>6</sup> Center for Chemical Process Safety (CCPS). (2010). *Guidelines for risk-based process safety*. John Wiley & Sons.

![](_page_19_Picture_0.jpeg)

Imagen 2 Nivel de madurez del GEB en la escalera de Parker

Graph 9. Diagnosis of the Initial Culture of GEB and its Subsidiaries.

#### **Definition of the Safety Vision and Action Lines**

A workshop was held to define GEB's safety vision and its subsidiaries. This workshop was led by the President of GEB and the CEOs of the subsidiaries, with the management teams of each company participating.

The strategic lines of the OSH cultural transformation were outlined in this workshop, and the key pillars for the success of this process were defined:

- Safety culture and process safety.
- Shared vision.
- Proactive indicators.
- OSH Governance.

![](_page_20_Picture_0.jpeg)

![](_page_20_Figure_1.jpeg)

Graph 10. Graphic Recording Vision OSH Workshop.

#### Implementation Plans of the Action Lines and Adoption of the Seven Golden Rules of VISION ZERO

Following the application of diagnostic tools that enabled us to assess the company's OSH culture and process safety maturity level, and to define the safety vision of our senior management, we developed work plans. These plans took into account the specific needs and identified gaps.

We designed the OSH Management Model in collaboration with the leaders of Occupational Safety and Health from each of our subsidiaries, following the VISION ZERO strategy. We defined and established Corporate *Life First* committees for each subsidiary. These committees serve as governance bodies that facilitate synchronization within the business group when implementing strategies derived from the diagnosis and action plans.

![](_page_21_Figure_0.jpeg)

Graph 11. OSH Management Model - centered on the VISION ZERO strategy.

Work plans for the implementation phase were tailored to each subsidiary, taking into account the gaps identified in the diagnosis. These gaps were addressed across six cross-cutting lines: **Field Management, OSH Governance, Human Talent Management, Fair Culture, Process Safety, and Contractor Partner Management.** 

![](_page_22_Figure_0.jpeg)

Graph 11. The 6 Pillars of the OSH Culture Project.

#### **Behavioral Training and Intervention**

We designed a training plan catering to strategic, tactical, operational, and OSH levels. This plan covers five general knowledge areas: **Proactive Practices, Visible Safety Leadership, Workplace Safety, Process Safety, and Operational Discipline.** Topics were prioritized and disseminated between 2021 and 2022.

#### Implementation of New Capabilities

We applied diagnostic tools to understand our company's OSH culture and process safety maturity level, and to define the safety vision of Senior Management. With this information, we designed work plans addressing specific needs and gaps.

#### **Stabilization and Maturity of Capabilities**

We applied diagnostic tools to understand our company's OSH culture and process safety maturity level, and to define the safety vision of Senior Management. With this information, we designed work plans addressing specific needs and gaps.

At Grupo Energía de Bogotá and its subsidiaries, we have a clear understanding of our current safety culture maturity level. We have adopted the **Vision Zero** strategy as our path toward a generative safety culture. In this culture, safety is prioritized from the design and planning of each task and is intertwined with operations. This becomes our standard mode of operation, ensuring safety and emphasizing our corporate value of Life Comes First.

![](_page_23_Picture_0.jpeg)

### Results of the implementation of VISION ZERO in GEB and its subsidiaries in Colombia, Peru, and Guatemala

We can assert that we have achieved more than five years without fatal work accidents, both for direct employees and contractors. This is our finest credential as a Business Group. We aim to sustain this achievement in the years to come.

Our cultural value, **'Life Comes First'**, frames our strategic objective of developing an OSH culture across our subsidiaries in Colombia, Peru, Guatemala, and Brazil.

We have empowered OSH management leaders. This strategic task receives consistent follow-up in performance assessment.

**'Life Comes First'**, our corporate value, amplifies the positive impacts of our operations. With over five years without fatal accidents, we have significantly reduced the accident rate among our personnel and contractors. The main indicators achieved are summarized below:

## GrupoEnergíaBogotá

![](_page_24_Figure_1.jpeg)

Graph 12. Summary of Results - Early Victories Evolution OSH Culture GEB and Subsidiaries.

![](_page_24_Figure_3.jpeg)

Graph 13. Evolution of Perception Level of OSH Culture GEB and Subsidiaries.

![](_page_25_Picture_0.jpeg)

#### **Conclusions**

#### For us, life comes first.

Our core value is 'Life Comes First'. One of our essential objectives is to safeguard the health and safety of all our employees, ensuring they return home safely every day and enjoy their leisure time in a healthy and natural environment.

The results achieved in the OSH area at GEB solidify our convictions:

- Our strategy aims to solidify a culture of Occupational Safety and Health within Grupo Energía Bogotá. To achieve this, we executed a priority risk mitigation plan, also known as a containment plan, and developed a structured approach rooted in world-class best practices. This approach follows the Vision Zero model, contributing to our operational excellence and value generation.
- Our fundamental corporate value is that our employees' lives come first.
- We hold the conviction that every accident can be prevented.
- Leadership is crucial to safety and health.
- Safety and health are not only ethical obligations but also **profitable** ventures.
- Work, being a social determinant of health, should not deteriorate our health but should instead promote it.

Within the context of our Higher Purpose: *Improving lives with sustainable and competitive energy*, we are committed to sustaining these positive outcomes in occupational safety and health. We will continue to implement best practices from industry benchmarks, ensuring all our employees return home safely to their families.

![](_page_26_Picture_0.jpeg)

#### 1. Bibliography

- Occupational Fatality Rate by Economic Sectors 2020. Source: OSH Observatory - CCS. Available at <u>https://ccs.org.co/atel-col-2020/</u>
- <u>https://www.ilo.org/global/topics/safety-and-health-at-work/lang--</u> es/index.htm
- <u>https://www.ilo.org/global/about-the-</u> <u>ilo/newsroom/news/WCMS\_301241/lang--es/index.htm</u>
- <u>http://visionzero.global/sites/default/files/2017-11/3-</u> <u>Vision%20Zero%20Guide-Web.pdf</u>
- The Essentials of the Prevention of Serious, Fatal, and Major Technological Accidents. Institute for a Culture of Industrial Safety - ICSI. Retrieved from: <u>https://www.icsi-eu.org/sites/default/files/2020-</u> 07/Icsi\_essentiel\_ES\_prevencion-accidentes-graves-mortalestechnol%C3%B3gicos-mayores\_2019.pdf
- On the Prevention of Serious Injuries and Fatalities- Thomas R. Krause, Ph.D. Behavioral Science Technology, Inc. // Glenn Murray. Safety Programs Manager, Exxon Mobil Corporation
- Center for Chemical Process Safety (CCPS). (2010). Guidelines for riskbased process safety. John Wiley & Sons