

Human Capital Development - Highlights

Investing in human capital is a priority for Petrobras. Attention to people is highlighted in the company's Strategic Plan and the management of knowledge and critical skills is one of the strategic drivers of Human Resources.

From 2020 onwards, Petrobras made the Soft Skills Development Program available to all its employees, which promoted lives with market professionals, launched online courses and mediated virtual dialogue on 13 topics: Emotional Intelligence, Interpersonal Communication, Negotiation, Time Management, Mindfulness, Learning to Learn, Effective Presentations, Stress Management, Engagement and Sense of Work, Teamwork, and Creativity and Innovation, Diversity, Career management. We had over 4,000 completions in dialogues, over 8,000 in EADs, and over 24,000 in live sessions.

Also in 2020, Petrobras reorganized its leadership development portfolio based on the development of a leader who connects with himself, with the world, with the teams and develops teams. In this line of work, all programs launched since then have one or more of these focuses.

In 2020, due to the multidisciplinary nature of the mandatory topics intended for the leadership audience, the Corporate Challenges program was launched, which presents relevant content and problem situations for a better understanding of the conduct that should be adopted on a daily basis. In 2021, training addressed the following topics: Conflict of Interests, Compliance and Ethics, Social Responsibility, Information Security, HSE, Organizational Culture, Digital Transformation and Transparency, Sustainability Commitments and was completed by 98% of leaders. In 2022, two more modules of the course were made available. The first module covers the topics: Workplace Harassment, Intelligence and Corporate Security, Culture Journey, Social Responsibility, Procurement, and Digital Transformation. The second module covers the topics: Health (OHC), Climate, Communication and Brands, Governance, and SMS. We had over six thousand completions in each module.

Additionally, Petrobras has the Leaders' Onboarding program for leaders appointed within the last 2 years. It is a program based on 3 pillars: welcoming the new manager, clarifying their role, and establishing networks. Leaders undergo a 16-hour course consisting of lectures, dialogues, and activities on various topics relevant to their new role. They also complete a project that highlights the key highlights of a leader's day-to-day responsibilities. At the end of the course, groups are formed to address 4 specific themes: Human in Digital Transformation, Diversity, SMS (Safety, Environment, and Health), and Value-based Management System. Each theme is supported by a specialized tutor. Since its launch in 2020, we have had over a thousand participants in the program.

Continuing with the Corporate Women's Mentoring Program, which took place in 2021, a new cycle was launched in June 2022. In this cycle, we doubled the number of mentees from 15 to 30. There were 521 professionals who applied, demonstrating the interest of women in the company to participate in the program. In an unprecedented initiative, 20% of the spots were reserved for Black and mixed-race women, and 10% for women with disabilities. The program was launched in September 2022 and will conclude its cycle in May 2023. It is important to note that this program has inspired several others in specific areas of the company, and in 2022, 165 mentees have gone through or are currently participating in various women's mentoring programs at Petrobras.

Furthermore, nine pairs of professionals were also recommended for development through two Women's Mentoring Programs organized by the Brazilian Petroleum Institute (IBP) in 2022. It is worth noting that among these recommendations, three were for male professionals with the goal of increasing the diversity perspective we aim for in the company.

With the launch of the company's Human Rights Guidelines in 2020, numerous challenges were presented, starting with one of the sustainability commitments for the period 2021/2025, which involves a Human Rights Training Program. In August 2022, we launched the online training "Human Rights and Companies: A Look at Petrobras," a one-hour training that became mandatory in 2023 for Petrobras Controladora's own employees. Since its launch, over 20,000 own employees have already completed the course.

Started in November 2021, U-LEAD is a large program in partnership with the Dom Cabral Foundation, aimed at top management. The program's objective is to qualify leaders through disruptive learning experiences, enabling them to: act with protagonism, critical thinking adjusted to mental model transformations and new forms of management, considering diversity, equity, inclusion, and sustainability; share experiences and knowledge to meet Petrobras' strategic demands; and utilize new capabilities required for digital transformation. In 2022, over 400 leaders were trained, resulting in a total of over 3,400 participations in various disciplines offered through remote and in-person classes.

A highlight of 2022, Make It Happen! (MIH!) is a leadership development program, started in July 2022 and carried out in partnership with Fundação Dom Cabral, for middle managers, operational managers, including coordinators and supervisors, totaling a target audience of 6,447 leaders. The Program aims to develop leadership skills focused on the target culture defined by Petrobras: a single high-performance team, innovating and overcoming obstacles. It is a program made up of modules that total 180 hours of training and can be chosen according to the interest/need of the manager.

The leaders who started the MIH! Program obtained a better evaluation of competences and goals, and contributed to improve the results of our businesses. They averaged a 4.13 on the 2022 Performance Review cycle, which measures individual and team goals achieved by these leaders on a scale of 0-5.

From 6,447 MIH! Program audience leaders, more than 1,600 participated in at least one program discipline, with more than 11,000 participations in various disciplines offered. These numbers represent 24.8% of the target audience. The best qualification of our leadership, contributed strongly to the positive results obtained in 2022:

- We achieved an operating profit of US\$57.114 billion, 52% higher than 2021.
- Petrobras' sales revenue was US\$ 124.474 billion, 48% higher than 2021.
- The company's gross debt is within target, resulting in a net debt/EBITDA ratio of 0.63 times.

In addition, we reduced our carbon intensity ratings. We increased our proven reserves, production, and sale of oil products. These results demonstrate our leadership's commitment to improving business results and maintaining safety and respect for life and people as company values.

One of the initiatives in our strategic plan is to digitally transform Petrobras. To enable this transformation, one of the key competencies that needs to be developed and sustained is a data-driven culture.

In 2021, one of the highlights was the implementation of the Development Program in Analytics and Data Science, focusing on the development of data analysts and data scientists to promote a cultural change aimed at data-driven decision making. The Program aims to develop employees' digital skills to extract value from the data generated and accessed daily, supporting and improving the decision-making process, recognizing data as a valuable business asset.

As a result, we develop better data-driven solutions to business challenges, reducing costs, increasing our operational efficiency, adding value, and increasing our operational security levels. More than 800 dashboards and reports were created, generating valuable data for cost reduction, process improvement and data-driven decision making. Approximately 20,000 people monthly access and use the analytical solutions developed, totaling more than 400,000 accesses per month.

The initial training module for data analysts involved the participation of 1,709 employees. In the advanced module there are already 51 employees. The initial module for data scientists, with the participation of 108 employees. It is important to point out that, in addition to this Program, employees can enroll in separate courses. In this context, we have 934 employees trained in Power BI and 847 employees trained in Spotfire. In total, 74.4% of the target audience (professionals working in the technology area) participated in the program, representing 10.14% of the workforce.

Throughout its history, Petrobras has drilled more than 27,000 wells in 30 sedimentary basins, mainly in Brazil, both onshore and offshore, gathering a large volume of data from different disciplines: Geology, Geophysics, Petrophysics, Drilling, Reservoir and Engineering of production. The EXP100 Program is based on the application of geological processing algorithms, developed in an environment of data science, artificial intelligence, machine learning, high performance computing and automation to drive the entire exploratory process.

The People pillar, through investments in training and innovative training of teams, exemplified here by the CIAG (Artificial Intelligence Course applied to Geosciences) and CAGEO (Improvement Course in Geology), develops geoengineering analysis and the use of artificial intelligence techniques. CIAG has a workload of 920 hours and is carried out in partnership with UFMG (Federal University of Minas Gerais), which contributed with advanced knowledge in neural networks and deep learning. The CAGEO has a workload of 980 hours and is carried out internally at Petrobras, involving deep knowledge of mathematics, statistics and programming language applied to geological processing. In these trainings, real datasets of well profiles, petrographic blades, seismic amplitudes, and maps are used for practical exercises in the development of systems and solutions. By 2022, 76 professionals, including geologists, geophysicists, systems analysts, and engineers, were trained in 5 CIAG classes. And 88 professionals, including geologists, geophysicists, and systems analysts, were trained in 5 CAGEO classes. These numbers represent a total of 164 trained professionals, representing 29.7% of our target audience of 820 professionals.

Managers observed team performance gains. A framework of technical excellence was set up in the areas of AI and geological processing, previously little publicized and studied in depth. The application of technologies that use deep neural networks (Deep Learning) allowed the reduction of the interpretation time of seismic data volumes from 4 months to 10 days, on average. In addition, it enabled a better quantification of uncertainties and a reduction in the risk inherent in the exploratory activity.

It is essential to emphasize that reductions in time and risk during the exploration stage decision-making affect the entire E&P production value chain, leading to an anticipation of the production of new fields and, consequently, increasing the financial return of the business. As another example of improving time to market, the use of machine learning made it possible to improve the accuracy of the results and reduce the time of a project (inversion and AVO) from five to three weeks.

Finally, the company also recently filed a patent application for a method to optimize the selection of static pressure points obtained during the petrophysical evaluation of the well. This information is essential for understanding reservoirs during the exploration and production phases of oil fields. The new method reduced approximately 45 hours of drilling time in an oil field, representing cost savings of approximately \$505,000. This number represents just one of more than 200 offshore oil fields in which Petrobras operates.